

The International Fund for Agricultural Development

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**PEOPLE'S REPUBLIC OF CHINA**  
**GUANGXI ZHUANG AUTONOMOUS REGION**  
**GUANGXI INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT**  
**(GIADP)**

**DESIGN COMPLETION REPORT**

**Main Report and Annexes**

Asia and the Pacific Division  
Programme Management Department

REPORT No. [REDACTED]  
[REDACTED]

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#### WORKING PAPERS

- Working Paper 1: Community Infrastructure
- Working Paper 2: Agricultural Support
- Working Paper 3: Marketing Support
- Working Paper 4: Rural Environment Improvement
- Working Paper 5: Poverty Assessment and Gender Analysis
- Working Paper 6: Environmental and Social Review Note
- Working Paper 7: Project Costs and Financing
- Working Paper 8: Economic and Financial Analysis
- Working Paper 9: Root and Tuber Crops
- Working Paper 10: Procurement Plan (2012-2013)

### CURRENCY EQUIVALENTS

|               |   |                                 |
|---------------|---|---------------------------------|
| Currency Unit | = | Yuan (CNY)                      |
| USD 1.00      | = | CNY 6.50 (at detail design)     |
| USD 1.00      | = | CNY 6.45 (at design completion) |

### WEIGHTS AND MEASURES

International metric system, unless specifically described in text; except:

|       |   |          |
|-------|---|----------|
| 1 ha  | = | 15 mu    |
| 1 mu  | = | 0.067 ha |
| 1 kg  | = | 2 Jin    |
| 1 Jin | = | 0.5 kg   |

### FISCAL YEAR

1 January – 31 December

### ABBREVIATIONS AND ACRONYMS

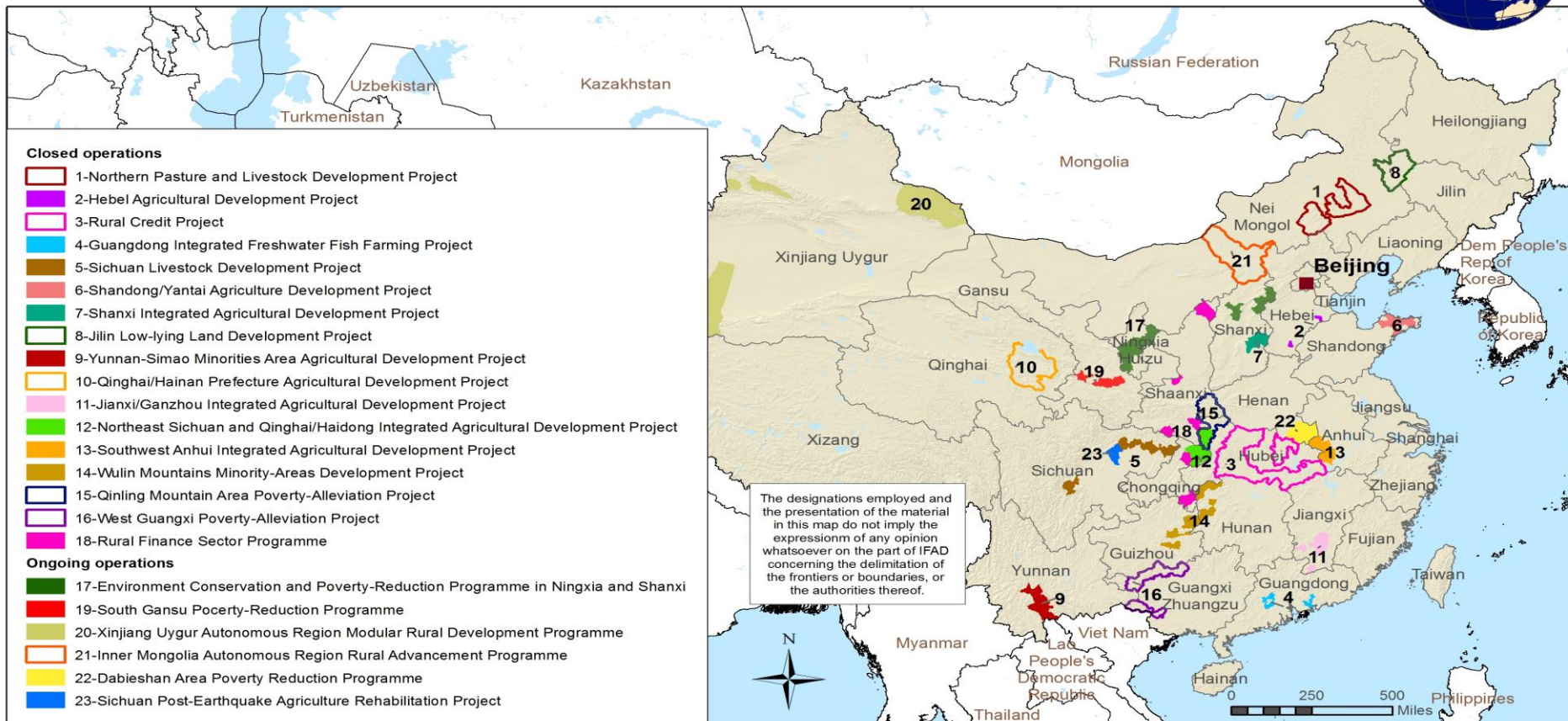
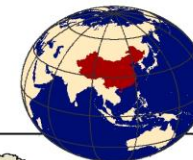
|       |   |
|-------|---|
| AWPB  | Annual Work Plan and Budget                         |
| BOA   | Bureau of Agriculture                               |
| BOL   | Bureau of Livestock                                 |
| BOT   | Bureau of Transportation                            |
| BOWR  | Bureau of Water Resources                           |
| CID   | Community Infrastructure Development                |
| CNY   | Chinese Yuan  |
| COSOP | Country Strategic Opportunities Programme of IFAD   |
| CPMO  | County Project Management Office                    |
| DOA   | Department of Agriculture                           |
| DOF   | Department of Finance                               |
| DOT   | Department of Transportation                        |
| DOWR  | Department of Water Resources                       |
| DRC   | Development and Reform Commission                   |
| GDP   | Gross Domestic Product                              |
| GOC   | Government of China                                 |
| GIADP | Guangxi Integrated Agricultural Development Project |
| GZAR  | Guangxi Zhuang Autonomous Region                    |
| HPAI  | Highly Pathogenic Avian Influenza                   |
| IA    | Implementing Agency                                 |
| IFAD  | International Fund for Agricultural Development     |
| IGA   | Income Generating Activity                          |
| ITSC  | Integrated Technical Service Centre                 |
| M&E   | Monitoring and Evaluation                           |

|      |   |
|------|---|
| MDG  | Millennium Development Goal   |
| MOA  | Ministry of Agriculture   |
| MOC  | Ministry of Commerce  |
| MOF  | Ministry of Finance   |
| MOST | Ministry of Science and Technology                                    |
| MOT  | Ministry of Transportation  |
| MOU  | Memorandum of Understanding   |
| MTR  | Mid-Term Review   |
| NDRC | National Development Reform Commission                                |
| PAO  | Poverty Alleviation Office  |
| PBAS | Performance Budget Allocation System (IFAD)                           |
| PLG  | Project Leading Group   |
| PMO  | Project Management Office   |
| PPMO | Provincial Project Management Office                                  |
| RCC  | Rural Credit Cooperative  |
| REO  | Rural Energy Office   |
| RIMS | Results and Impact Management System (IFAD)                           |
| RRN  | Reviewers Recommendation Note on the detailed design report for GIADP |
| SOE  | Statement of Expenditures   |
| TPMO | Township Project Management Office                                    |
| USD  | United States Dollar  |
| VIG  | Village Implementation Group  |
| WA   | Withdrawal Application  |
| WF   | Women Federation  |
| WFP  | The World Food Programme  |



## People's Republic of China

### Location of IFAD-funded operations



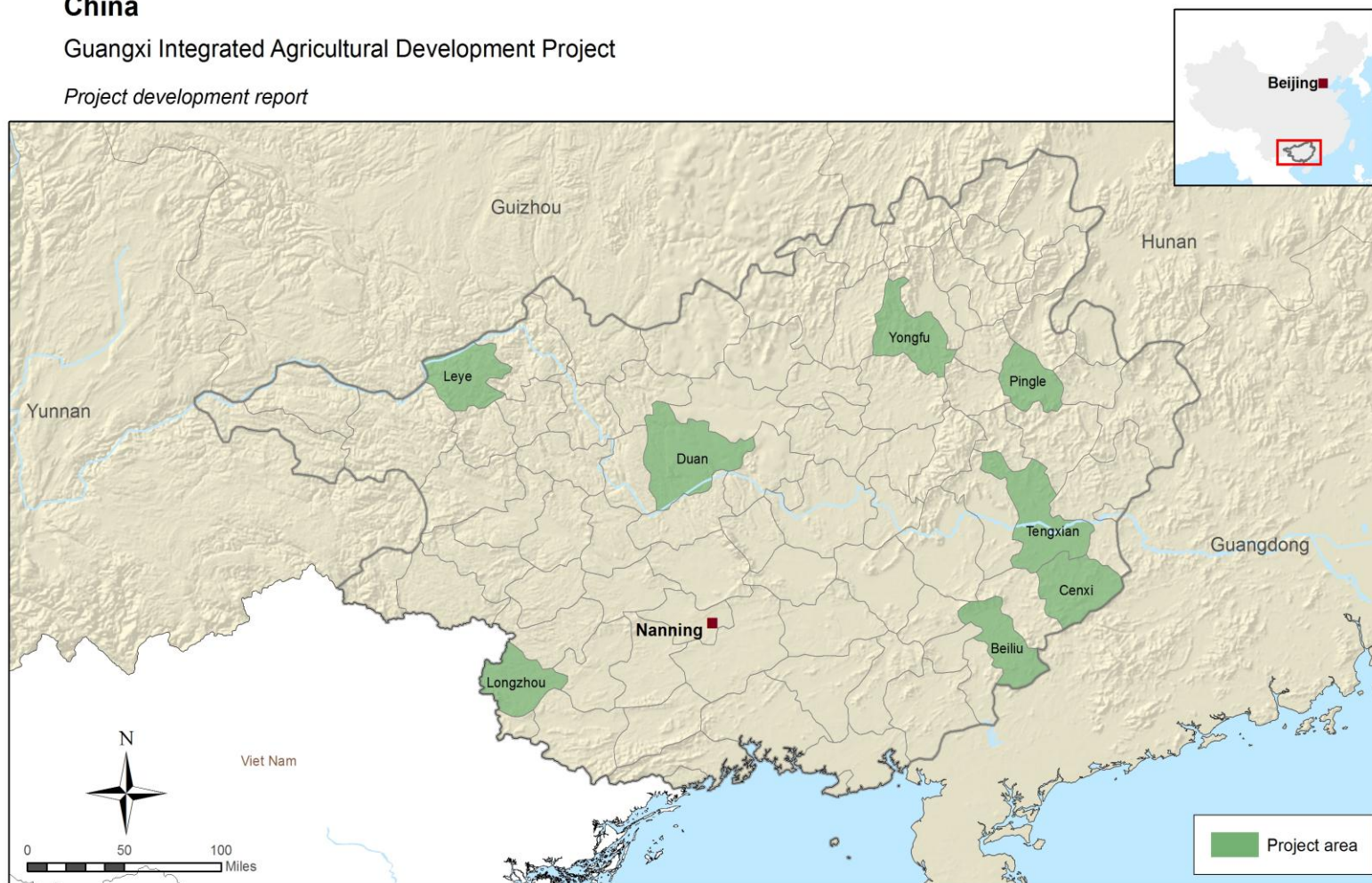
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## MAP FOR THE PROJECT AREA OF GIADP

### China

### Guangxi Integrated Agricultural Development Project

*Project development report*



11.10.2011



The designations employed and the presentation of the material in this map do not imply the expression of any opinion whatsoever on the part of IFAD concerning the delimitation of the frontiers or boundaries, or the authorities thereof.

Map compiled by IFAD



## Executive Summary

### Background and Rationale

1. While impressive progress has been achieved on poverty reduction, China faces an uphill task in poverty reduction. Available data show that the distribution of poverty between and within provinces varies widely, reflecting the regional economic disparities. An increasing share of the remaining rural poor are now concentrated in the western provinces/regions, and mostly in minority-concentrated, remote and mountainous areas. The government has been adopting the development-oriented poverty reduction strategy, aiming to achieve poverty reduction by focusing on the improvement of infrastructure, ecologically-sound agricultural development, strengthening marketing and financial services for the poor, encouraging private entrepreneurs and farmer organizations, and developing off-farm economic activities including migration. The Government expects IFAD continuing to bring conceptual inputs and experiences in terms of innovative approaches for poverty reduction from projects outside the country alongside additional financial resources.

2. Opportunities for IFAD's involvement in GIADP are identified on the basis of the perceived causes of poverty, the strategic considerations of both Government and IFAD, lessons learned from previous projects and analysis of institutional delivery capacities. The promotion of access and innovation continues to be the main guiding principle in project design and implementation. The main opportunities include: (i) increased demand of the rural poor for productive assets; (ii) strong needs of the rural poor in developing the commercialized production of cash crops and landrace livestock through improved access to information and technical services and markets; (iii) the rapid development of farmer cooperatives, to which the rural poor have, however, limited access; and (iv) the promotion of rural habitat improvement.

### Project Area, Target Groups and Targeting

3. Eight counties of GZAR have been selected to implement GIADP. They have jurisdiction over 1,504 administrative villages in 110 townships, with a total population of about 4.57 million. Of them, 623 administrative villages of 44 townships are identified to compose the project area, covering a total population of about 1.92 million. Data indicate that the 44 selected project townships recorded an average poverty incidence of 6.5% in 2009, which was 3.8 percentage points higher than the national average. Farmers' annual per capita net income was about CNY 2,686, which amounted to 68% of GZAR's average and 53% of the national average. The vulnerable population, with an annual per capita net income between CNY 1,196 and CNY 3,000, occupied about 53% of the total population. Many of them might easily fall back to poverty, particularly if they are hit by natural calamities. The main causes of poverty in the target area include: (i) limited resources; (ii) poor infrastructure; (iii) low capacity of farmers; and (iv) frequent natural calamities, mainly floods and drought.

4. The project support will focus on the poor and vulnerable households, while the better-off households will not be excluded. The poor and vulnerable groups represent about 60% of the total number of households in the project area. They will be identified based on perceived wealth ranking of socio-economic characteristics which provide an insight in the way that local people assess poverty and their ideas on the causes of poverty. Participatory approaches will be used in this process.

### Development Objective

5. The project goal is rural development and poverty reduction in the targeted areas, through scaling up of innovative approaches. The specific objective of the project is to increase the revenues of rural men and women from agricultural production in the project area of GZAR. The project will demonstrate its success through the following indicators: (i) scaled-up innovative approaches for rural livelihood enhancement; ii) improved access of poor men and women to community assets, markets, information and technology; iii) improved household asset ownership; and iv) socially and economically empowered women and ethnic minorities.

### Alignment with IFAD and Government Policies

6. Project design complies with the policies and strategies of IFAD's Strategic Framework (2011-2015) and the latest COSOP (2011-2015) for China, in terms of project objectives, targeting strategies, gender mainstreaming, governance, innovation, access to resources, technologies and markets, scaling-up best practices, engagement with the private sector, and focusing on the challenges of climate changes. The project is also aligned with the Government's poverty reduction strategies and rural development policies, aiming at reducing poverty and enhancing rural communities, especially



the 12<sup>th</sup> Five Year Plan (2011-2015) for National Economic and Social Development and the 2011-2020 Poverty Reduction Strategy.

### **Project Components**

7. **Community Infrastructure Development**, which is to enhance the living and agricultural production conditions for rural men and women, by integrated community infrastructure development, including irrigation canal lining, pavement of village roads, and construction of drinking water supply systems. These activities will be critical for the project area to strengthen the community resilience to frequent climate related calamities, improve the access of the rural poor to markets, information and technical services, and diversify agricultural activities, which are regarded as effective measures for rural development and poverty reduction at the current stage.

8. **Agricultural Production and Marketing Support**, which aims at increasing the revenues of rural men and women through the development of annual/perennial niche/cash crops and landrace livestock and the improvement of farmers' access to markets by supporting farmer cooperatives and value chain enhancement. This component will improve the access of poor men and women to sustainable production technologies, know how, investment support, information and markets. Through the improvement of township agricultural stations module and the institutional support package, the project will support the improvement of agricultural technical service networks for better services to the rural population.

9. **Rural Environment Improvement**. This component aims at improving the rural community environment of the project areas by developing alternative clean energy, and piloting village sanitation improvement approaches, incorporating them with the government program on the building of "new socialist countryside" and "Xiaokang" society. It covers two modules, namely biogas system and village sanitation improvement.

10. **Project Management** will include the establishment and operation of project management offices (PMOs) at province, county and township levels. Project implementation will be decentralised to the county PMOs to ensure sustainability, with the provincial PMO performing overarching functions of planning, coordinating, monitoring and reporting.

### **Implementation Arrangements**

11. The project will be implemented over five years. The implementation approach of the project will follow the successful practices of on-going and previous IFAD-funded projects in China, particularly the West Guangxi Poverty Alleviation Project (WGPAP) which was completed in 2008 and regarded as highly success. Project management offices (PMOs) will be established at Province, county and township levels, responsible for the planning, coordinating, monitoring, and reporting of the project. Implementation of project activities will remain with designated implementing agencies (IAs) at county level for result-added incorporation of the project activities with governmental development activities in the project area. The major IAs include the Bureau of Water Resources, Bureau of Transportation, Bureau of Agriculture, and Rural Energy Office. Field assessments indicate that those implementing agencies have a good capacity for undertaking project activities. At village level, a Village Implementation Group will be established to ensure appropriate targeting, participatory planning, implementation, and monitoring. Annual Work Plan and Budgets (AWPBs), which are developed through participatory approaches, will be used as the basis of the project implementation.

### **Costs and Financing**

12. The total project cost, including contingencies is estimated at USD 96.83 million (CNY 624.53 million). Physical and price contingencies amount to USD 8.2 million (CNY 52.9 million) and account for 10% of the total project costs. Cost estimates include all nationally applicable direct and indirect taxes and for the project interventions, the taxes are estimated at USD 3.9 million (CNY 25.35 million) and account for 4% of the total project costs. Investment and recurrent costs amount to 90.3% and 9.7% of the total cost, respectively.

13. The project will be jointly financed by IFAD and the Government (including the contributions of beneficiaries), at an approximate ratio of 50% IFAD and 50% Government. But there are variations between components and the activities within components. Government and IFAD will jointly cover the project investment costs including all module implementation costs, vehicles, equipment, and materials, workshops, training, and TA. Government will finance all the recurrent costs.

## Expected Benefits

14. The immediate benefits from the project will be increased revenue and productivity through improved productive assets, demonstration and up-scaling of niche cash crops production and landrace livestock production, improved access to information and markets, better conditions for technical training and extension, and enhanced effectiveness of technical services, etc. Rural women and ethnic minorities in the project area will be empowered, economically and socially, by participating in the project activities. Particularly, more women will participate in the processes of decision-making as a result of gender mainstreaming in the project implementation and management. It is expected that about 227,000 farmer households will directly benefit from the project; more than 50 % of them belong to the poor and vulnerable population and more than 50% of the beneficiaries will be women. Major outputs include:

- i) 314.5 km of existing earthen irrigation canals will be lined, which will benefit 46,000 households by providing them an improved irrigated area of 5,329 ha of farmland;
- ii) 69 sets of drinking water supply systems will be constructed, which will improve the access of about 17,500 households to safe drinking water;
- iii) 464 km of village roads will be paved, which will improve the access of beneficiaries in about 67,000 rural households to updated information, technologies and markets;
- iv) 4,070 ha of annual and perennial cash crops will be demonstrated and scaled-up, 320 household-based livestock demonstrations will be implemented, and about 30,000 farmers will be trained with new/updated technologies in crops and livestock development;
- v) 18 township agricultural stations will be built, which will benefit about 108,000 farmer households through improved access of rural men and women to agricultural technical services in a timely and effective manner, and women beneficiaries will be no less than 55%;
- vi) About 27,000 rural households will directly benefit from improved linkage between production and markets through the project's support to 44 farmer cooperatives, and 31,000 households will benefit from the value chain enhancement by provision of value-added facilities to 25 cooperatives and the building of 6 markets; and
- vii) 29 villages will benefit from improved sanitation through the provision of clean energy and improved habitat environment, which will benefit about 4,350 farmer households.

## Risks

15. The project is designed by following the demands of potential beneficiaries after fully analysing the conditions, such as constraints and opportunities of development, of the project areas. The activities designed are in line with the Government's policy directives and the strategies of poverty reduction and rural development. Risks for the project will, therefore, be due to the rapidly changing market conditions for farmers' products and the broader economic environment, as well as the results-oriented processes of implementation. These risks, however, would be mitigated to a great extent by the demand-driven nature and modular approach of the project, which will ensure continuous adjustments to address problems encountered during project implementation. Strengthened PMOs will play an important role in monitoring these risks and in ensuring that any issues that could jeopardize the project's success are addressed by relevant stakeholders in a timely fashion.

## Knowledge management, innovation and scaling up

16. The project knowledge management strategy will build on the experiences of previous and on-going IFAD projects in China. The PPMO and CPMOs will be responsible for capturing and documenting experiences, successful cases and innovations resulting from the project implementation, and organise semi-annual and/or annual workshops during project implementation to disseminate the experiences and innovations for scaling-up. Plans for scaling-up of successful cases and innovations within the project area will be incorporated into the project's AWPBs. Local governments will be encouraged to incorporate scaling up of those successful ventures into their own local development plans, either through support to scale up the innovations locally or through replication/expansion of the innovations outside of the immediate project areas, by governments or other donors.

### Project Logical Framework

| Narrative Summary  | Verifiable Indicators   | Means of Verification   | Assumptions  |
|--|---|---|--|
| <b>GOAL</b>  |   |   |  |
| Rural development and poverty reduction in targeted poor areas achieved.   | Successful innovative approaches for rural enhancement scaled-up.   | <ul style="list-style-type: none"> <li>• Government policies;</li> <li>• Donor's reports.</li> </ul>  |  |
| <b>OBJECTIVES</b>  |   |   |  |
| Increased revenue from diversified agricultural production in 8 project counties is achieved.  | <ul style="list-style-type: none"> <li>- 25% of HHs with improved asset ownership index compared to baseline (RIMS);</li> <li>- drop in child malnutrition prevalence from 17% at baseline to 13.6% (RIMS).</li> </ul>  | <ul style="list-style-type: none"> <li>• RIMS and benchmark surveys;</li> <li>• Impact assessment.</li> </ul>   | <ul style="list-style-type: none"> <li>• Continued government support;</li> <li>• Increased income improves assets;</li> <li>• Increased income of households leads to reducing child malnutrition.</li> </ul> |
| <b>OUTCOME BY COMPONENT (gender disaggregated)</b>   |   |   |  |
| <b>Component A: Community infrastructure:</b><br>Improved conditions for rural poor by developing community infrastructure (roads, irrigation and drinking water supply facilities). | <ul style="list-style-type: none"> <li>- 50% of HHs report increased productivity and access to information and markets;</li> <li>- 17,500 HHs access safe drinking water;</li> <li>- 50% of improved infrastructure schemes have O&amp;M arrangements in place.</li> </ul> | <ul style="list-style-type: none"> <li>• RIMS and benchmark surveys;</li> <li>• Project M&amp;E reports;</li> <li>• Agricultural census data</li> </ul> | <ul style="list-style-type: none"> <li>- Continued government investment to development of rural infrastructure</li> <li>- VIGs are capable in organizing maintenance of community infrastructure.</li> </ul>  |
| <b>Component B-1: Agricultural production:</b><br>Increased household incomes through improved access to services and development of crops and livestock.                            | <ul style="list-style-type: none"> <li>- 85% of farmers adopt recommended technologies, by sector;</li> <li>- 70% of households report increased income from development of cash crops/livestock.</li> </ul>  | <ul style="list-style-type: none"> <li>• RIMS and surveys;</li> <li>• Project M&amp;E reports;</li> <li>• Sector reports.</li> </ul>                    | <ul style="list-style-type: none"> <li>• Recommended technologies are effective in increasing production;</li> <li>• Service function of cooperatives recognized by farmers.</li> </ul>                        |
| <b>Component B-2: Marketing support:</b><br>Increase the production and marketing efficiency of rural poor joining the value chain system.   | <ul style="list-style-type: none"> <li>- 90% of targeted cooperatives and project value chain enhancement facilities are operational after 3 years;</li> <li>- 80% of members report increased marketing through cooperatives, by gender.</li> </ul>                        | <ul style="list-style-type: none"> <li>• RIMS and benchmark surveys;</li> <li>• Project M&amp;E reports;</li> <li>• Sector reports.</li> </ul>          | <ul style="list-style-type: none"> <li>• Service function of cooperatives recognized by farmers;</li> <li>• Improved rural infrastructure are maintained by local authorities/beneficiaries.</li> </ul>        |
| <b>Component C: Rural environment improvement :</b> Innovative approaches for improving rural habitat sanitation piloted successfully.   | <ul style="list-style-type: none"> <li>- 90% of project-built biogas systems and sanitation improvement schemes are well operated and maintained after 3 years.</li> </ul>  | <ul style="list-style-type: none"> <li>• Project M&amp;E reports;</li> <li>• Sector reports.</li> </ul>   | <ul style="list-style-type: none"> <li>• Government supports piloting habitat improvement schemes;</li> <li>• Villagers' awareness and interests in the schemes improved and maintained.</li> </ul>            |
| <b>Component D: Project management:</b> Project is implemented successfully, and M&E system functions effectively  | <ul style="list-style-type: none"> <li>• Project planning, implementation, M&amp;E and reporting function effectively and timely;</li> <li>• 100% of IFAD loan proceeds disbursed.</li> </ul>   | <ul style="list-style-type: none"> <li>• Project M&amp;E reports;</li> <li>• IFAD project reviews; and</li> <li>• Project completion report.</li> </ul> | <ul style="list-style-type: none"> <li>• PMOs have and use good coordination and management capacity; and</li> <li>• PLGs function adequately.</li> </ul>  |

x

(LOGICAL FRAMEWORK, Continued)

| Narrative Summary  | Verifiable Indicators   | Means of Verification  | Assumptions   |
|--|---|--|---|
| <b>OUTPUT BY ACTIVITY</b>  |   |  |   |
| <b>Component A: Community infrastructure:</b> Lining of irrigation canals, paving roads, constructing water supply systems, training   | 80 km of branch canals & 230km of lateral canals lined, 460 km of roads paved, 69 safe drinking water supply systems constructed, 113,000 farmers trained, by gender.   | Project M&E report, progress report, and sector reports  | Continued investment in infrastructure; standards are met.  |
| <b>Component B-1: Annual cash crops (module 1):</b> Demonstrations of new technologies and varieties; scaling-up; & beneficiary training.  | 130 ha of annual cash crops demonstrated, 1300 ha of cash crops scaled-up, and 16,000 farmers trained, by gender  | -Project M&E & progress reports;<br><br>-agricultural reports<br><br>-livestock reports<br><br>-sector reports | Annual cash crops have good markets; farmers adopt new technologies.  |
| <b>Component B-1: Perennial cash crops (module 2):</b> Demonstrations of new technologies and varieties; scaling-up; & beneficiary training  | 240 ha of perennial cash crops demonstrated; 2400 ha of perennial cash crops scaled-up; and 24,000 farmers trained, by gender   |  | Perennial cash crops have good markets; farmers adopt new technologies                                      |
| <b>Component B-1: Landrace livestock (module 3):</b> Provision of breeding stocks feedstuff; improvement of sheds and poultry facilities; beneficiary training   | 320 HHs provided breeding stocks; 320 households provided livestock sheds or poultry facilities; 320 HHs provided feedstuff; & 640 farmers trained, by gender   |  | Livestock products have markets; farmers adopt new technologies.  |
| <b>Component B-1: Improvement of township agricultural stations (module 4):</b> Construction of office and training spaces, & provision of equipment   | 18 township agricultural stations constructed; about CNY 10 million spent on provision of office and technical equipment to the 18 stations.  |  | Continued policies on improving township agricultural stations.   |
| <b>Component B-1: Institutional support:</b> Construction of training centres; provision of equipment; training of staff; and crop experimentations  | 5 county training centres built; CNY 0.53 million spent on training equipment for 5 training centres; 1,200 technical staff trained; 32 crop experiments conducted  |  | Continued policy directives on improving agricultural extension system.                                     |
| <b>Component B-2: Support to farmer cooperatives (module 5):</b> Poor HHs and women inclusion; access to new techniques & know how; market linkage & trade promotion; provision of office equipment  | 13,000 members admitted, by gender by HH category; at least 13,000 members trained, by gender; CNY XXX spent on market linkage & trade promotion; CNY XXX spent on provision of office equipment  |  | Continued support for cooperatives; farmers join cooperatives; Members are participate in training          |
| <b>Component B-2: value chain enhancement:</b> Provision of value-added facilities; Building of markets  | 25 farmer cooperatives provided with value-added facilities; 6 local markets built.   |  | Farmer cooperatives and mini-enterprises participate in project activities                                  |
| <b>Component C: Biogas system (module 6):</b> Construction of HH-based biogas digesters; latrine renovation; kitchen improvement; livestock-shed renovation; beneficiary training  | 569 HH-based biogas digesters constructed; 569 latrines renovated; 569 kitchens improved; 569 livestock-sheds renovated; About 850 beneficiaries trained, by gender   | Project M&E & progress reports, sector reports   | Continued interest in proposed packages   |
| <b>Component C: Village sanitation improvement (module 7):</b> Inner-village track construction; building of garbage collection stations; sewer construction; building of wastewater septic tanks; construction of drainage ditches; beneficiaries' awareness training | 29 villages' inner-village tracks built; 29 villages' garbage collection stations built; 29 villages' sewer constructed; 29 villages' wastewater septic tanks built; 29 villages' drainage ditches constructed; About 5300 beneficiaries trained, by gender |  | Continued support for village sanitation improvement; HHs dispose garbage in line with project requirements |

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**(GIADP)**

**DESIGN COMPLETION REPORT**

**I. INTRODUCTION**

1. A design completion mission<sup>1</sup> was assigned by IFAD to Guangxi Zhuang Autonomous Region (GZAR) of the People's Republic of China in July 2011. The main objective of the mission was to appraise, improve and finalise the project detail design documents of GIADP, which were reviewed by the Country Programme Management Team (CPMT) on 16 June 2011 and further went through the Quality Enhancement Review (QER) process of IFAD during the week of 24 June 2011.

2. The design completion mission conducted workshops at province and county levels to present a summary of the detail design to all key stakeholders. Discussions were held with the Department of Finance (DOF) and other relevant departments at provincial level, Project Management Offices (PMOs) of all levels, and Bureaux of Finance (BOFs) and the representatives of Implementing Agencies (IAs) of all 8 project counties. Field visits to villages and households were conducted in Leye, Beiliu, Tengxian and Pingle counties during 14-24 July 2011. Responses to the suggestions of IFAD's QER process, especially the reviewers' recommendation note (RRN), and the CPMT minutes are prepared and the detail design documents are revised by the mission based on the results of above-mentioned workshops, discussions and field visits. A Memorandum of Understanding (MOU) was signed between the Country Program Manager and the representative of GZAR on the wrap-up meeting held in Nanning on 28 July 2011.

3. The mission greatly appreciated and benefitted from the high level of collaboration and hospitality provided by the Government of GZAR and institutions at all levels, as well as the contributions made by the village committees and farmers visited during the mission.

**II. STRATEGIC CONTEXT AND RATIONALE**

**A. Country and rural development and poverty context**

4. **Macro-economic performance.** China has experienced an unparalleled economic expansion since 1978. About 10% annual real growth of GDP was recorded continuously for more than 10 years up to 2007 and about 9% increase of GDP was achieved in 2009 and 2010 against the challenge of the worldwide financial crisis which started in 2008. With this rapid economic development and a declining population growth rate, per capita GDP in current prices rose from CNY 381 in 1978 to about CNY 25,000 in 2009, equivalent to about USD 3,700. A significant shift in the composition of GDP has also taken place, with agriculture losing weight mostly in favour of industry and services. The average per capita net income for the rural population rose from CNY 686 in 1990 to CNY 5,153 in 2009. A large part of the growth in rural income that occurred in recent years has been as a result of wages from off-farm activities, though the ability to access off-farm opportunities is variable from province to province.

5. Regional disparities between provinces/regions and between urban and rural areas have been widening in the last decades. Economic growth has been far more rapid in the eastern provinces than the western provinces/regions. Per capita disposable income for the urban population is more than three times that for the rural population. This widening disparity is well recognised by the Government that has made a range of policy responses, including the complete abolition of agricultural taxes and

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<sup>1</sup>The mission consisted of Mr A.M. Alam, Rural Engineer & Economist/Financial Analyst; Mr Zheng Bo, Agricultural Development Expert; Ms Cai Kui, Social Development Expert; Mr Christopher C. Wheatley, Rural Enterprise/Marketing Linkage Expert; and Mr He Qibin, Team leader & Institutional Expert. Mr Sana F. K. Jatta, IFAD Country Programme Manager, joined the mission on 23 July 2011, stayed in the country till the 28 July, guided the mission during the rest of its consultations, participated in the Mission's wrap-up meeting, and undertook field visits to Pingle County from 24 to 25 July 2011.

freeing-up of labour migration regulations. Government has also actively tried to draw investment into the western provinces since 2000. However, poor human resources and physical infrastructure make the process of development in the west difficult and slow.

6. **Rural development.** China had an estimated total population of about 1,335 million people at the end of 2009. The share of the rural population has been decreasing in the last decades, from about 80% in 1980 to 53.4% in 2009. Around 40% of the total employment in China occurred in rural areas. They mainly occur in farming, forestry, animal husbandry and fishing. The total cultivated area of farmlands was about 122 million hectares in 2009, overall about 0.1 ha per capita. About 49% of the total farmland was effectively irrigated. The proportion of total arable area planted to food crops experienced a rapid decline, although this decline slowed down in the last 10 years, accompanied by diversification into other more profitable cash crops. However, this fall in sown area for food crops was more than compensated by yield increases, recording an increase of overall per capita food production from 319 kg in 1978 to 398 kg in 2009. This, combined with a steady decline in per capita grain consumption in urban areas, means that the Government has been able to consistently meet the central food security goal of its agricultural policy. Livestock and aquaculture also experienced a rapid development in the same period. Overall meat production rose from 9 kg/person in 1978 to 57 kg/person in 2009, while aquatic products increased from 5 kg/person to 38 kg/person.

7. Labour migration is an integral part of rural household coping strategies in China. It was estimated that more than 110 million rural labourers took up employment outside their townships in 2009, representing about 25% of the total rural labour force. Government policy is to facilitate rural to urban migration, by improved legislation of residence registration and social benefits for migrants, stricter application of labour contracting regulations and by the adoption of a National Plan for Training Rural Migrant Workers, 2003-2010, to improve vocational training for about 60 million prospective rural migrant labourers during the seven-year period.

8. **Poverty reduction.** China is widely recognized for its outstanding achievements in reducing poverty since the reform of the rural economy. Broad participation in the subsequent reform-driven economic growth, together with well-funded national poverty reduction programs, has brought a tremendous reduction in rural poverty during the past 30 years. Using the relatively low official poverty line of CNY 1,274 per capita (instead of the usual USD 1.25 per capita), the number of the rural poor population has fallen from about 250 million in 1978 to about 26.88 million in 2010. Compared to the rural population, this signifies a decline in rural poverty prevalence from 30.7% to 3.8%.

9. The dramatic reduction in the poor population has allowed China to already achieve and exceed the Millennium Development Goal of halving the proportion of the population with incomes below USD 1 per day between 1990 and 2015. However, available data show that the distribution of poverty between and within provinces varies widely, reflecting the regional economic disparities. An increasing share of the remaining rural poor are now concentrated in the western provinces/regions, and mostly in ethnic minority-concentrated, remote and mountainous areas. By the end of 2009, the poverty incidence was recorded at 0.1%, 3.1% and 8.2% for the eastern, central and western regions of the country, respectively. The poverty incidence for the 592 nationally-designated poor counties was about 11%, seven percentage points higher than the national average. These nationally-designated poor counties recorded an average farmers' annual per capita net income of CNY 2,842 in 2009, about 55% of the national average. Poverty reduction in these areas will be more challenging due to their poor natural resources and adverse production and living conditions. The key issue for assisting these remaining poor is not only to allocate more funds for poverty reduction, but more important is to make more efficient and effective use of the available funds. This can be achieved through a number of measures, including focus targeting on the poor villages, development of cash income sources by strengthening the monitoring and supervision of the use of poverty reduction funds/programs, the effectiveness of diversifying agricultural activities, and the improvement of access to remunerative markets. With the emphasis now being put on improving the productivity of the poor-concentrated areas, there is a need for innovative approaches in poverty reduction. IFAD has a comparative advantage in this regard due to its long experience, both in China and elsewhere.

10. GZAR is economically located in western China. It has a total population of about 50 million, of which the ethnic minority population accounts for about 38%. About 61% of the population resides in rural areas in 2009, seven percentage points higher than the national average though recording a similar trend of declining as the corollary of labour migration to urban areas. GZAR is one of the poorest provinces/regions in China in terms of both overall per capita net income and the poverty rate of rural population. The overall average annual per capita net income for the rural population was about CNY 3,980 in 2009, 77% of the national average. Overall poverty incidence for the rural

population was 4.6% in 2009. Key constraints to the development of the rural areas in GZAR include poor rural infrastructure including irrigation facilities, village roads, and drinking water supply facilities, and inadequate technical and information services. These result in low resistance to frequently-occurring adverse climate related calamities and the low-level commercialization of agricultural production. The serious drought calamity that occurred from the autumn of 2009 to the spring of 2010 caused tremendous difficulties to the inhabitants' living and production activities in GZAR. It was estimated that the calamity made more than 600 thousand rural inhabitants fall back into poverty.

11. **Western development policy.** Due to the disparity in economic development between the eastern and western provinces/regions of the country, the central Government issued a western development policy in 2000, which was to draw investment into western provinces including GZAR. This policy is continuing and more efforts are being made by the Government to accelerate the development of western provinces/regions. Its focus areas include, among other things, the acceleration of infrastructure development including irrigation facilities, ecological and environmental improvement, and restructuring and optimization of agriculture.

## B. Rationale

### Rationale

12. The government has been adopting the development-oriented poverty reduction strategy, aiming to achieve poverty reduction by focusing on the improvement of infrastructure, ecologically-sound agricultural development, strengthening marketing and financial services for the poor, encouraging private entrepreneurs and farmer organizations, and developing off-farm economic activities, including migration. A Farmer Cooperative Regulation was issued by the Government in 2007, which further promotes the development of rural farmer organizations and improves the market linkage in rural areas. Government and IFAD strategies on rural development and poverty reduction are aligned, and IFAD's support is well incorporated into the rural poverty reduction initiatives in the country. The Government expects IFAD continuing to bring conceptual inputs and experiences in terms of innovative approaches for poverty reduction from projects outside the country alongside additional financial resources.

13. While impressive progress has been achieved on poverty reduction in China, rising local and regional disparities in living standards demand further efforts to achieve the Government's objective of establishing the *Xiaokang society*<sup>2</sup>. In its country strategy, IFAD foresaw provision of support that will have to focus on the rural poor and low income households in remote areas and ensure their permanent lifting out of poverty. IFAD has demonstrated its comparative advantage in tackling poverty in remote and resource-scarce areas due to its long-term experiences in designing and implementing projects in some of the world's most remote and fragile areas, including in China.

14. Opportunities for IFAD's involvement in GIADP are identified on the basis of the perceived causes of poverty, the strategic considerations of both Government and IFAD, lessons learned from previous projects and analysis of institutional delivery capacities. The promotion of access and innovation continues to be the main guiding principle in project design and implementation. The main opportunities include: (i) increased demand of the rural poor for productive assets; (ii) strong needs of the rural poor in developing the commercialized production of cash crops and landrace livestock through improved access to information and technical services and markets; (iii) the rapid development of farmer cooperatives, to which the rural poor have however limited access; and (iv) the promotion of rural habitat improvement by Government.

15. IFAD's support will promote poor women's and men's access to information and knowledge, natural resources and their sustainable use, appropriate financial services, and remunerative and quality premium markets. Emphasizing IFAD's catalytic role, such efforts take the form of pilot activities. Positive results from piloting will subsequently be scaled-up in a larger area through government and IFAD joint efforts. The underlying rationale of GIADP is to add-value to government programs by helping identify and develop innovative and effective strategies that can be scaled-up. The project will therefore integrate various activities to achieve a synergistic effect for poverty reduction in the project area, linking together the improvement of community productive assets, the development of market-oriented agro-products and the enhancement of farmers' access to technical and information services and to remunerative markets.

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<sup>2</sup> *Xiaokang* is a Chinese term which evokes a middle-class society in which most people are moderately well off, prosperity is broadly distributed and material values and spiritual standards are equally important.



16. **PBAS for China.** The China 2011-2015 COSOP straddles two cycles of IFAD's performance-based allocation system (PBAS), namely the current 2010-2012 cycle and the succeeding one of 2013-2015. The exact allocations under the latter cycle are not yet known. However, assuming the same level of average annual PBAS allocation as for the current cycle, which amounts to USD 141 million, then the projected allocation for the 5 years (2011-2015) of the COSOP period shall be at least USD 281 million. The resources under the current cycle have already been allocated equally (USD 47 million each) between one project for the Guangxi (i.e. the present GIADP), Hunan, and Yunnan Provinces. The expected resources for the next cycle will be allocated to another three or so projects, depending on the conclusions of on-going IFAD09 replenishment negotiations.

#### **Links with complementary projects**

17. GIADP will establish links with relevant government and donor-funded interventions to exploit complementarity, maximize synergies, avoid duplication of efforts, and share lessons learned. The most relevant projects/programs include:

- The national T-bond biogas development program, initiated in 2003, which covers all counties in GZAR, including all of the project counties for GIADP. Through building household-based biogas systems together with the renovation of toilet, kitchen and pigpen, the program aims at improving agricultural production, increasing farmers' income, bettering rural sanitation and reducing dependence on forest and crop stalks for rural energy. The program also supports the establishment of a network of technical services on the maintenance of biogas systems at village level, which provides user-paid services including the repair of biogas stoves, replacement of biogas pipes, and maintenance of biogas digesters. GIADP will make use of the technical resources of the program to scale-up the construction of biogas systems in the project areas, where they are needed. This activity will mainly benefit the poor and vulnerable households since most of the better-off households have already built their biogas systems under the support of the mentioned national program. The maintenance of biogas systems built by GIADP will be undertaken by the service network established by the national program.
- The Ministry of Agriculture (MOA) launched a program, named "Demonstration County of agricultural extension service reform" in 2009, which introduces the participatory extension approach into the agricultural extension system, while improving the working conditions of township technical extension stations. MOA provides about CNY 1 million to each county to support demonstrations of new varieties and technologies, and technical training for farmers and technical staff. The DOA of GZAR provides extra funds to cope with implementing the program, with the conditions that the administration rights on personnel, materials and finance of the township agro-technical extension stations are taken charge of by the county Agricultural Bureau. Given that the agro-extension network remains the major service provider in the project area, GIADP will provide support to improving the conditions and effectiveness of agro-technical extension systems so as to improve the access of GIADP's target groups to technical services.

#### **Integration within the IFAD country program**

18. The design of GIADP takes into account the experiences learnt from both completed and on-going IFAD projects in China, mainly in the field of modular approach, participatory planning, targeting, gender mainstreaming, M&E, and management and coordination of implementation. In addition, GIADP further explores innovative approaches in the following fields: (i) community-based and inclusive targeting approaches, which are driven by the characteristics of poverty in the project area; (ii) appropriate flexibility remaining with PMOs and IAs, given the strong economic growth in the country; (iii) incorporation of project activities with Government's rural development and poverty reduction strategies; and (iv) value chain financing for poverty reduction.

19. The Provincial PMO and one of the county PMOs for GIADP executed a previous IFAD-funded project, namely the Western Guangxi Poverty Alleviation Project (WGPAP), from 2002 to 2008. The project effectiveness was evaluated as highly satisfactory at completion by IFAD, which is the result of a strong synergy between its three key ingredients, including high quality at entry, good capacity in implementation and management, and a favourable environment in terms of support provided by the Government. The experiences from WGPAP will add value to the implementation and management of GIADP. In addition, the Completion Evaluation Report of WGPAP raised a few recommendations to further reinforce the results of future IFAD-funded projects in the province and in China. These have been taken into account during the design of GIADP. They include mainly the following:

- Targeting of project townships will be based on factual indicators. For technical service activities, all villages within a township will be included in the project in order to enhance the critical mass in service delivery. Natural villages will be more clearly identified;
- VIGs will not only play a role for project planning and monitoring purposes, but they will be strengthened in their core management capacity;
- Ambitions of project partners regarding innovations will be screened systematically, from the design stage onwards, and periodically reassessed. Particular attention will be paid to the identification of local sources of innovation and their mobilisation during implementation; and
- The current M&E practices for on-going IFAD projects in China will be introduced to GIADP.

### III. PROJECT DESCRIPTION

#### A. Project area and target group

##### Project area

20. Based on the criteria agreed to by IFAD and the government, eight counties of GZAR were selected to implement GIADP. Three of them are nationally-designated poor counties, and the other five are vulnerable ones. The eight counties have a jurisdiction over 1,504 administrative villages in 110 townships, with a total population of about 4.57 million. Of them, 623 administrative villages of 44 townships are identified to compose the project area, covering a total population of about 1.92 million. The project townships and counties are shown in Table 1.

Table 1. List of Project Counties and Townships

| Project counties    | Townships to be covered by the project             |
|---------------------|--|
| Longzhou            | Xiadong, Binqiao, Wude, Jinlong, Xiangshui.        |
| Leye                | Luosha, Xinhua, Gantian, Tongle                    |
| Duan                | Gaoling, Baoan, Chengjiang, Longwan, Disu, Daxing. |
| Beiliu <sup>3</sup> | Beiliu, dali, tangan, Liuma, Mingle, Xinrong.      |
| Cenxi               | Botang, Malu, Nuotong, Anping, Cencheng, Guiyi.    |
| Tengxian            | Tangbu, Jinji, Mengjiang, Heping, Taiping, Gulong. |
| Yongfu              | Longjiang, Baishou, Sanhuang, Baoli, Yongan        |
| Pingle              | Pingle, Zhangjia, Shazi, yangan, Qiaoting, Dafa.   |

21. Available data<sup>4</sup> indicate that the 44 selected project townships recorded an average poverty incidence of 6.5% in 2009, which was 3.8 percentage points higher than the national average. Farmers' annual per capita net income was about CNY 2,686, which amounted to 68% of GZAR average and 53% of the national average. The vulnerable population, with an annual per capita net income between CNY 1,196 and CNY 3,000, occupied about 53% of the total population. Many of them might easily fall back to poverty, particularly if they are hit by natural calamities.

##### Characteristics of the project area

22. The project area belongs to the subtropical monsoon climate zone characterized by the *Karst*<sup>5</sup>, mountainous and hilly landforms. It demonstrates the habitual characteristics of poor areas in GZAR. Agriculture, livestock and labour migration are the main sources of household income. For many generations the population has been relying on the limited area of farmland and holding few animals

<sup>3</sup>The government of GZAR proposed the replacement of Qinbei county with Beiliu county since the former did not meet some requirements of the internal approval procedures. Change of a couple of project counties had been foreseen in the MOU of the project detail design mission. The design completion mission discussed the proposed change with the representatives of GZAR at a meeting held in Nanning on 12 July 2011 and it confirms that Beiliu county was selected by the provincial PMO based on the agreed criteria for selecting project areas.

<sup>4</sup>Data were sourced from the Guangxi Administration Centre of Foreign-Funded Projects for Agriculture.

<sup>5</sup>Karst is a geological term for limestone landscape characterised by water erosion features (gorges, potholes, sinkholes, etc)

in order to obtain the bare minimum for subsistence. The main causes of poverty can be summarized as follows.

- Limited resources: People have been relying on the limited land resources, with an average holding of just 0.05 hectares per capita. Diversified management is limited. For a large number of rural households, it is difficult to obtain initial capital for engaging in income generation activities.
- Poor infrastructure: The project area's irrigation infrastructure is mostly composed of small schemes that use run-off-river water through diversion structures. While the headwork and the main canals are constructed of masonry or concrete, the branch and laterals are often earthen canals. These canals are, over a period of time, either damaged due to floods or exposed to heavy silting or poor water management practices. Their irrigation functions have been greatly weakened, which aggravate the impact of frequent extreme weather conditions causing major calamities. Available data indicate that about 41% of farmland in the project townships are effectively irrigated. About 290 administrative villages and 4,695 natural villages are not appropriately accessible to outside road networks. About 726 thousand people in 6,153 natural villages have difficult access to safe drinking water.
- Low capacity of farmers: Most of the farmers have poor access to updated knowledge and technology for enhancing their productivity and tapping into the remunerative markets. Poor technical skills and lack of market information have been cited as the major constraints for farmers to improve agricultural production and to increase their income. Rural migrants also have difficulty finding jobs with good pay because of poor skills.
- Frequent natural calamities: Natural calamities, mainly drought and flood, occur in the project areas almost every year, which seriously limit the diversification of agricultural activities.

| Indicators  | Unit              | Longzhou | Leye   | Duan   | Cenxi  | Tengxian | Yongfu | Beiliu | Pingle | Total  |         |
|---|-------------------|----------|--------|--------|--------|----------|--------|--------|--------|--------|---------|
| Number of townships   | No.               | 5        | 4      | 6      | 6      | 6        | 5      | 6      | 6      | 44     |         |
| Number of administrative villages   | No.               | 53       | 48     | 89     | 112    | 98       | 54     | 90     | 79     | 623    |         |
| Number of natural villages  | No.               | 433      | 1104   | 3298   | 1914   | 2632     | 1041   | 1403   | 733    | 12558  |         |
| Number of households  | No.               | 23341    | 18236  | 64309  | 84848  | 92375    | 33146  | 87947  | 62742  | 466944 |         |
| Population  | Male              | Ps.      | 52243  | 44334  | 146679 | 180553   | 190857 | 66521  | 198608 | 129981 | 1009776 |
|   | Female            | Ps.      | 52189  | 41671  | 129777 | 162830   | 165362 | 62143  | 176124 | 118861 | 908957  |
| Nationalities   | Han Chinese       | Ps.      | 444    | 41306  | 2101   | 342889   | 355960 | 106327 | 358254 | 189640 | 1396921 |
|   | Ethnic minorities | Ps.      | 103988 | 44699  | 274355 | 494      | 259    | 22337  | 16478  | 59202  | 521812  |
| No. of labors   | Total labors      | Ps.      | 60649  | 41088  | 129370 | 212133   | 202490 | 75800  | 200268 | 114760 | 1036558 |
|   | Female labors     | Ps.      | 30219  | 19918  | 58214  | 90386    | 95526  | 34500  | 94126  | 58057  | 480946  |
| No. of migrants labors  | Total migrants    | Ps.      | 22548  | 18098  | 41396  | 44717    | 53975  | 18000  | 84462  | 46442  | 329638  |
|   | Female migrants   | Ps.      | 10834  | 8597   | 22766  | 21960    | 25259  | 8700   | 39694  | 22879  | 160689  |
| Farm land   | Paddy field       | ha       | 6195   | 2145   | 3614   | 6696     | 10641  | 7553   | 9826   | 6041   | 52712   |
|   | Rainfed land      | ha       | 13627  | 3399   | 9604   | 1576     | 3056   | 4720   | 905    | 4829   | 41716   |
| Forest  | Ecological forest | ha       | 43257  | 28173  | 10730  | 20556    | 32431  | 127623 | 27859  | 9983   | 300612  |
|   | Economic forest   | ha       | 1330   | 13117  | 39     | 42771    | 29089  | 2003   | 15916  | 48993  | 153258  |
| Average per capita farmland   | mu                | 2.84     | 0.91   | 0.75   | 0.36   | 0.52     | 1.43   | 0.44   | 0.66   | 0.74   |         |
| Average annual rainfall   | mm                | 1524     | 1230   | 1742   | 1442   | 1460     | 1988   | 1771   | 1331   | 1784   |         |
| No. of farmer cooperatives  | No.               | 1        | 7      | 8      | 43     | 100      | 65     | 32     | 25     | 281    |         |
| Effectively irrigated farmland  | ha                | 2145     | 1342   | 2052   | 5616   | 8861     | 4045   | 9676   | 4527   | 38264  |         |
| No. of natural villages without appropriate access to safe drinking water | No.               | 240      | 719    | 3050   | 820    | 269      | 185    | 539    | 331    | 6153   |         |
| Population without appropriate access to safe drinking water              | No.               | 46234    | 55303  | 255345 | 86495  | 81062    | 21945  | 57045  | 122134 | 725563 |         |
| No. of natural villages without appropriate accessible roads              | No.               | 26       | 108    | 1623   | 766    | 362      | 848    | 585    | 377    | 4695   |         |
| Administrative villages roads in bad conditions                           | km                | 170      | 482    | 734    | 1253   | 523      | 273    | 43     | 27     | 3505   |         |
| Households with per capita net income >CNY 3000                           | No.               | 9587     | 7255   | 16837  | 24878  | 42055    | 11084  | 53206  | 24296  | 189198 |         |
| Households with per capita net income between CNY 1196 and CNY 3000       | No.               | 10475    | 7662   | 39323  | 56117  | 46386    | 19263  | 32935  | 35432  | 247593 |         |
| Households with per capita net income < CNY 1196                          | No.               | 3279     | 3319   | 8149   | 3853   | 3934     | 2799   | 1806   | 3014   | 30153  |         |
| % of households with per capita net income between CNY 1196 and CNY 3000  | %                 | 44.9     | 42.0   | 61.1   | 66.1   | 50.2     | 58.1   | 37.4   | 56.5   | 53.0   |         |
| % of households with per capita net income < CNY 1196                     | %                 | 14.0     | 18.2   | 12.7   | 4.5    | 4.3      | 8.4    | 2.1    | 4.8    | 6.5    |         |
| % of households with per capita net income < CNY 3000                     | %                 | 58.9     | 60.2   | 73.8   | 70.7   | 54.5     | 66.6   | 39.5   | 61.3   | 59.5   |         |

23. **Agriculture and livestock.** In the project area, agriculture is mostly based on smallholder farming with traditional and extensive techniques. Poor households continue to cultivate grain crops for food security. Cropping and livestock activities are the main sources of income for most of the households, making up 50-90% of total household income, of which about 30-40% come from cropping and 20-50% from livestock. Diversification of agricultural activities is limited, though great potentials are reported. Major crops of the project counties include paddy rice, corn, sugarcane, soybean, groundnuts, canola, sweet potato, potato, cassava, fruits and vegetables. Fruits and nuts of the project areas are subtropical crops including mandarin, kiwi, litchi, longan, grapes, chestnut, plum, *Corsvenor Momordica* fruit (*Luohangou* in Chinese) and walnuts. There are a large number of vegetable crops produced in the project area including leaf vegetables, ginger, cucumber, chilli pepper, various gourds and taro. In addition, oolong tea, honey suckle, lily and bamboo shoots are also produced in some of the project counties.

24. Predominant cropping patterns for paddy fields include paddy rice + paddy rice + winter vegetable; paddy rice + paddy rice + potato; paddy rice + autumn vegetable + winter vegetable; paddy rice + paddy rice + winter fallow; early maturity corn + late paddy rice + winter vegetable; in some areas, paddy rice fields are used for year round vegetable production with multiple harvests; sugarcane is also a major crop in both paddy and upland areas. For uplands, major cropping patterns include: groundnuts + sweet potato; spring corn + autumn corn + sweet potato; spring soybean + groundnuts + sweet potato; cassava intercropped with groundnuts or legume; and year round vegetable production with multiple harvests. Regardless of paddy fields or upland, intercropping and crop rotation have been a well-established and adopted practice in the project area. The cropping pattern varies among project counties in relation to the agro-climate and soil conditions and the availability of irrigation. The current cropping intensity is about 170%-190% among the project counties, while irrigation intensity is around 150% on the 41% of the project area that is currently irrigated. Perennial crops are produced through fruit orchards and plantations.

25. Livestock production is scattered and small household-based, mainly of pig, goat, cattle and poultry. Inhabitants in the project area are paying more and more attention to the production of high-valued niche crops and landrace livestock based on local conditions, which in many cases links to the development of farmer cooperatives. This constitutes a good potential for increasing incomes of rural households though currently still on a limited scale.

26. Similar to elsewhere in the country, agro-food systems in the project area are restructuring rapidly. Major structural changes occur in food production and distribution, as well as in the nature of relationship between producers and consumers. Conventionally, small producers consume most of their products and sell the surplus to the on-spot markets nearby. They decide what they want to produce. Today, they have to compete with more efficient domestic agricultural businesses or with imports, if small producers want to enter the high-value markets or to capture a price premium. Consequently, they have to join the ranks of efficient commercial producers by consolidating their neighbors' land. Meanwhile, compliance with food regulations on the use of fertilizers and chemicals also requires a greater degree of coordination throughout the food system. Better coordination among the stages of the food chain is becoming necessary, resulting in the movement towards negotiated contracts and away from spot markets. As a result, small farmers have to deal with a host of business players along the food chain including traders, middlemen, market inspectors, processors, and supermarkets.

27. **Technical services.** The Agricultural Extension system is established at all levels from the province to township, corresponding to the national structure of the Ministry of Agriculture (MOA). The extension service stations under the Bureau of Agriculture (BOA) at county level are the main technical service providers for agriculture and livestock development in rural areas. Although all project townships have established Integrated Technical Service Centres (ITSCs) which are mostly directly managed by township governments and technically supported by corresponding agencies at county level, they, in most cases, function poorly: (i) little fund is available from township governments for technical extension; (ii) some of the extension agents' posts are occupied by non-professional personnel due to the cutting down of administrative personnel in previous institutional reforms; (iii) extension agents cannot adequately devote to technical extension since they are overloaded with other tasks assigned by township governments. Currently, MOA and the provincial Department of Agriculture (DOA) are making efforts to strengthen the function of the technical service network by recovering the administrative rights of township agro-technical extension stations and providing extra funds to improve their service conditions. This action will be helpful to improve the access of rural farmers to technical services and information, particularly in the remote and mountainous areas.

28. The technical envoy system, launched by the Ministry of Science and Technology (MOST) in 2002, is designed to encourage extension agents to provide technical services to farmers and improve the effectiveness of technology transfer to rural areas. This system is piloted in the southern and eastern parts of GZAR, but mainly focuses on the relatively advanced areas and on the better-off farmers with commercialized production on a large scale. It has not yet reached the project area for GIADP. Implementation of the system also meets the problem of personnel administration in practice since the main sources of technical envoys are the existing technical agencies. Currently, the technical envoy system cannot replace the conventional technical extension system, but remains complementary to it. Similarly, technical services provided by Academe, Research Institutes and Colleges on agriculture are also complementary. The rapidly-developed farmer cooperatives in many cases provide effective technical services to their members in rural areas, but they mainly cover those relatively large scale specialized producers.

29. In general, the current agro-technical extension procedure includes four elements of test, demonstration, training and extension. Field demonstrations, together with on-site training, are the main measure of extension and they are regarded effective for technology transfer. In-door technical training on crops and livestock are held for farmers, who are usually the demonstration farmers and village leaders. Extension agents typically make their contacts with the village leaders and demonstration farmers because they are considered the main actors of transferring information and new technology to other farmers.

30. Technical services of livestock are undertaken by the technical service network of the Bureau of Livestock (BOL). Differently from the cropping sector, technical service delivery of the livestock sector is appropriate and timely in the project area. Since the outbreak of the highly pathogenic avian influenza (HPAI) in 2004, the Government has intensified its support to the livestock sector, including the establishment and strengthening of township livestock stations. Each township has a well-functional livestock and veterinary service station with appropriate equipment provided by the Government through MOA. The township technical staff also carry out surveillance of animal epidemics and provide technical training to farmers in animal husbandry. At village level, there is at least one epidemic disease control technician in each village, who carries out the compulsory vaccinations of livestock and poultry, as well as disease control for animal.

31. **Farmer cooperatives.** The project counties are experiencing a rapid development of farmer cooperatives, attributing to the promotion of Government. There are 633 farmers' organizations recorded in the project counties, of which 558 or 88% are legally registered as cooperatives or social development associations, respectively with the Bureau of Industry and Commerce Administration and the Bureau of Civil Affairs. About 79% of them were reportedly initiated by government encouragement and some received government subsidies at their registration; 16% of them were initiated by progressive farmers of strong leadership and income generating activity (IGA) skills, and they tend to have acquired better capacity of organized farming and marketing, but remain inefficient in capacities of processing, storage and transport. Sixteen per cent of the organizations have been established at village level, 68% at township and 26% at county capitals. The structure of their location indicates the trend of farmers' regrouping by sector of activity and they are very much driven by the purpose of production and marketing. Another reason for the cooperatives to move up out of the village level may relate to the lack of well-assigned trading centres with buyers from outside in the project area; they need to get as close as possible to the roads accessible by trucks and lorries. Only 4% of the organizations report having independent offices; the majority operate informally, usually in a spare room or corner of a leader's house.

32. There are 281 farmer cooperatives in the selected project townships, mainly on cropping, livestock and marketing. In general, the household coverage by these cooperatives is low and mainly the relatively large-scale producers are included. Most of the cooperatives are headed by relatively wealthy farmers who usually have significant economic influence in the area. Membership is usually selective and a minimum threshold to accede is set up for potential members. The threshold might include the size of farming area or the number of animals. They provide information and technical services to their members in the value-chain from production to marketing. Some of them supply their members with production materials to improve and unify the quality of products for price premium; or assist their members contacting with buyers. However, most of them are still at their early stage of development, especially in the area of organizational services and capacities that help members move up the value chain by adding value to products of primary form through assuming increased roles in packaging, processing, and marketing the members' produces. Their operational modality and adequacy also vary greatly.

33. The farmers who lead and run cooperatives are usually favoured by local authorities. They are often the major recipients of government's support to the cooperative sector, with the consideration that they will bring about the development of the local rural economy through industrialized and commercialized production of certain products and the improvement of marketing. Given the cooperatives' outreach and their membership being essentially the small producers, financial support for their further development will be helpful to local farm households in diversifying farming activities and increasing income.

34. **Marketing and value chain.** There is a mixture of products marketed, dominated by primary farm products and raw materials. Some semi-processed and finished products, such as tea, rice and flour are increasingly becoming important in the project counties, but with basic processing and packaging facilities of poor efficiency. Local farmers and farmers' cooperatives tend to rely heavily on the brokers or wholesalers' will and action in coming to the farm-gate and purchasing their products. Among 633 farmers' cooperatives recorded in the project counties, only 28% of them reported external sales out of their counties; 18% have no regular supply agreement with the wholesalers; and 73% are without regular sales to the retailers.

35. Farm-gate sales share about 7–12% of the market retail price profit, as compared to the conventional 20% or higher in the province. This is mainly due to the consolidation of global and domestic markets that has shifted the market power to the end of the wholesalers and retailers. Such change has increased the pressure on the margin of production level, especially for production undertaken on the basis of individual smallholders. Poor households become even more vulnerable due to their social and economic isolation, gradually losing their already low competitiveness and bargaining power. Their production remains at the lowest level of the value chain, hardly connected to the market access, if any surplus is available for trade.

36. As a response to the price dynamics which are often to the disadvantage of the farm producers, an initiative of building a close linkage between production and marketing has been promoted by local governments and the business community, mainly by organizing individual households into organized production and marketing groups in the form of farmer cooperatives. Organized production usually helps gain 2-5% of premium for the farmers likely from the value added through processing, packaging, storage and transport; organized marketing has the potential of exploring a better share resulting from processing and logistic levels, and negotiating an additional 5-10% of premium from the wholesalers or retailers.

37. The central government such as the MOA, MOC, MOT, MOF and NDRC also facilitate the circulation of farm produces from the western to the eastern regions, through publishing real-time information of products' supply and demand and prices, as well as market forecasts to both the originations and destinations via internet websites and such information is disseminated to farmers without access to internet via a number of channels including television, radio and local newspapers, etc. MOA has special policies to encourage farmers to organize themselves in order to enhance the production and marketing of farm products, following the Law of Farmer Cooperatives of China. The "green channel" for live and perishable farm produce on the nationwide road network is one of the special policies designed to speed up transportation of farm produce across regions and provinces, facilitating the marketing of agro-products.

38. It is increasingly recognized that to tackle rural poverty, market related issues such as access to know-how and technologies, production and marketing institutions, linkages and trade rules are among the vital considerations. With limited resources, the rural poor are in a disadvantageous and vulnerable position while facing the market challenges posed by globalization. Regional economic development will not be fully sustainable if its beneficiary coverage by-passed the rural poor. It is based on this rationale that efforts of value chain development should include the rural poor and female-headed households, providing equitable opportunities for livelihood improvement.

39. **Rural environment.** Most of the households in the project area use firewood and crop residues for their energy needs. Since many male labourers migrate seasonally to towns for employment, the responsibility of collecting firewood in most cases falls on women. Often combusted in open fires or poorly ventilated stoves, firewood burning is a major source of indoor air pollution in the households. Animal excreta discharging randomly in public sites in the villages result in serious pollution of the habitat. They actually can be collected and used to produce clean energy by building biogas digesters.

40. There are few facilities for garbage collection and disposal, sewage treatment, and flood and drainage control in villages. Inside-village roads are generally in very poor condition. Mud and animal manure often mix on the footpaths especially during the rainy season, which causes inhabitants

difficulties in moving around. Rural inhabitants often dispose off garbage all around randomly, even into ponds and ditches, as they do with the discharge of sewage, due to the weak awareness of environmental protection. In particular, pesticide containers and dead animals are also found around habitat and farm land in some villages, which could have high risks for the inhabitants' health.

41. **Labour migration.** Labour migration to towns and cities for employment has been an important source of cash income for many rural households in the project area. The 44 project townships had a total labour force of about 965,000 in 2009. About 288,000 or 30% of them migrated out of their towns for employment, of which about 48% were women. These migrants were mainly the young labourers. Increased feminization and ageing of agriculture in the project area will be the subsequent result of this type of labour migration.

42. **Climate changes and mitigation.** Extreme weather resulting from the global climate changes occurs frequently. Since China issued its first National Communication on Climate Change in 2007, the government has increased its attention to coping with climate changes. The second National Communication on Climate Changes is being developed, in which specific measures will be outlined for implementation in the agricultural sector. Climate-related risks in the project area mainly include floods and drought which have affected the agricultural activities of small farm-holders from time to time. Effective measures needed to mitigate the impact of such extreme weather include the improvement and/or development of rural infrastructure particularly irrigation facilities, awareness training for technical extension agents and farmers in response to climate changes, adoption of new technologies including water-saving irrigation, development and introduction of drought resistant crop varieties, etc. These measures have been incorporated into the project design of GIADP.

### Target group

43. Interviews with farmer groups revealed that farmer households in the project areas could be categorized into three groups based on perceived wealth ranking, i.e. better off (A), vulnerable (B), and poor (C). The farmers' perception is consistent with the results from discussions with the representatives of poverty reduction institutions in terms of wealth ranking of rural households in the project area. These categories are based on socio-economic characteristics which provide an insight in the way local people assess poverty and their ideas on the causes of poverty. The perceived categories of poor households, causes of poverty, and adaptive strategies for alleviating it, summarized in Table 3, assisted in the project design and development of the proposed targeting approach. The project support will focus on those poor and vulnerable (categories C and B) households, while the better-off households will not be excluded. However, part of the poor group might need to rely on social welfare and direct government support. The categories C and B households represent about 60% of the total population in the project area.

Table 3. Household Wealth Categorization in the Project Area

| Household Categories   | Main Characteristics   | Project Targeting  |
|--|--|--|
| <b>Category A: 35%-45%</b><br><b>Better-off group:</b> with an annual per capita net income above CNY 3000 in 2009.                          | <ul style="list-style-type: none"> <li>◆ Regular and good income from off-farm activities, cash crops or livestock, with surplus cash income annually;</li> <li>◆ Well above average in education and health status;</li> <li>◆ Good access to financial services.</li> <li>◆ Good capacity and skills in management of household businesses;</li> <li>◆ Good access to markets and information.</li> </ul>                        | Eligible mainly for community-based and information and technical services activities.   |
| <b>Category B: 50%-60%</b><br><b>Vulnerable group:</b> with an annual per capita net income between CNY 1196 and 3000 in 2009.               | <ul style="list-style-type: none"> <li>◆ Limited or occasional income from off-farm activities, cash crops or livestock, with limited or no surplus cash income annually;</li> <li>◆ Average or below average education and health status;</li> <li>◆ Limited access to financial services;</li> <li>◆ Ordinary capacity in management of household business; and</li> <li>◆ Limited access to markets and information.</li> </ul> | Main target group for the project: Eligible for all project activities.  |
| <b>Category C: 5%-10%</b><br><b>Poor group:</b> with an annual per capita net income less than the national poverty line, CNY 1,196 in 2009. | <ul style="list-style-type: none"> <li>◆ Very limited or no income from off-farm activities, cash crops and livestock, insufficient for household basic needs;</li> <li>◆ Poor education or health status;</li> <li>◆ Very limited or no access to financial services;</li> <li>◆ Very poor capacity in management of household business; and</li> <li>◆ Very limited or no access to markets and information.</li> </ul>          | Eligible for all project activities, and enjoy priorities. <i>The lower layer of this group might not be able to participate in project activities</i> |



44. **Gender.** Similar to elsewhere in the country, the patrilineal system is practiced in the project area. In general, the overall socio-economic status of women is worse than men in terms of education, health and access to technical and information services. Most women cultivate the land under their husbands' name. At village level, men are the key decision makers and very few female village heads are found. Women are still very much under-represented in decision-making roles. With regard to the division of household labour, men play the key role on transaction and heavy manual work, while women take care of daily farming activities that require less manual labour, but are more constant and time consuming. In many cases women are rapidly becoming the main labour for farming activities due to migration of men, in addition to their traditional household roles. Although it is becoming common that both men and women discuss to make joint decisions on relatively large amount of expenditures, men are often the final decision-makers. Women are the most severe victims of poverty in the project areas. This is not so much because of their social position, which in fact is characterized by remarkable improvement, but because of the specific coping strategies. Results from field visits indicate that almost all women have strong interest in diversification of agricultural activities in order to increase household income for the improvement of family livelihoods. The project will pay particular attention to supporting women during its design and implementation by tailoring to their capabilities and needs.

### **B. Development objective and impact indicators**

45. The **project goal** is rural development and poverty reduction in the targeted areas, through scaling up of innovative approaches. The **specific objective** is to increase revenues from agricultural production in the 8 project counties of GZAR. The project will demonstrate its success through the following indicators: (i) scaled-up innovative approaches for rural enhancement; (ii) improved access of poor men and women to community assets, markets, information and technology; (iii) improved household asset ownership; and (iv) socially and economically empowered women and ethnic minorities.

### **C. Components/outcomes**

46. Both modular and activity-wise approaches are applied in the project design and implementation, depending on the interventions. The modular approach is considered an improvement since it will allow a greater degree of flexibility in planning, costing and implementation, thereby allowing the project to respond more effectively to beneficiary needs, while maintaining the rigour required in committing resources and in internal and external control of actual expenditures. A module is defined as a small-scale set of inter-related activities aimed at achieving a specific objective that can be implemented independently of other modules, and that can be easily replicated in other areas. A module includes all variable costs required for implementation of the activities concerned. Activities under a module are interrelated but independent of activities in other modules.

47. GIADP includes four components: (i) community infrastructure development; (ii) agricultural production and marketing support; (iii) rural environment improvement; and (iv) project management. It should be noted that the projections established during design are intended to be indicative, providing a basis for the subsequent preparation of detailed Annual Work Plans and Budgets (AWPB). The final scope of related activities will be based on detailed consultations with the target groups in the communities.

#### **Component A: Community infrastructure development**

48. The purpose of the community infrastructure development component is to enhance the living and production conditions for rural men and women, by developing community infrastructure including irrigation facilities, village roads, and drinking water supply facilities. These activities<sup>6</sup> will be critical for the project area to strengthen the community resilience to frequent calamities caused by extreme weather conditions, to improve the access of the rural poor to markets, information and technical services, and to develop commercialized production of agriculture, which are all regarded as effective measures for rural development and poverty reduction at the current stage. Project interventions under this component include: (i) the improvement of irrigation facilities, mainly the lining of existing tertiary and secondary irrigation earthen canals; (ii) construction of community facilities of safe drinking water supply; (iii) paving of existing village roads with concrete, both connecting to

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<sup>6</sup> See Working Paper 1 for more details

“administrative” villages and their constituent “natural” (smaller and scattered) villages. Training of beneficiaries for the operation and maintenance of the project-built civil works will also be supported by the project. Implementation responsibility of this component will rest with the Bureau of Water Resources and the Bureau of Transportation at county level.

49. Activity-wise approach is applied to these project interventions in design and implementation due to their great variations of unit cost with sites. They include: (a) justification, objectives and strategies; (b) criteria for the selection of eligible villages; (c) activities and costs; (d) implementation arrangements and modalities; (e) criteria for adjustments; (f) expected benefits; (g) exit strategy and sustainability; and (h) risks and their mitigation measures. Detailed design for each activity by site will be conducted by local engineers before implementation. Environmentally-friendly practices and techniques will be adopted during implementation to avoid/mitigate the negative impact of project activities on the environment. Operation and maintenance mechanisms for the works built by the project will be established to ensure sustainability.

50. **Irrigation facilities.** The project will support irrigation canal lining to improve farmland productivity. This activity will enhance the capability of beneficiaries in resisting frequent climate related calamities and creating conditions for diversification and commercialized production of agriculture in the project area. It will involve the lining of different sizes of existing lateral (tertiary) and branch (secondary) irrigation earthen canals. The priority for project support will be given to the lining of lateral canals connecting with the fields of farmer households. In order to enhance the resilience of beneficiaries to face risks due to climate change, irrigation development will be accompanied by beneficiary training, for the application of water-saving irrigation techniques and the sustainable operation and maintenance of the works. The project activities will, thus, ensure irrigated crops that still suffer from significant water stress due to poor water management on the current irrigation schemes will now be able to fulfil their water needs to a higher degree. Hence yields on the improved schemes are expected to increase by at least 10% to 15%.

51. Cost estimates are based on details provided by the respective county Bureau of Water Resources. Construction costs vary between counties considerably. Unit cost estimates are based on type estimates and rate analysis for each such type estimate. These are not location specific and may vary at the time of implementation. Canal lining will be jointly financed by the IFAD loan proceeds (40%) and counterpart funding of GOC (60%), while beneficiary training will be funded 100% by IFAD, and O&M 100% by the beneficiaries.

52. Implementation of these activities will remain with the Bureau of Water Resources at county level. Its responsibilities will include, inter alia, (i) the identification of eligible villages suitable for carrying out the activities; (ii) detail design of the works by site; (iii) organising the civil works; (iv) training of beneficiaries; (v) facilitating the formation of interest groups or water users' associations (groups) for the operation and maintenance of project works. Measures needed to avoid/mitigate potential negative environmental impact include, among other things, trainings on water saving awareness of beneficiaries and introduction of irrigation water saving technologies.

53. **Village roads.** Poor technical capacity and lack of market information have often been cited as main constraints to enhancing agricultural productivity. Farmers residing in villages without appropriate road connection invariably use foot-trails and even these links become difficult to use during the rainy season. The project will improve the access of the rural poor to markets, information and technical services through the pavement of existing earthen roads of bad conditions with concrete, which connect administrative villages or natural villages to the outside road network. These activities will be jointly financed by the IFAD loan proceeds (40%) and counterpart funding of GOC (60%).

54. The Bureau of Transportation at county level will assume the responsibility of implementation. Its responsibilities include: inter alia, (i) the identification of eligible villages suitable for carrying out the activities; (ii) detail design of the works by site; (iii) organising the construction of works; and (iv) facilitate the formation of interest groups for the operation and maintenance of project works. Measures needed to avoid/mitigate potential negative environmental impact include, among other things, assessment of environmental impact before implementation, the protection of trees and vegetation, and adoption of environmental-friendly practices during construction.

55. **Safe drinking water supply.** This intervention is to improve the access of the rural poor to the sources of safe drinking water through building collective drinking water supply systems in villages which currently have difficult access to safe drinking water. This is further strengthened with trainings to the water users' groups and beneficiaries in order to ensure sustainability.

56. A drinking water supply system has two major items: (a) headwork at the water source, including a tank with a large capacity for water storage, filter, clearing equipment, high elevation water tower, pumping station and so on; and (b) the system of piping, including a main delivery pipe and laterals, and distribution pipes to each household. The cost estimate varies greatly between sites. Construction of the systems will be jointly financed by the IFAD loan proceeds (40%) and counterpart funding of GOC (60%), while beneficiary training will be funded 100% by IFAD, and O&M 100% by the beneficiaries.

57. Implementation responsibility for these activities will rest with the Bureau of Water Resources at county level. Its responsibilities will include: inter alia, (i) the identification of eligible villages suitable for carrying out the activities; (ii) the detail design of the works by site; (iii) organising the construction of drinking water supply systems; (iv) facilitating the formation of interest groups; and (v) training the interest groups and beneficiaries for the sustainable operation and maintenance of the works. Measures needed to avoid/mitigate potential negative environmental impacts include, among other things, trainings on water saving awareness of beneficiaries, installation of a water consumption metering system, and adoption of environmental-friendly practices during construction.

### **Component B: Agricultural production and marketing support**

58. This component aims to increase rural household cash income through improving the access of poor women and men to technical services, developing niche and cash crops and landrace livestock, and enhancing the value chain of major commodities from production to marketing. It covers five modules, namely annual cash crops production, perennial cash crops, improvement of township agricultural stations, landrace livestock development, and support to farmer cooperatives, as well as two complementary packages including an institutional support and value chain enhancement. Details for the former four modules and the package of institutional support are described in Working Paper 2 and that for the last module and the package of value chain enhancement are in Working Paper 3.

59. **Annual/Perennial cash crops production (Modules 1&2).** The annual and perennial cash crops production modules follow the overall project strategy of addressing rural poverty issues through an integrated approach. Both modules will increase the cash income of farmers by developing niche and cash crops to diversify agricultural activities in the project area. These two modules are presented in tandem because of similarities in their approaches and activities though they have different costs. Each module will include three activities: (i) field demonstrations; (ii) scaling-up; and (iii) beneficiary training with updated technologies. Both modules are built on field demonstrations on 10 hectares and scaling-up of 100 hectares for the development of niche/cash crops. The scale of demonstration and scaling-up is determined by taking into account the dispersal characteristics of the poor and vulnerable farmer households in villages. Technical training for beneficiaries with new and improved technologies will be provided to match the demonstration and scaling-up activities. The modules' implementation will last for two years. Synergistic effects will be expected by linking these modules with the activities under the community infrastructure and marketing support components of the project during implementation.

60. The average unit cost of the annual crop module is estimated at CNY 1.04 million and that of the perennial crop module CNY 2.8 million. Totally 13 annual and 24 perennial crop modules are projected. Both modules' implementation will be jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%).

61. Both modules are tailored to the capacity of the rural poor women and men. During their implementation priority will be given to the poor and vulnerable households, as well as the female-headed households, although the better-off households in the communities will not be excluded. Farmers in the project villages will be encouraged to group themselves together for commercialized production of quality products, through for example processing and branding, in order to enter more remunerative markets.

62. Implementation of both modules will remain with the Bureau of Agriculture (BOA) at county level. Its responsibilities will include: (i) the identification of eligible villages; (ii) identification of target households for carrying out the modules; (iii) adjustment of the modules to fit local conditions; (iii) technical support and follow-up services to beneficiaries on module activities; (iv) facilitating the formation of beneficiary groups by trade and linking them with relevant farmer cooperatives, or facilitating the establishment and operation of new farmer cooperatives wherever no cooperative is reachable by the beneficiaries. Environmental-friendly farming practices, including reduction of chemicals and fertilizers and organic farming will be recommended to avoid/mitigate potential negative environmental impact.

63. **Landrace livestock development (Module 3).** This module is to support the rural poor women and men to extend their income sources through the demonstration and development of landrace animal production for which there is a strong market demand in the country. Project support will include the improvement of animal-sheds, breeding stock, feedstuff, and beneficiary training. The module is household-based and it will be implemented within one year. Similar to modules 1&2, this module is tailored to the capability of rural poor women and men. Its implementation will give priority to the poor and vulnerable households, as well as the female-headed households.

64. The average unit cost of the module is estimated at CNY 40,160 and totally 320 modules are projected. Module implementation will be jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%).

65. Implementation responsibility for the module will rest with the Bureau of Livestock (BOL) at county level. Its responsibilities will include: (i) the identification of eligible villages; (ii) identification of eligible households for carrying out the module; (iii) adjustment of the modules to fit local conditions; (iii) technical support and follow-up services to beneficiaries; (iv) facilitating the formation of beneficiary groups by trade and linking them with relevant farmers' cooperatives, or facilitating the establishment and operation of new farmers' cooperatives wherever no cooperative is reachable by the beneficiaries. Synergistic effects are foreseen by linking this module with the Support to Farmer Cooperative Module during implementation. Improved livestock breeds and minimizing rangeland grazing will be recommended to avoid/mitigate potential negative environmental impacts.

66. **Improvement of township agricultural stations (Module 4).** This module is designed to improve the access of rural women and men to improved technologies and techniques, plus timely information, through the improvement of the grassroots agricultural extension services network and by enhancing the capacity and effectiveness of service delivery. It will contribute to increasing farmers' income through increased adoption rates of new technologies and diversified agricultural activities. The module is built by taking one township of average size as a basic unit. For planning purposes, the project will support 18 project townships to improve their existing agricultural stations over the life of the project. The implementation period of the module will be one year. Module activities will include: (i) civil works for office, training room, consultation room and simple laboratory and display spaces; (ii) provision of technical and training equipment, including office equipment, practical and handy laboratory instruments and tools, training equipment, and a motorbike; and (iii) provision of office and training-room furniture. The average unit cost of the module is estimated at CNY 0.5 million and totally 18 modules are projected. Module implementation will be jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%).

67. Implementation of the module will focus on those project townships with a high proportion of poor and vulnerable farmer households, which are undergoing a reorganization process to regain autonomy of technical services but have no appropriate office and training spaces, technical equipment and essential tools for service delivery. Priority will be given to those project townships located in remote, mountainous and ethnic minority areas. The responsibility of module implementation will remain with the Bureau of Agriculture at county level under the coordination of PMO. Its responsibilities include, *inter alia*, the identification of eligible townships, adjustment of the module to fit local conditions, procurement of civil works and equipment, and technical support to the targeted townships on other module-related activities.

68. **Institutional support package.** Objectives of the institutional support activities are to improve the effectiveness of grassroots extension networks and increase the access of the rural poor to new crop varieties, updated improved technologies, and improved technical services. Given that the Bureaux of Agriculture at county level are playing vital roles in backing-up the extension agents at township and village levels on the technical delivery to farmers in the project area, the project will provide support to improving their service conditions and capacity of 5 project counties through the building of technical training centres and the provision of essential equipment and furniture in counties which are yet to have appropriate conditions to undertake their duties. Project support under this package will also include updated trainings for technical staff at county, township and village levels and crop experiments on new technologies and varieties. The area for the civil works of training centres and the types of equipment and furniture will be determined by the involved counties to meet their minimum requirements for achieving the objectives, subjected to the approval of PPMO. Implementation of these activities will be undertaken by the Bureau of Agriculture at county level, under the coordination of CPMO.

69. The average cost of this package for each county is estimated at about CNY 2.86 million. The construction of training centres will be jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%), while equipment and furniture will be funded by the IFAD loan proceeds (80%) and counterpart funding of GOC (10%), and crop trials and staff training will be funded 100% financed by the IFAD loan proceeds.

70. **Support to farmer cooperatives (Module 5).** This module is to assist the rural poor and vulnerable households, especially the women in these households, entering the value chain of major commodities with remunerative markets, which will help increase their production and marketing efficiency and thereby gain value added. The targeted women and men will improve their social and economic status by joining the local farmers' cooperatives where these exist. Their improved competence will help increase their share of the total generated value, gaining capacity and equitable opportunities in self-organization for sustainable community development. Project support will be provided to eligible cooperatives under the activities foreseen to strengthen the inclusion of poor households and women so as to increase their access to new techniques and know-how, improved marketing linkages and trade promotion, and by provision of office equipment. The expected outcomes should be highlighted by members' increased premium share in the value chain, and the improvement of the cooperatives' sustainable service capacities in technical support and provision of market information to their members.

71. The average unit cost of the module is estimated at CNY 215,000 and totally 44 modules are projected. Implementation of all activities under this module will be jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%).

72. Candidate farmers' cooperatives should have the following characteristics: (i) be based in project townships or villages, with multi-village membership; (ii) accept necessary cooperative principles and values; (iii) be legally registered with the local bureaux of Industry and Commerce or Civil Affairs, or be willing to be assisted to do so; (iv) have established some market linkages with processors, wholesalers or retailers; (v) Strong leadership in applying quality standards of farm processing and cooperative marketing; (vi) commitment to systematically recruit the household members of the poor and vulnerable as members and applying tailor-made technical coaching for their integration; and (vii) willing to receive the support of local technical service providers.

73. Project townships and villages without existing farmers' cooperatives of such profile but with market linkage potential can be considered for establishment of new cooperatives as recipients of the module support. Villages active in implementing project production modules will be given priority for forming new cooperatives as recipients of this module. In addition to the above-mentioned conditions of (i) to (vii), there should be strong signs of mutual assistance among the target households that participate in some quality farm processing for farm and livestock produce.

74. The module will be implemented over a period of two years. The Bureau of Agriculture at county level will assume the overall responsibility for the module implementation. Its responsibilities will include, *inter alia*, the identification of eligible farmer cooperatives; adjustment of the module to fit actual situations; overseeing the operation of supported cooperatives in accordance with the module's implementation requirements; and support to the target cooperatives on other module-related activities. Implementation of the module will be closely link with the cash crops and landrace livestock modules for synergistic effects and leverage from the project-supported productive assets.

75. **Value chain enhancement package.** The objective is to help supported cooperatives, rural micro and small enterprises and individual smallholders move up the value chain and therefore access opportunities for better profit margins. Farmers in the project area currently sell their products mostly in the primary and unprocessed forms for low profit margins and the cooperatives will help them achieve some economies of scale, opening up opportunities for higher margins; the negotiation dynamics along the value chain may change in favour of the cooperatives and their members only when they are able to decide what kinds of processed products they will offer to the markets, and the transformation capacity is owned or controlled by themselves. Currently, cooperatives and individual smallholders lose a substantial part of their products that are mostly perishable, due to the volatile storage facilities and their dependence on storage and trading locations controlled by external brokers and buyers. Improvements in capacities of processing, storage, packing and packaging, transport and accessible trading locations will help gain additional profit margins for the cooperatives and smallholders supported by the project, there-by providing a more attractive profile of strengthened economic capacities of the project counties in the context of investment consideration and local competitiveness.

76. The project support will include the provision of value-adding facilities, which serve as improving production quality, processing or semi-processing, storage or packaging that help increase the profit margin and move up the value chain, and the building of local markets in selected township centres to help incorporate the farm-gate market into the trade arena, especially to connect to the county-level terminal markets. The project will not support the construction of basic-level or aggregate markets, but only cooperative spots and wholesale markets in order to enliven the trade with external buyers. The total costs for this package are estimated at about CNY 38.16 million, including CNY 23.63 million for value-adding facilities and CNY 14.53 million for construction of markets. Both activities will be jointly financed by the IFAD loan proceeds (75%) and GOC counterpart funds (25%).

77. In addition to the characteristics mentioned for the identification of candidate cooperatives under the module of support to farmer cooperatives, selection of recipient cooperatives and micro/small enterprises for the support of value-adding facilities will be based on those typically engaged in marketing products of primary and unprocessed forms. It is suggested that as a condition of accessing project support – for both grant and loan financing – cooperatives are required to prepare a simple business plan (including a marketing plan) that justifies the commercial potential of the investment and presents analysis showing that the return on the investment will be at least 20% for the product/business line(s) that directly benefit from the investment (i.e. not for the cooperative as a whole, as they may have additional non-related activities that remain unchanged). Training and support for this may be required from the county PMOs. A business plan requirement will act as a further filter to prevent cooperatives from taking grants/loans for activities with little prospect for long-term sustainability (see below) and thus will act to maximise the chances of post-project viability for these investments and the business activities that they make possible.

78. The county BOA will ensure the overall responsibility of the package implementation. It will operate along the following: (i) overseeing the recipients of value-adding facility support and assisting them in the process of procurement of goods and services, organization of management and maintenance (M&M) and equitable use by target groups such as the poor and the vulnerable, and women members; (ii) identifying, proposing and supervising the management bodies for the markets built by the project; and (iii) reporting on the package support to the CPMO.

### **Component C: Rural environment improvement**

79. This component aims at improving the rural community environment of project areas by developing alternative clean energy and piloting village sanitation improvement approaches, incorporating government activities on building the new socialist countryside and “*Xiaokang*” society. It covers two modules, namely biogas system and village sanitation improvement. Detailed descriptions of the modules and their activities are presented in Working Paper 4.

80. **Biogas system (Module 6).** This module will improve the rural environment and sanitation by reducing the dependence of rural households on firewood for cooking and introducing environmentally-friendly practices of animal and human waste management, while promoting the development of rural renewable energy and reducing the burden of rural women. Module activities will include the construction of a household-based biogas digester, renovation of the household’s kitchen, toilet and animal-shed, and beneficiary training on the operation and maintenance of the biogas system. Training on the use of biogas digester slurries for ecological farming will be incorporated into the training activities of beneficiaries. The module cost is estimated at CNY 6,120 including beneficiaries’ contribution in kind, and 569 modules are projected. Module implementation will be jointly financed by the IFAD loan proceeds (70%), counterpart funding of GOC (10%) and beneficiary contribution (20%). Cost of operations and maintenance of the biogas system will be fully born by the respective households.

81. The module will be implemented within a period of one year. Module implementation will be closely link with Module 7 below, village sanitation improvement, for synergistic effect and piloting purposes. The county Rural Energy Office (REO) will assume the responsibility of module implementation. It will procure services of competent technicians to carry out specific works of biogas digester construction and organise the procurement of required materials, following the procurement procedures of IFAD and/or GOC for distribution among the eligible farmer households to undertake the design activities of the module. Responsibilities of the REO will include, among other things, (i) the identification of eligible villages and households; (ii) adjustment of the module to fit local conditions; (iii) implementation of module activities; (iv) training of beneficiaries; (v) technical support and follow-up services; (vi) support to the beneficiaries on other module-related activities; and (vii) organisation of quality checks for completion acceptance.

82. **Village sanitation improvement (Module 7).** This module aims at piloting an innovative approach to improve the sanitary conditions of rural habitats. It will contribute to enhancing the awareness of rural inhabitants about their living environment and consequently their health status, while adding value to the governmental programs and objectives of building a “new socialist countryside” and “*Xiaokang*” society. Its main activities include sewer construction, installation of wastewater septic tanks, separate garbage collection, construction of drainage ditches, upgrading the village tracks, and beneficiary training. The module cost is estimated at CNY 0.73 million and totally 29 modules are projected. Module implementation is jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%).

83. The module is “natural” village-based and it will be implemented over a period of two years. Module implementation will be closely link with Module 6, biogas system, for synergistic effect and piloting purposes. The Bureau of Agriculture (BOA) at county level will assume the responsibility of module implementation. BOA will procure the works of the construction of sewers, water wastewater septic tanks, garbage collection stations, drainage ditches and tracks of natural villages, following the procurement procedures of IFAD and/or GOC. Where necessary, the BOA will call on the technical inputs of other relevant government bureaux for the implementation of the module activities. The responsibilities of BOA will include, among other things, (i) the identification of eligible villages; (ii) adjustment of the module to fit local conditions; (iii) implementation of module activities; (iv) organisation of quality check for completion acceptance; (v) training of beneficiaries; (vi) technical support and follow-up services to beneficiaries; and (vii) support to the beneficiaries on other module-related activities.

#### **Component D: Project management**

84. Project management will include the establishment and operation of project management offices (PMOs) at provincial, county and township levels. Project implementation will be substantially decentralised to the county PMOs, with the provincial PMO performing overarching functions of planning, coordinating, monitoring and reporting. For their appropriate functioning, project support to the provincial and county PMOs will include vehicles, office and training equipment, capacity building, M&E, knowledge management, and innovation development. Project support will also be provided to township PMOs, but this will be relatively small since they will be composed of staff on part-time basis and use existing facilities of township governments. Recurrent costs for all PMOs will be ensured by Government counterpart funding, which will cover staff salaries, travel costs, administrative costs, and operation and maintenance of vehicles. Village implementing groups (VIGs) will also be financially supported for carrying out their responsibilities under the project which will include the coordination of project activities in the village.

#### **D. Lessons learned and adherence to IFAD policies**

85. Since 1981, IFAD has financed 23 projects worth some USD 591 million in loans for rural poverty reduction in China. Project interventions involved agriculture, livestock, forestry, fishery, health, education, financial services, market access, environmental conservation and gender mainstreaming. Project evaluations and project completion reports suggested a good performance in terms of the projects’ achieving their rural development and poverty reduction objectives. The recent (2010) Country Program Review generated lessons for a policy dialogue feeding into the new 2011-2015 COSOP for China.

86. IFAD has built up substantial experiences in China through project and thematic evaluations and impact assessments since 1981. The key lessons learnt from previous and on-going projects include:

- The use of project leading groups (PLGs), project management offices (PMOs) and village implementing groups (VIGs) ensures effective inter-agency coordination and timely implementation, as well as promote beneficiary participation in project activities;
- Targeting approaches of projects are effective but targeting during implementation needs to be improved in some cases. Project areas were selected on the basis of poverty incidence and vulnerability analyses. Village implementing groups (VIGs) make good contributions to the targeting at household level;
- IFAD-funded projects were designed and implemented along a gender-sensitive, integrated rural development approach. Project impact on women’s social and economic empowerment has been repeatedly confirmed in impact assessments;



- Close monitoring of rural infrastructure is required during implementation to ensure designs are correctly executed, which is why follow-up during implementation is more important than providing international expertise during formulation;
- Experience with agricultural infrastructure to improve water and soil management has been instrumental in ensuring better water harvesting, flood control, irrigation support, and land development;
- To create more awareness of infrastructure viability and environmental impact, local user groups and VIGs should be consulted to identify major issues and provide training in the maintenance and repair of infrastructures;
- IFAD projects have promoted decentralised community approaches by applying participatory planning. This approach works well and it is scaled-up by the Government in the formulation of the national poverty reduction strategy;
- Under the environment of a strong economic growth, it has been found necessary to design projects in the way that enough flexibility should remain with local project management offices during implementation, which would avoid rigid interpretation of project design documents. An advance in project operations showing good potential is the introduction of a modular approach to project management;
- Close collaboration among all stakeholders in project planning and implementation is crucial for the success of project implementation, so is the adequate and appropriate staffing of local project management offices, particularly at county level;

87. The design of GIADP is in line with IFAD's Policies. The project aims at increasing the income of the poor and women from agricultural production through innovative poverty reduction approaches and improved access to community assets, remunerative markets, and know-how. Specifically, (i) specific gender mainstreaming strategy has been designed in compliance with IFAD's gender sensitive policy; (ii) poverty-focus, particularly the criteria for the selection of beneficiary villages and households, are designed in line with IFAD's targeting policy; (iii) participatory approaches for the project planning is designed in line with IFAD's governance policy; (iv) strategy for scaling-up of positive project results is designed in line with IFAD's scaling-up policy; (v) climate-related risks are analysed and measures to mitigate potential negative impacts of climate change are designed, in line with IFAD's climate change policy; and (vi) potential negative environmental impacts are analysed and measures are designed to mitigate such impacts, in line with IFAD's environmental policy.

88. GIADP is also aligned with the Government's poverty reduction strategies, notably the 12<sup>th</sup> Five Year (2011-2015) Plan for National Economic and Social Development, and the Government's rural development policies (especially the next ten-year (2011-2020) rural poverty reduction and development programme). The project aims at reducing poverty and enhancing rural communities, by (i) improving community infrastructure, including small-scale irrigation, drinking water supply facilities, and village roads; (ii) enhancing the capacity of the rural poor in household management with strengthened information and technical services; (iii) promoting commercialization of agriculture with the production of high-valued and niche products and secured market linkages; and (iv) improving the ecological and sanitary environment of rural communities. These activities will contribute to narrowing the regional disparities of rural development, while adding-value to the Government objectives of building the "Xiaokang" society.

## **IV. PROJECT IMPLEMENTATION**

### **A. Approach**

89. The project will be implemented over five years. Implementation approach of the project will follow the successful practices for on-going and previous IFAD-funded projects in China, particularly the West Guangxi Poverty Alleviation Project (WGPAP) which was completed in 2008 and regarded as highly success. Project management offices (PMOs) will be established at Province (PPMO), county (CPMO) and township (TPMO) levels to be responsible for planning, coordinating, monitoring, and reporting of the project. Implementation of project activities will remain with designated implementing agencies (IAs) at county level for result-added incorporation of the project activities with governmental development activities in the project area. Field visits and discussions confirm that the implementing agencies have good capacity for undertaking project activities. Annual Work Plans and Budgets (AWPBs), which are developed through participatory approaches, will be taken as the basis of the project implementation. At village level, a Village Implementation Group will be established to

ensure appropriate targeting, participatory planning, implementation, and monitoring as well as sustainable maintenance of village-based project physical outputs.

90. Implementation of the project will emphasize synergistic effects between activities for enhancing project impact and sustainable development, for example by supporting cooperatives in areas that benefit from project-supported agricultural production activities to strengthen the linkage between production and markets, and help move the beneficiaries up the value chain.

91. **Targeting strategy** of the project will incorporate the following key elements:

- Targeting of the project starts at the design stage. Eligible counties and townships for the project are identified through the analysis of available data and discussions with the representatives of government, following the agreed criteria. Targeting at village and household levels will continue through participatory approaches during project implementation (details are included in Table 4 and ANNEX 2);
- Project activities are designed with a major focus on the needs of, and benefits for, rural poor and vulnerable households. Community-level activities will reflect the needs of the poor and vulnerable households through participatory planning. Priority of household-level activities will be given to the poor and vulnerable groups. The identification of these households will be based on perceived wealth ranking conducted by the village implementing groups (VIGs), which will include a good proportion of representatives from households of different wealth categories;
- Project implementation will focus on the poor and vulnerable households, but stand inclusive in regard with community wealth building, in poor villages identified by the government through the prevailing governmental criteria and procedure. In other words, inclusive targeting approaches will be applied at community level, whilst focus targeting will apply to ensure benefits accrue to, and the participation of, the poor and vulnerable households.

92. **Gender mainstreaming** will be achieved by focusing on women's participation and benefits in the project design, implementation and management, as follows:

- The project design is tailored to the capability of women in view of their increased role in household businesses as a result of predominantly male labour migration. Women's participation in project activities will be ensured by developing feasible indicators for monitoring and constantly reassessing project implementation to adjust approaches to ensure full participation;
- Women will be involved in the project's planning and management by recruiting appropriate proportions of women in the management units, from VIGs to the Provincial Leading Group (PLG) and the PPMO. Project management offices (PMO) at all levels will appoint a gender focal point to ensure women's participation in decision-making, whilst cooperating closely with local branches of the All China Women's Federations (ACWFs) in project implementation; and
- Gender awareness training will be provided to PMOs' staff at Province, county and township levels; and gender perspectives will be integrated in the trainings for VIG members and women representatives of natural villages during project implementation.

Table 4: Principles for the Selection of Project Beneficiaries

| Principle for the selection of eligible villages  | Principle for the selection of eligible households   |
|---|--|
| <ul style="list-style-type: none"> <li>- Villages that have a high proportion of poor and vulnerable and/or ethnic minority populations;</li> <li>- Villages that have suitable conditions for project activities;</li> <li>- Potential beneficiaries, particularly women, have strong interest in participating in the designed project interventions and activities;</li> <li>- Regarding community infrastructure, villages where potential beneficiaries are committed to O&amp;M of completed schemes;</li> <li>- villages that have higher potentials for high value agricultural and livestock products with linking to remunerative markets.</li> </ul> | <ul style="list-style-type: none"> <li>- In principle, inclusive approaches at household level will be applied within a village;</li> <li>- Priority given to the poor and vulnerable and ethnic minority households, particularly woman-headed ones.</li> </ul> |

## B. Organizational framework

93. **Ministry of Finance.** As the authorised representative of the Borrower of IFAD loans, the Ministry of Finance (MOF) will receive and pass on the IFAD loan proceeds to the Department of Finance (DOF) of GZAR and subsequently to the Bureaux of Finance (BOFs) of the project counties for financing the project. MOF will carry out its oversight responsibilities through the DOF and BOFs.

94. **Project leading groups.** Project Leading Groups (PLG) will be established at province and county levels to provide overall guidance and coordination of project implementation. Each PLG will be led by a senior official of government of the same level and composed of representatives from local DOF/BOF, Development and Reform Commission (DRC), and key line agencies including the Department/Bureau of Agriculture (DOA/BOA), Poverty Alleviation Office (PAO), Department/Bureau of Water Resources (DOWR/BOWR), Department/Bureau of Transportation (DOT/BOT), and All China Women's Federation (ACWF). The key responsibilities of the PLG at each level include: (i) overall supervision of the PMO's operations; (ii) coordination of counterpart funds for carrying out the project; (iii) review and approval of project Annual Work Plans and Budgets (AWPBs) and reports; and (iv) coordination of implementing agencies in project implementation and reporting.

95. **Department/Bureaux of Finance.** The primary responsibilities of DOF/BOFs are as following: (i) assume the opening and management of the Project Accounts; (ii) administer the project resources including the IFAD loan and the counterpart funds; (iii) review and approve the financing needs for project implementation; (iv) oversee the use of project resources; (v) ensure the effective flow of funds for project implementation; (vi) provide appropriate training to the financial officers of the PMOs in terms of financial management; and (vii) prepare Withdrawal Applications (WAs) and reimburse eligible project expenditures on time.

96. **Project Management Offices (PMOs).** A PMO will be established at Province (PPMO), county (CPMO) and township levels. These are dedicated structures located within the DOA/BOAs. The provincial PMO (PPMO) and each county PMOs (CPMOs) will be staffed with qualified and full-time staff of adequate number, at a minimum composed of a director, a deputy director, an accountant, a cashier, a planning officer, an M&E officer, and a knowledge management and gender coordinator.

97. The PPMO will be responsible for coordinating project implementation across the 8 counties. Its responsibilities include, among others: (i) consolidation of AWPBs; (ii) establishment of a project M&E system; (iii) monitoring and supervision of project implementation; (iv) provision of appropriate training to CPMOs and implementing agencies (IAs) in terms of project implementation and management; (v) consolidation of Statements of Expenditures (SOEs) and the preparation of withdrawal applications (WAs); (vi) procurement under the project; (vii) project reporting; (viii) organising project baseline and RIMS surveys; and (ix) promoting project knowledge management.

98. CPMOs will be responsible for coordinating project implementation at county level. Their responsibilities include, among others: (i) development of AWPBs through participatory approaches; (ii) monitoring and supervision of project implementation; (iii) provision of appropriate training to IAs, township PMOs (TPMOs) and village implementing groups (VIGs) in terms of project implementation; (iv) preparation of SOEs and claim documents; (v) transfer of project funds to implementing agencies (IAs) on time; (vi) organising of project procurement; (vii) project reporting; (viii) undertaking project RIMS surveys; and (ix) promoting project knowledge sharing.

99. TPMOs will be established within the local governments at township level, utilising existing facilities and staff on a part-time basis. Designated staff will provide support to the CPMO and IAs for implementation of project activities at village level on an as-required basis. Its key responsibilities are as follows: (i) oversee the works of VIGs; (ii) identify eligible villages that could participate in project activities; (iii) facilitate village-level participatory planning activities to determine what activities will be implemented in the villages; (iv) review village implementation work plans, (v) coordinate the township technical stations/centres in project implementation; (vi) consolidate the M&E data collected by VIGs and report to CPMOs; and (vii) facilitate the liaison with target villages.

100. **Village Implementing Groups (VIGs).** VIGs will be set up at each of the targeted administrative village. The VIG will be headed by the director of the village committee and composed of 10-14 people, including all the village committee members and 5-7 farmer representatives from different household categories of well-being. Farmer representatives will be elected by local farmers and they will be no less than 50% of total members of the VIG. Of the farmer representatives, women will be no less than 50% and at least two thirds will be from the poor and vulnerable households.

101. The VIGs' major responsibilities include: (i) an annual participatory perceived well-being ranking of households within the village; (ii) identifying project modules and activities prioritized by eligible groups through participatory approaches, and reporting to the PMOs for the development of AWPBs; (iii) organizing the poor and vulnerable households to participate in project activities; (iv) assisting PMOs monitor project implementation and collecting M&E data as required; and (v) organising the operation and maintenance of community infrastructure built by the project.

### **C. Planning, M&E, learning and knowledge management**

#### **Project planning**

102. Project planning for GIADP will follow the current practices for IFAD-funded projects in China, which are on an annual basis through the development of Annual Work Plan and Budgets (AWPBs). AWPB is a planning and management tool for the project implementation. Its development will be based on the demands of target groups through participatory approaches and fully engage the IAs. An AWPB will include, among other things, the financial and physical progresses that have been made, a detailed description of planned project activities over the period, a procurement plan for at least 18 months, and a plan for implementation of activities by semester. AWPBs will also reflect the recommendations made by the last Project Review mission as well as corresponding actions taken and their effect. The PPMO will consolidate the AWPBs developed by each CPMO and submit it to IFAD for "no objection" review for each project fiscal year before its implementation.

103. The first AWPB should be developed and submitted to IFAD before start-up of the project. From the second year on, the PPMO will submit consolidated AWPBs to IFAD for its comments before the 31<sup>st</sup> of October each year. If no comments on the AWPBs are received from IFAD within 30 days after it receives them, the AWPBs will be deemed approved by IFAD. Importantly, PMOs at all levels should be aware of available resources in the formulation of AWPBs and submit them to respective PLGs for review and clearance. Project implementation should be in compliance with the AWPBs substantially in the form cleared by the PLGs and IFAD. If required, the CPMOs, through the PPMO, may propose adjustments of AWPBs during implementation, which will become effective upon approval by the PPMO and after obtaining no objection from IFAD.

104. Although field visits have been conducted in seven out of the eight project counties and detail discussions were held with the representatives of all 8 project counties during the project design, the unit costs for both the modules and packages presented in this report were estimated based on the overall average situation of the project area, with the understanding that: (i) the specific location for each of the project activities has still to be finalized at village level; (ii) the missions could not visit all sites for the project to conduct detail design by activities in a short period; (iii) adequate flexibilities of implementation should be given to the local PMOs and implementing agencies following the lessons learnt from other IFAD-funded projects in the country; (iv) the costs for project activities are bound to be adjusted during implementation due to price fluctuations and the changing economic environment. These imply that the estimated average unit costs for the project modules/activities designed are indicative rather than true costs for implementation. An inherent feature of the modular approach is that it facilitates programming adjustments to reflect the specific socio-economic and environmental situations of a target area before implementation. However, adjustment of any module should maintain its essential elements. The foreseen adjustments will be applicable mainly in budgetary terms. No modular adjustment should take place in the areas of module fundamentals such as objectives, strategy, targeting and implementation procedures, unless otherwise agreed by IFAD. Detailed criteria and rules for possible adjustments are presented in ANNEX 11.

#### **Monitoring and evaluation (M&E)**

105. The GIADP will establish an effective and efficient M&E system from provincial PMO through county and township PMOs down to the VIGs. The system will operate in line with IFAD's M&E guidelines. The M&E officers of the PPMO and CPMOs will be responsible for monitoring and evaluating project implementation and sharing the lessons learnt semi-annually and annually with all stakeholders in order to improve project implementation and achieve project objectives. In this M&E system's functioning effectively, M&E start-up workshops for the project will be essential. In this regard, experts/consultants will provide start-up training to the M&E officers of PPMO and CPMOs. The later will then train relevant officers and staff of IAs, township PMOs and VIGs. During project implementation, M&E training will be held on as-required basis, but at least once a year.

106. The M&E officers of CPMOs will arrange the collection of M&E data in accordance with agreed indicators and report to the PPMO after consolidation at county level. VIG members will be responsible for collecting the household-level M&E data to avoid repeat counting, particularly in terms of participants by sex and by modules, beneficiary households by module/activities, and other indicators as required. M&E data concerning institutions and staff training will be collected by the IAs. The PPMO will consolidate M&E data reported by CPMOs and report semi-annually and annually to IFAD.

107. M&E results will indicate if the implementation of modules/activities generates outputs and outcomes towards achieving the project objectives. Therefore, they will be used as guidance in developing the coming AWPB. Adjustment of modules/packages or implementation modalities may be necessary when developing AWPBs if the M&E results indicate that implementation of the activities did not contribute to achieving the project objectives as foreseen; or otherwise, the project log frame will need to be revised. There is a close linkage between the log frame, M&E and AWPBs.

### **Knowledge management**

108. The project knowledge management strategy is drawn from the experiences of previous and on-going IFAD projects and introduces further developments. Its key elements will include:

- An effective M&E framework will be established to monitor implementation progress against AWPBs, and achievements against the project objectives as indicated in the log frame;
- Workshops and meetings, including PMOs and IAs, will be held regularly and on as-required basis, to share knowledge, experiences, innovative initiatives and success during project implementation. So will be the production of project newsletters and cross review of project implementation between counties;
- Close linkage between project M&E, AWPBs and log frame for improved project planning. M&E will monitor and evaluate the results of project implementation against relevant indicators, which will be used as a guidance for the development of the following AWPB;
- RIMS/baseline surveys will be carried out regularly to assess the project impact and draw experiences for subsequent implementation and for other IFAD projects;
- VIGs will participate in the project planning and M&E, which will improve their internal planning and management capacity, as well as the project's sustainability;
- Knowledge sharing among projects will be achieved through cross-project visits, participation in country-wide or region-wide knowledge sharing platforms/activities, and overseas study tours;
- Documentation of project results and experiences for sharing with other on-going and subsequent IFAD projects.

109. The CPMOs will work with cooperatives to ensure that knowledge – technical, business and market related – is shared among members. This especially applies to new members, who will be coached one-on-one by existing cooperative members. The knowledge management officer will also be a conduit for information on innovations arising in other project locations reaching the cooperative members, and for ensuring that their own successes are shared widely among other project stakeholders (i.e. a 2-way information flow).

110. The PPMO and CPMOs will be responsible for capturing and documenting experiences, successful cases and innovations resulting from the project implementation, and organising semi-annual and/or annual workshops during the project implementation to disseminate the experiences and innovations for scaling-up. Plans for scaling-up of successful cases and innovations within the project area will be incorporated into the project AWPBs during the project implementation. Local governments will be encouraged to incorporate scaling up of those successful ventures into their own local development plans, either through support to scale up the innovations locally or through replication/expansion of the innovations outside, by governments or other donors.

111. **Regional knowledge networking.** The project management will actively participate in regional knowledge networking activities in areas related to the project, including: (i) improvement of strategies and approaches on poverty reduction; (ii) enhancement of technology and market access; (iii) partnership development with relevant institutions and agencies; (iv) regular and frequent contributions to IFAD-Asia China window; (v) actively participate in workshops of knowledge sharing related to poverty reduction and agricultural and rural development in the region, domestically and overseas; and (vi) actively support country and region wide research and development studies and pilot activities where appropriate and useful for the country programme.

## D. Financial management, procurement and governance

### Financial management

112. The current financial reporting and accounting practices of the Government financial system are acceptable to IFAD. Each of the PMOs will be well staffed with qualified financial officers who will be trained to handle the accounting requirements of the project.

113. The IFAD loan will be extended to the Government on “modified” ordinary terms and conditions, i.e. at a variable interest rate established semi-annually by IFAD, with a maturity period of eighteen years including a grace period of five years<sup>7</sup>. The proceeds of the IFAD loan will be passed on to the GZAR Provincial Government, on the same terms and conditions without additional charges, from the Ministry of Finance (MOF) at national level. GZAR will in turn pass on the resources, to each of the project counties on terms and conditions dictated by the level of poverty of each county; relatively well-off counties will be expected to pay back the resources, while the poorer ones will not. The DOF and BOFs will represent the respective levels of government to receive and pass on the loan funds. At county level, the funds will be transferred from BOFs to PMOs and the later will forward the funds to relevant IAs for project implementation in accordance with expenditures incurred under approved AWPBs. The IFAD loan proceeds will be repaid by the Government and under no circumstances will the IAs and beneficiaries be required to repay the loan funds except for the financing of the value-chain facilities under the package of value chain enhancement.

114. The provision and channelling of Government counterpart funds will follow the prevailing domestic financial management procedure. Assurances will be given as to the commitment of the provincial government for providing these counterpart funds in a timely manner to facilitate smooth project implementation and coherence.

115. A Designated Account denominated in United States Dollar (USD) will be opened and maintained by the DOF of GZAR in a bank acceptable to IFAD, through which all IFAD funding will be channelled. An initial deposit of USD 8.0 million, approximately equal to projected eligible expenditures over the first six months of implementation, will be deposited into this account once the loan becomes effective, on the basis of a Withdrawal Application (WA) submitted by the DOF. Subsequent replenishments of the Designated Account will be effected through the submission of WAs, in accordance with IFAD procedures to be set out in the Financing Agreement for the project. The initial deposit will constitute the ‘authorized amount’ of the Designated Account. All withdrawals must be in line with projected expenditures as detailed in approved AWPBs. The CPMOs and PPMO will be responsible for the preparation and consolidation of WAs respectively, which will be approved by an appropriate authority at each level prior to being submitted through the DOF to IFAD.

116. Project Accounts denominated in Chinese Yuan (CNY) will be opened and maintained by the PPMO and county BOFs and CPMOs in a suitable bank. The majority of project loan funds will flow from the Designated Account held by DOF to the Project Accounts held by BOFs and then to the Project accounts held by CPMOs. A small part of loan funds will flow from the Designated Account to the Project Account held by the PPMO in accordance with the projected eligible project expenditures.

117. **Retroactive Financing:** Provision will be made for retroactive financing of up to US\$ 600,000 to finance the start-up preparation activities of the Project in the period between the signing of the MOU of the Design Completion Mission and the entry into force of the IFAD loan. Eligible expenditures for retroactive financing are those incurred under the project disbursement accounts<sup>8</sup> C, D, and E shown on table 5 below. Major activities funded thus include: (i) purchase of essential items of equipment for PMOs, excluding vehicles; (ii) establishment of an M&E system; (iii) start-up training and workshops of implementation and management; (iv) exposure visits for knowledge and experiences sharing; (v) field surveys and studies; (vi) seasonally-dependent crop demonstration activities.

### Procurement

118. Procurement of goods, works and consulting services financed under the Project shall be subject to the provisions of the Borrower’s national procedures to the extent that they are consistent

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<sup>7</sup> The Government requested aligning the usual grace period of the loans on ordinary terms and conditions, namely 3 years, with the implementation period of 5 years for the GIADP to allow the loan repayments to IFAD to start after the completion date. The request was endorsed by IFAD Management and will be recommended to the Executive Board for approval.

<sup>8</sup> Disbursement Account C: Vehicles, equipment and materials; Disbursement Account D: Training, workshop, technical assistance, studies; and Disbursement Account E: modules.

with the provisions of the “IFAD Procurement Guidelines” as such guidelines may be amended from time to time. The procurement method to be applied in each particular case will depend on the nature of the expenditure and the estimated value of the contract. To the extent possible, the goods, works and consulting services financed by the IFAD loan shall be bulked into sizeable bid packages in such a manner so as to permit optimal use of competitive bidding. Under all circumstances, procurement of the project will have to be well documented for post review by IFAD and for audit purposes.

119. The main items of goods to be procured for GIADP are vehicles, office and technical equipment and furniture. Vehicles are suggested to be procured following the local competitive bidding (LCB) method. Other goods and materials will be procured following the local shopping (LS) as appropriate. Civil works will involve the improvement of rural infrastructure, including irrigation and drinking water supply facilities and village roads, and the construction of counties’ training centres. They will be procured by using LCB or LS, depending on the nature of expenditure and the estimated value of the related contract. Technical services, training, workshops and studies for the project will be procured by using the LS method. The facilities for value chain enhancement will be procured through LCB or LS. Implementation of all modules will be entrusted to the respective Technical Bureaux at county level.

|  | <b>GIADP Applicable Procurement Methods (USD'000)</b> |                       |                      |   |               |               |
|--|---|-----------------------|----------------------|---|---------------|---------------|
|  | <b>Local Competitive Bidding</b>                      | <b>Local Shopping</b> | <b>Force Account</b> | <b>Community Participation in Procurement</b> | <b>N.B.F.</b> | <b>Total</b>  |
| A. Civil works: Community Infrastructure | 36 533  | 15 657                | -                    | -   | -             | 52 190        |
|  | (14 613)  | (6 263)               |                      |   |               | (20 876)      |
| B. Civil works: Buildings                | 2 225   | -                     | -                    | -   | -             | 2 225         |
|  | (1 558)   |                       |                      |   |               | (1 558)       |
| C. Equipment & Materials                 | 2 456   | 266                   | -                    | -   | -             | 2 722         |
|  | (1 850)   | (217)                 |                      |   |               | (2 067)       |
| D. Vehicles                              | 396   | -                     | -                    | -   | -             | 396           |
|  | (313)   |                       |                      |   |               | (313)         |
| E. Training, Workshops, TA & studies     | -   | 3 182                 | -                    | -   | -             | 3 182         |
|  |   | (3 182)               |                      |   |               | (3 182)       |
| F. Modules                               | -   | -                     | 23 224               | -   | -             | 23 224        |
|  |   |                       | (16 257)             |   |               | (16 257)      |
| G. Market Access                         | 3 664   | -                     | -                    | -   | -             | 3 664         |
|  | (2 748)   |                       |                      |   |               | (2 748)       |
| H. PMO management                        | -   | -                     | -                    | -   | 5 709         | 5 709         |
| I. Civil Works Operation & Maintenance   | -   | 226                   | -                    | 3 324   | -             | 3 550         |
| <b>Total</b>                             | <b>45 273</b>   | <b>19 332</b>         | <b>23 224</b>        | <b>3 324</b>                                  | <b>5 709</b>  | <b>96 862</b> |
|  | (21 081)  | (9 662)               | (16 257)             | -   | -             | (47 000)      |

Note: Figures in parenthesis are the respective amounts financed by IFAD  
NB: The Provincial thresholds for local shopping are up to CNY2,000,000 for rural roads, irrigation and drainage structures, water supply works. Above the thresholds procurement is on the basis of local competitive bidding (LCB). Purchase of equipment and vehicles, plus construction of buildings can be under LCB or LS.

120. **SOE thresholds:** The followings SOE thresholds are recommended for the project; the IFAD Financing Agreement will provide details of such requirements:

- (a) Expenditures pertaining to Category 1 (civil works: irrigation, village roads and water supply) up to a threshold of USD 300,000;
- (b) Expenditures pertaining to Category 2 (civil works: buildings) up to a threshold of USD 300,000;
- (c) Expenditures pertaining to vehicles, equipment and materials up to a threshold of USD 100,000; and
- (d) Expenditures pertaining to consulting services up to a threshold of USD 20,000.

121. **Prior review thresholds:** Details on procurement review by IFAD, including prior and post reviews; modifications etc. are explained in Appendix I of the IFAD Procurement Guideline Manual. Suggested prior review thresholds are as follows:

- (a) award of any contract for construction of village roads, irrigation improvement, water supply, buildings or any other civil works estimated to cost USD 1,000,000 or more;



- (b) award of any contract for goods (vehicles, equipment and materials) estimated to cost USD 200,000 or more; and
- (c) Award of any contract for consulting services to cost USD 100,000 or more or any single source selection using QCBS (quality and cost based selection) or CQS (costs and quality selection) methods.

122. Community participation in procurement (CPP) where appropriate, may be considered for some modules or some interventions. The Appendix II of the IFAD Procurement Guideline Manual outlines the considerations in this respect. The CPMO, in coordination with the PPMO will work out the detailed procedures and regulations relevant to community participation in procurement, where needed. The principals of transparency, competition, participatory monitoring, and joint decision-making will be adhered to at all levels. Township PMOs and County PMOs will also involve themselves in monitoring the procurement process, and ensure compliance of procedures and principals such as those procurement methods like Local Shopping and Local Competitive Bidding.

123. All bidding documents and contracts for the procurement of goods, works and services financed by IFAD loan will include a provision requiring contractors to:

- Allow full inspection by IFAD of all bid documentation and related records;
- Maintain all documents and records related to the bid or contract for three years after completion of the bid or contract; and
- Cooperate with agents or representatives of IFAD carrying out an audit or investigation.

124. Consolidated procurement plans covering a period of 18 months will be prepared as part of each AWPB and submitted to IFAD for “no objection” review, before commencement of procurement. The procurement plan should be prepared by each CPMO and consolidated by the PPMO in line with the requirements of IFAD. It should provide information of goods, works and services disaggregated into different modules and components, including: (i) description of goods, works or services to be procured by module; (ii) procurement method; (iii) estimated unit cost for each item; (iv) estimated cost for each procurement; and (v) review procedure (post or prior review by IFAD). The project will, during the project implementation period, use national procurement regulations and items of specific applicability will be identified clearly in procurement plans that are submitted to IFAD along with AWPBs. A procurement plan for the first 18 months has been prepared during the design completion mission, and is available in the Project Life File (Annex 13).

#### **Audit**

125. In line with section 9.03 of the General Conditions for Agricultural Development Financing of IFAD, the Department of Audit (DA) in GZAR, which is constituted as an independent body under the National Audit Office, will be delegated to be responsible for auditing the project. The DA might also further delegate the specific audit works to the Bureaux of Audit at prefecture or county level, if needed. For each fiscal year, auditors will review withdrawals from the Project Accounts at various levels on the basis of SOEs and financial statements and issue an independent opinion on whether such expenditures are eligible based on the project financing rule. They also review the efficiency of the flow of the loan funds and the delivery of counterpart financing. Audit reports will be issued in line with the requirements of IFAD, as set out in the Financing Agreement, and submitted to IFAD timely. PMOs will prepare and provide the project financial statements and other needed documents to cooperate with the project audit. IFAD, as part of its supervision functions, will also inspect project accounts to ensure their adherence to acceptable standards.

#### **E. Supervision**

126. In order to facilitate the project’s implementation and ensure the achievement of project objectives, IFAD and the Government will perform project supervisions/reviews that include annual supervision, mid-term review, and completion review.

- **Annual supervision:** Annual supervision will be conducted by supervision missions sent by IFAD, and to the extent possible jointly with the Government. The missions will review the progress of project implementation, both physically and financially; implementation performance; fiduciary aspects, results and impact, sustainability, and the like. Recommendations to issues raised, if any, will be made by the mission to improve the project implementation. For the first supervision of the project, suggested focuses will be on reviewing adherence to the project strategies and institutional performance including implementation arrangements, targeting and

appropriateness of procurement; functioning of the M&E system; and effectiveness of financial management. Suggested composition of supervision missions will include a team leader who will be responsible for reviewing project planning, implementation arrangements, management performance, procurements, and the effectiveness of project strategies, including the targeting and gender mainstreaming strategies, as well as providing recommendations for improvement of project implementation, etc.; a community infrastructure development expert responsible for reviewing procurements, implementation, management, targeting and O&M of activities under infrastructure sectors, etc.; an agricultural expert responsible for reviewing procurements, implementation, management, targeting and results of activities under the agricultural and livestock sectors, etc.; a farmer cooperative and market expert responsible for reviewing procurements, implementation, management, targeting and results of project-supported farmer cooperatives and value chain enhancement activities, etc.; and a social development expert responsible for reviewing adherence to project strategies on poverty focus and gender mainstreaming, effectiveness of targeting strategies, and participation and benefits of women and ethnic minorities in the project, etc.;

- **Mid-term review:** IFAD and the Government will jointly carry out a “mid-term review” (MTR). Among other things, the MTR mission will review the project approaches and strategies including the effectiveness of targeting and gender mainstreaming strategies, implementation modalities, poverty and gender focuses, impact of individual module/intervention, and sustainability. The mission will recommend a scaling-up or reorientation as may be required to achieve project objectives and remove eventual constraints. Recommendations from the MTR may result in modifications to the Loan Documents. The design completion mission suggests that a mid-term review of the project should be carried out after two years of implementation so as to enable a timely re-orientation of the project since amendments of financing agreements in China tend to take time to consummate, while the total implementation period for GIADP is only 5 years, there-by leaving little room to manoeuvre; and
- **Completion review:** Completion review, also jointly conducted by IFAD and the Government, will evaluate, among other things, the results and impact of the project, review sustainability and exit arrangement, and draw experiences and lessons for later IFAD and government supported projects.

#### F. Risk identification and mitigation

127. The project is designed by following the demands of potential beneficiaries after fully analysing the conditions, such as constraints and opportunities of development, of the project areas. The activities designed are in line with the Government’s policy directives and the strategies of poverty reduction and rural development. Risks for the project will, therefore, be due to the rapidly changing economic environment and the results-oriented processes of implementation. These risks however could be mitigated to a great extent by the demand-driven nature and modular approach of the project, which will ensure continuous adjustments to address problems encountered during project implementation. PMOs will play an important role in monitoring these risks and will be instrumental in ensuring that any issues that could jeopardize the project’s success are addressed by relevant stakeholders. Possible risks and their mitigation measures by component/module are given in Table 6.

Table 6: Risks and Mitigation Measures by Project Components/Modules

| Component/Module         | Risks   | Risk level     | Risk mitigation measures  | Residual risk level |
|--------------------------|---|----------------|---|---------------------|
| Community infrastructure | Inappropriate operation and maintenance of project works resulting from inadequate capacity of O&M groups in performing their duties. | Medium         | The County Bureau of Water Resources and the Township Water Resources Stations will take charge to support the groups for which they collect water fees and receive budgets from the Provincial governments yearly. | Low                 |
|                          | Damage of project works by floods or other natural calamities.  | Medium         | Mechanisms for the repair of such damage exist in the back-up system of Government; related technical agencies under county government will undertake the responsibility.   | Low                 |
|                          | Soil and water erosion resulting from excavations for the pipelines for drinking water.   | Medium         | All water supply works are based on existing springs and no new infrastructure like dam or new ponds will be constructed.   | Low                 |
| Cash crops and landrace  | Difficulty increasing farmers’ revenues due to difficult market access for their products.  | Medium to high | Only those products for which known markets exist or for which appropriate twining arrangements have been made will be promoted.  | medium              |

|                                      |   |                |  |               |
|--------------------------------------|---|----------------|--|---------------|
| livestock modules                    | Products could not meet the standard for premium market due to low capacity of the rural poor.                        | Medium to high | Twinning arrangements between farmers and buyers will foresee the later building the capacity of famers to meet their requirements.  | medium        |
|                                      | Crop damage and failure associated with climate change and rainfall.  | Medium         | Competent provincial government agencies and resources will be mobilised to help the victims of such damages.  | Low to medium |
| Improvement of agricultural stations | Inadequate funding to implement the module as a result of price inflation or cost overruns.                           | Medium         | The Province will take the exchange risks and therefore provide the extra resources needed to cover the shortfall accordingly.   | Low           |
|                                      | Target stations fail to improve their technical delivery services due to inadequate capacity.                         | Medium         | The County BOA will step-in to fill the capacity gap and provide the necessary services to the farmers in need of such.  | Low to medium |
| Institutional support                | Inadequate capacity of county BOA to support township agricultural stations.  | Medium         | Flexibility is inbuilt in the project to mobilise competent technical assistance from the Province of related academies and universities, if needed.                                       | Low to medium |
| Support to farmer cooperatives       | Failure to establish sufficient management capacity of the recipient cooperatives.                                    | Medium         | Technical support, training, exposure and access to new techniques and know-how  | Low to medium |
|                                      | Insufficient production for the cooperatives to have economies of scale required to survive.                          | Medium to high | Buyers and cooperatives will be assisted to work out more consolidation to achieve the required scale of production to remain profitable.  | Low to medium |
| Value chain enhancement              | Downward economic trends or market volatility leading to reduced margins due to increases in fixed asset investments. | Medium         | The Co-operatives will work with the Provincial governments to adapt their business plans accordingly allowing the cooperatives remain solidly incorporated into the value chain.          | Low to medium |
|                                      | Inequitable access to facilities and services for the extreme poor.   | Medium         | Cooperative by laws and M&M guidance stressing inclusive access and equal right of utilization will be enforced by the provincial governments.   | Low to medium |
|                                      | Corruption in procurement of service and goods.   | Medium to high | Local laws and regulations regarding procurement, bids and contracts will be enforced by the Provinces and IFAD procurement reviews and approval processes will capture and prevent these. | Low to medium |
| Biogas system                        | Inadequate animal manure for the operation of biogas systems.   | Medium         | REO will construct biogas digesters only after adequate feasibility studies. If the situation changes REO will work with the families to adjust.   | Low to medium |
|                                      | Biogas systems not operational due to bad maintenance.  | Medium         | REO has budgetary and technical provisions to back-stop all biogas digesters they help build with technical and maintenance services.  | Low to medium |
| Village sanitation improvement       | Inappropriate operation and maintenance of the works built by the project.  | Medium         | REO will take charge to support operation and maintenance groups established for the sustainability of project works.  | Low to medium |
| Project management                   | Inadequate targeting to the poor and women during implementation.   | Low to medium  | Provincial Government provisions for targeting will be invoked to ensure the criteria for selection of villages and households are appropriate.  | Low           |
|                                      | Slow disbursements of project funds resulting from delayed preparation of withdrawal applications (WAs).              | Low to medium  | Implementation support will identify and remove any bottlenecks related to IFAD funds, while close supervisions will help the PMOs to ensure counterpart funds are mobilised on time.      | Low           |

## V. PROJECT COSTS, FINANCING, BENEFITS AND SUSTAINABILITY

### A. Project costs

128. The total project cost, including contingencies is estimated at USD 96.83 million (CNY 624.53 million). Physical and price contingencies amount to USD 8.2 million (CNY 52.9 million) and account for 10% of the total project costs. Cost estimates include all nationally applicable direct and indirect taxes and for the project interventions, the taxes are estimated at US\$ 2.7 million (CNY 25.35 million) and account for 4% of the total project costs. Investment and recurrent costs amount to 90.3% and 9.7% of the total cost, respectively. There is no direct foreign exchange expenditure under the project except for the overseas study tours. Indirect and implicit expenditures of FE are marginal and these are not shown separately in the cost estimates.

129. Component A (Community Infrastructure) accounts for USD 56.08 million, 57.9% of total costs; Component B (Agricultural Production and Marketing Support) USD 27.87 million, 28.9% of total costs; Component C (Rural Environment Improvement) USD 4.32 million, 4.5% of total costs. Project

management costs are 8.7% of the base costs, including the establishment and operation of 1 PPMO, 8 CPMOs, 44 TPMOs and the VIGs. Details are shown in Table 7.

130. The project resources are allocated to the project counties based on the following considerations: (i) conformity with government's development plan and priorities on related sectors; (ii) size of poor and vulnerable population in the project area and; (iii) optimal potential of piloting innovative poverty reduction approaches. The approximate resulting allocation of IFAD loan proceeds available for the counties is as follows: Longzhou (7.0%), Leye (6.7%), Duan (7.4%), Beiliu (10.8%), Cenxi (17.4%), Tengxian (17.6%), Yongfu (14.5%), and Pingle (16.9%).

|   | (CNY '000)     |            |                | (USD '000)    |            |               | % Foreign Exchange | % Total Base Costs |
|---|----------------|------------|----------------|---------------|------------|---------------|--------------------|--------------------|
|   | Local          | Foreign    | Total          | Local         | Foreign    | Total         |                    |                    |
| 1. Community Infrastructure Development | 330 743        | -          | 330 743        | 51 278        | -          | 51 278        | -                  | 58                 |
| 2. Agricultural Production & Marketing  | 165 138        | -          | 165 138        | 25 603        | -          | 25 603        | -                  | 29                 |
| 3. Rural Environment Improvement        | 24 713         | -          | 24 713         | 3 832         | -          | 3 832         | -                  | 4                  |
| 4. County Project Management            | 40 160         | -          | 40 160         | 6 226         | -          | 6 226         | -                  | 7                  |
| 5. Provincial PMO                       | 10 280         | 800        | 11 080         | 1 594         | 124        | 1 718         | 7                  | 2                  |
| <b>Total BASELINE COSTS</b>             | <b>571 035</b> | <b>800</b> | <b>571 835</b> | <b>88 533</b> | <b>124</b> | <b>88 657</b> | <b>-</b>           | <b>100</b>         |
| Physical Contingencies                  | 25 773         | 40         | 25 813         | 3 996         | 6          | 4 002         | -                  | 5                  |
| Price Contingencies                     | 27 061         | 52         | 27 113         | 4 196         | 8          | 4 204         | -                  | 5                  |
| <b>Total PROJECT COSTS</b>              | <b>623 869</b> | <b>892</b> | <b>624 761</b> | <b>96 724</b> | <b>138</b> | <b>96 862</b> | <b>-</b>           | <b>109</b>         |

## B. Project financing

131. The project will be jointly financed by IFAD and the Government, at an approximate ratio of 50% IFAD and 50% Government. But there are variations between components and the activities within components. Government and IFAD will jointly cover the project investment costs including all module implementation costs, vehicles, equipment, and materials, workshops, training, and TA. Government will finance all the recurrent costs. Details are as in Table 8 & 9.

|   | Government of China |             | IFAD          |             | Beneficiaries |            | Total         |              | For. Exch. | Local (Excl. Taxes) | Duties & Taxes |
|---|---------------------|-------------|---------------|-------------|---------------|------------|---------------|--------------|------------|---------------------|----------------|
|   | Amount              | %           | Amount        | %           | Amount        | %          | Amount        | %            |            |                     |                |
| 1. Community Infrastructure Development | 31 540              | 56.2        | 21 245        | 37.9        | 3 324         | 5.9        | 56 109        | 57.9         | -          | 54 019              | 2 089          |
| 2. Agricultural Production & Marketing  | 7 831               | 28.1        | 20 046        | 71.9        | -             | -          | 27 877        | 28.8         | -          | 27 674              | 202            |
| 3. Rural Environment Improvement        | 1 177               | 27.2        | 3 023         | 70.0        | 119           | 2.8        | 4 318         | 4.5          | -          | 4 132               | 186            |
| 4. County Project Management            | 4 894               | 73.1        | 1 796         | 26.9        | -             | -          | 6 690         | 6.9          | -          | 6 502               | 188            |
| 5. Provincial PMO                       | 979                 | 52.4        | 890           | 47.6        | -             | -          | 1 869         | 1.9          | 138        | 1 694               | 36             |
| <b>Total PROJECT COSTS</b>              | <b>46 420</b>       | <b>47.9</b> | <b>47 000</b> | <b>48.5</b> | <b>3 442</b>  | <b>3.6</b> | <b>96 862</b> | <b>100.0</b> | <b>138</b> | <b>94 022</b>       | <b>2 702</b>   |

|   | Government of China |             | IFAD          |             | Beneficiaries |            | Total         |              | For. Exch. | Local (Excl. Taxes) | Duties & Taxes |
|---|---------------------|-------------|---------------|-------------|---------------|------------|---------------|--------------|------------|---------------------|----------------|
|   | Amount              | %           | Amount        | %           | Amount        | %          | Amount        | %            |            |                     |                |
| 1. Civil works: Community Infrastructure Development /a | 31 314              | 60.0        | 20 876        | 40.0        | -             | -          | 52 190        | 53.9         | -          | 50 101              | 2 089          |
| 2. Civil Work:Buildings /b                              | 668                 | 30.0        | 1 558         | 70.0        | -             | -          | 2 225         | 2.3          | -          | 2 114               | 111            |
| 3. Vehicles, Equipment & Materials                      | 175                 | 20.3        | 690           | 79.7        | -             | -          | 865           | 0.9          | -          | 838                 | 27             |
| 4. Training, Workshops, Technical Assistance & studies  | 0                   | -           | 3 182         | 100.0       | -             | -          | 3 182         | 3.3          | 138        | 3 044               | -              |
| 5. Modules  | 6 848               | 29.5        | 16 257        | 70.0        | 119           | 0.5        | 23 224        | 24.0         | -          | 22 959              | 265            |
| 6. Market Access  | 1 479               | 25.0        | 4 438         | 75.0        | -             | -          | 5 917         | 6.1          | -          | 5 917               | -              |
| 7. PMO management                                       | 5 709               | 100.0       | -             | -           | -             | -          | 5 709         | 5.9          | -          | 5 500               | 209            |
| 8. Community Infrastructure Development O&M             | 226                 | 6.4         | -             | -           | 3 324         | 93.6       | 3 550         | 3.7          | -          | 3 550               | -              |
| <b>Total PROJECT COSTS</b>                              | <b>46 420</b>       | <b>47.9</b> | <b>47 000</b> | <b>48.5</b> | <b>3 442</b>  | <b>3.6</b> | <b>96 862</b> | <b>100.0</b> | <b>138</b> | <b>94 022</b>       | <b>2 702</b>   |

/a about 70% under LCB and remaining under local shopping procurement

/b Building for the Training centre

## C. Summary benefits and economic analysis

### Summary benefits

132. **Beneficiaries and benefits.** The immediate benefits from the project will be increased revenue and productivity through the improved productive assets, demonstration and up-scaling of niche/cash crops production and landrace livestock production, improved access to information and markets, better conditions for technical training and extension, and enhanced effectiveness of technical services, etc. Rural women and ethnic minorities in the project area will be empowered, economically and socially, by participating in the project activities. Particularly, more women will participate in the processes of decision-making as a result of gender mainstreaming in the project implementation and management. It is expected that about 227,000 farmer households will directly benefit from the project;

more than 50 % of them belong to the poor and vulnerable population and more than 50% of the beneficiaries will be women. The major specific benefits are as follows:

- i) About 46,000 households will benefit from the 314.5 km of canal lining which will result in higher productivity of agriculture by the improved and newly-added irrigation area of 5,329 ha farmland;
- ii) Construction of 69 sets of drinking water supply systems will improve the access of about 17,500 households to safe drinking water, which will improve the health status of beneficiaries and reduce the burden of women in fetching drinking water from long distances;
- iii) Pavement of 464 km village roads will, directly and indirectly, benefit about 67,000 rural households, which will improve the access of beneficiaries to updated information, technologies and markets, promote the development of commercialized production of agriculture, and create a prerequisite for the rural women and men to enter the value chain;
- iv) Implementation of the annual cash crops, perennial cash crops and landrace livestock modules has the potential to reach about 9 750, 13 000, and 320 farmer households respectively. About 30,000 farmers will be trained with new/updated technologies;
- v) It is estimated that improvement of township agricultural stations will benefit about 108,000 farmer households by improved access of rural men and women to agricultural technical services in a timely and effective manner, and woman beneficiaries will be no less than 55%;
- vi) It is expected that about 27,000 rural households will directly benefit from implementation of project support to 44 farmer cooperatives module, 27% of them belong to the poor households when the project starts, and 38% will be women.
- vii) It is estimated that about 31,000 farmer households will benefit from implementation of the value chain enhancement package by strengthened linkage between the beneficiaries and remunerative markets;
- viii) Piloting of the biogas system and the village sanitation improvement modules will directly benefit about 4,350 farmer households through provision of clean energy and improved habitat environment.

133. **Institutional benefits.** Major institutional benefits include:

- ◆ The conditions and service capacity of target agricultural extension stations/centres at both township and county levels will be enhanced greatly, which will improve their effectiveness of technical development and delivery, consequently resulting in improved access of rural women and men to technical services;
- ◆ About 44 farmer cooperatives will benefit directly from the project to enhance their capacities in self-management, development of remunerative markets and value chain services;
- ◆ 25 cooperatives will benefit directly from the support of value-added facilities, 6 markets will be built with increased capacity of 12,000 MT and this should help gain at least a 7-10% of additional premium to goods transited and traded;
- ◆ The capacity of all PMOs, IAs and VIGs will be enhanced by participating in the processes of project planning, implementation, management and M&E. Particularly, the close linkage of VIGs' composition to the village committees will provide a good potential of continuity in the villages' development through participatory planning;
- ◆ All the interest groups established by the project for sustainable operation and maintenance of physical works will enhance the capacity of rural communities in terms of self-planning and internal management.

### **Economic analysis**

134. Economic viability of the project has been measured using three indicators, namely, economic internal rate of Return (EIRR), Net Present value (NPV) and benefit cost ratio (BCR). The overall project IRR is about 20% for a 25 year stream of costs and benefits. At a discount rate of 12%, the benefits and costs yield a BCR of 1.2 and a NPV of CNY 1,320 million.

135. Sensitivity analysis is fundamental to any economic evaluation. It is used to test the vulnerability of options to unavoidable future uncertainties. While doing so, spurious accuracy is avoided, and it is essential to consider how conclusions may alter, given the likely range of values that key variables may take. Therefore, the need for sensitivity analysis is always be considered, and, in practice, dispensed with only in exceptional cases. Sensitivity analysis of the project has been carried out for four different scenarios with a 12% discount rate: (i) 10% increase in costs; (ii) 20% increase in

costs; (iii) 10% reduction in benefits; and (iv) 20% reduction in benefits. These are demonstrated in Table below and details in WP 8.

136. Even when costs increased by 10% and benefits declined by 10%, the NPV is CNY 475 million, the BCR remains at 1.2 at 12% discount rate and the IRR is 15%, demonstrating the robustness of the Project. Summary results are presented in Table 10 below and details in WP8.

| <b>Table-10: Sensitivity Analysis of NPV, BCR and IRR of the GIADP a/</b> |   |                          |                    |     |                      |      |
|---|---|--------------------------|--------------------|-----|----------------------|------|
| <b>Project Performance Indicators:</b>                                    | Discount Rate %   | <b>NPV (CNY million)</b> |                    |     |                      |      |
|   |   | Base Case                | Costs Increased by |     | Benefits declined by |      |
|   |   |                          | 10%                | 20% | 10%                  | 20%  |
| NPV   | 12 %  | 1,319                    | 654                | -13 | 522                  | -277 |
| <b>Benefits Cost Ratio</b>  |   |                          |                    |     |                      |      |
| BCR   | 12 %  | 1.2                      | 1.09               | 1.0 | 1.08                 | 0.96 |
| IRR   | <b>IRR of Benefits and Costs Streams (%) at varying scenarios</b> |                          |                    |     |                      |      |
|   | -   | 20                       | 15                 | 12  | 15                   | 10   |

#### D. Sustainability

137. Overall sustainability of the GIADP can be rated high. Because, two key factors of sustainability are the existence of mainstream government programmes in poverty alleviation - to which GIADP will be complementary - and the seamless integration of the PMO at county and township levels into local government structures. The PMOs' experiences gained under the successful implementation of the IFAD-assisted WGPAP will go a long way in showing satisfactory results. Government and beneficiary performance are expected to be good, not only for their ability to implement the project effectively and efficiently, but also for the determination of the PMOs at county and provincial levels to establish and run a comprehensive monitoring and evaluation (M&E) system.

138. Project activities designed are in line with the orientation of government's rural development and poverty reduction strategies and policies. A salient feature of the GIADP is that all involved partners and stakeholders and the beneficiaries evince great interest in the proposed interventions of the project and this will ensure sustainability of the project. It is foreseeable that the government will continue supporting the overall development of the project area after phasing out of the project. In terms of innovation and scope for replication, the project has very good potential and in this respect, it will, as a part of its activities, also capture and document innovations and good practices. Successful project modules and innovations will be scaled-up by the government and other donors for the development of the rural economy and poverty reduction. Nevertheless, the PMOs, together with relevant IAs, should be made aware of the importance of the project's exit arrangement and sustainability plan, which will include, among other things, up-scaling of positive project modules/activities, establishment of effective O&M groups and mechanisms for the sustainability of project works and facilities, and sustainable technical and follow-up services to the project beneficiaries. The summary exit strategies and sustainability approaches are as follows:

- The physical works built by the project, including irrigation and drinking water supply facilities and village roads, will be handed over to related governmental agencies or local communities for operation and maintenance, depending on the scale of the works and following relevant governmental regulations. O&M groups and mechanisms for all the works will be established for sustainability, under the facilitation of IAs.
- The modules of annual/perennial cash crops and landrace livestock aim at increasing the revenues of rural women and men, particularly those from the poor and vulnerable households. These activities are highly appreciated by farmers and promoted by the government. Sustainable technical services to these activities are guaranteed by the improved agricultural extension network. Continued scaling-up of these modules by the government and other donors are foreseeable.
- The improved township agricultural stations and counties' training centres will be handed over to the township stations and county BOAs, respectively for operation and maintenance, which will improve the effectiveness of agro-technical extension and services.
- Farmer cooperatives established and supported under the project are designed from the beginning to be strong, self-sustaining organisations. They will operate under the normal market

conditions and the project support relates to capacity building and integration into the value chain. Implementation of the module will draw on services from existing public and private operators as well as practitioners from established cooperatives. The value adding facilities will become an integrated part of the recipient cooperatives and they will be managed as part of the collective assets. M&M committees will be formed to ensure the sustainable use and maintenance. The productive assets will continue to perform under normal market conditions during and after the project life.

- Biogas systems built by the project will be handed over to the beneficiary households for operation and maintenance, associated with trainings on the safe operation and maintenance. Technical services will be taken by the existing government service network which has been established from county down to village level.
- The assets built under the village sanitation improvement module will be handed over to the beneficiary villages for operation and maintenance. Establishment of O&M groups and mechanisms, associated with awareness training for beneficiaries, will improve the awareness of beneficiaries on environment sanitation and enhance the capacity of villagers' self-planning and management in participatory manner.





## **ANNEX 1. COUNTRY AND RURAL CONTEXT BACKGROUND**

### **i. Country economic background**

1. Since the start of far-reaching economic reforms in the late 1970s China's population, estimated in 2010 to be around 1.34 billion people, witnessed unparalleled economic growth that has fuelled a remarkable increase in per capita income and decline in poverty. About 10% annual real growth of GDP was recorded continuously for more than 10 years up to 2007 and about 9% increase of GDP was achieved in 2009 and 2010 against the challenge of the worldwide financial crisis which started in 2008. China's gross domestic product (GDP) in 2010 was about CNY 40,000 billion, having grown by 10.3% over the previous year up from 9.2% in 2009. The overall value added in 2010 by the agricultural sector was 10.2% of GDP, that of industry was 46.8%, and that of the tertiary sector was 43.0%. Although some estimates indicated the growth would slow down, but it remained at a relatively high 9.6% in the first half of 2011.

2. With this rapid economic development and a declining population growth rate, per capita GDP in current prices rose from CNY 381 in 1978 to about CNY 25,000 in 2009, equivalent to about USD 3,700. A significant shift in the composition of GDP has also taken place, with agriculture losing weight mostly in favour of industry and services. The average per capita net income for the rural population rose from CNY 686 in 1990 to CNY 5,153 in 2009. A large part of the growth in rural income that occurred in recent years has been as a result of wages from off-farm activities, though the ability to access off-farm opportunities is variable from province to province.

3. Regional disparities between provinces/regions and between urban and rural areas have been widening in the last decades. Economic growth has been far more rapid in the eastern provinces than the western provinces/regions. Per capita disposable income for the urban population is more than three times that for the rural population. This widening disparity is well recognised by the Government that has made a range of policy responses including the complete abolition of agricultural taxes and freeing-up of labour migration regulations. Government has also actively tried to draw investment into the western provinces since 2000. However, poor human resources and physical infrastructure make the process of development in the west difficult and slow.

4. To narrow the above-mentioned disparity the central Government has issued western development policies since 2000, which were to draw investment into western provinces including GZAR. These policies are continuing and more efforts are being made by the Government to accelerate the development of western provinces/regions. Its focuses include, among other things, the acceleration of infrastructure development including irrigation facilities, ecological and environmental improvement, and restructuring and optimization of agriculture.

5. Considerable amounts of natural resources were used during the last 30 years to maintain the high economic growth, especially in relation to energy spending, land use and water consumption. This was aggravated by extreme weather conditions caused by climate change, which is increasingly impacting on the country's socio-economic development. The Government recognises the need to pursue sustainable development by promoting resource conservation and environmental protection, and strengthening people's resilience to these adverse conditions.

### **ii. Country rural development and poverty**

6. The share of the rural population in the country has been decreasing in the last decades, from about 80% in 1980 to 53.4 in 2009. Around 40% of the total employment in China occurred in rural areas. They mainly occur in farming, forestry, animal husbandry and fishing. The total cultivated area of farmlands was about 122 million hectares in 2009, overall about 0.1 ha per capita. About 49% of the total farmland was effectively irrigated. The proportion of total arable area planted to food crops experienced a rapid decline, although this decline slowed down in the last 10 years, accompanied by diversification into other more profitable cash crops. However, this fall in sown area for food crops was more than compensated by yield increases, recording an increase of overall per capita food production from 319 kg in 1978 to 398 kg in 2009. This, combined with a steady decline in per capita grain consumption in urban areas, means that the Government has been able to consistently meet the central food security goal of its agricultural policy. Livestock and aquaculture also experienced a rapid development in the same period. Overall meat production rose from 9 kg/person in 1978 to 57 kg/person in 2009, while aquatic products increased from 5 kg/person to 38 kg/person.

7. China is the first developing country to achieve the UN millennium development goals (MDGs) of reducing the number of its people living in extreme poverty and hunger by half. Its reform-driven economic growth, together with a well-funded national poverty reduction programme, has brought about a major reduction in absolute rural poverty. China is widely recognized for its outstanding achievements in reducing poverty since the reform of the rural economy. Broad participation in the subsequent reform-driven economic growth, together with well-funded national poverty reduction programs, has brought a tremendous reduction in rural poverty during the past 30 years. Using the austere official poverty lines, the number of the rural poor population has fallen from about 250 million in 1978 to about 36 million in 2009. Compared to the rural population, this signifies a decline in rural poverty prevalence from 30.7% to 3.8%.

8. Beginning in the 1980s, the government approach towards poverty reduction focused on area development programs targeted on poor counties. Regional economic development was achieved through improved management of natural resources and the provision of infrastructure and capacity-building of the poor. The “poverty” and “low-income” groups were the target of these national development-oriented poverty-reduction efforts. Priority support was targeted at extremely poor areas in the central and western provinces/regions. Since 2001, the strategy of poverty reduction has shifted to a village- and household-based approach through the identification of focal villages for poverty reduction and setting up records and development tracing of individual poverty households. This shift was to cope with the dispersion of the poor population and the characteristics of poverty, emphasizing on capacity building and sustainable development. In 2008, a new income criterion was introduced according to which poverty was defined as rural per capita annual net income below CNY 1196. Income criterion for the group of the low income population would be defined by local governments according to their respective economic status.

9. Labour migration is an integral part of rural household coping strategies in China. It was estimated that more than 110 million rural labourers took up employment outside their townships in 2009, representing about 25% of the total rural labour force. Government policy is to facilitate rural to urban migration, by improved legislation of residence registration and social benefits for migrants, stricter application of labour contracting regulations and by the adoption of a National Plan for Training Rural Migrant Workers, 2003-2010, to improve vocational training for about 60 million prospective rural migrant labourers during the seven-year period.

## **ANNEX 2. POVERTY, TARGETING AND GENDER**

### **A. Country rural poverty and poverty reduction**

1. China is widely recognized for its outstanding achievements in reducing poverty since the reform of the rural economy. Broad participation in the subsequent reform-driven economic growth, together with well-funded national poverty reduction programs, has brought a tremendous reduction in rural poverty during the past 30 years. Using the austere official poverty lines, the number of the rural poor population has fallen from about 250 million in 1978 to about 36 million in 2009. Compared to the rural population, this signifies a decline in rural poverty prevalence from 30.7% to 3.8%. The dramatic reduction in the poor population has allowed China to already achieve and exceed the Millennium Development Goal of halving the proportion of the population with incomes below USD 1 per day between 1990 and 2015.

2. Achievement of the rural poverty reduction strategies was strongly built on crop and livestock development through improved varieties and techniques and the promotion of ecologically sensitive measures. Farm products that have (niche) comparative market advantages were promoted, alongside the development of an agro-processing industry. Other elements included technology transfers, promotion of contract farming among poor farmers and the enhancement of efficient support services in information, technology and marketing. Furthermore, the volume of concessional poverty reduction loans was increased for agriculture, processing, marketing and infrastructure development. Microfinance was expanded gradually, and private enterprise development in poor areas promoted. These investments were complemented by improvements in infrastructure, communications and social services, including health and education.

3. Despite its achievements, China still faces an uphill task in poverty reduction. Available data show that the distribution of poverty between and within provinces varies widely, reflecting the regional economic disparities. An increasing share of the remaining rural poor are now concentrated in the western provinces/regions, and mostly in minority-concentrated, remote and mountainous areas. By the end of 2009, the poverty incidence was recorded with 0.1%, 3.1% and 8.2% for the eastern, central and western regions of the country, respectively. The poverty incidence for the 592 nationally-designated poor counties was about 11% or seven percentage points higher than the national average. These nationally-designated poor counties recorded an average farmers' per capita annual net income of CNY 2842 in 2009, about 55% of the national average. Poverty reduction in these areas will be more challenging due to their poor natural resources and adverse production and living conditions. The key issue for assisting these remaining poor is not only to allocate more funds for poverty reduction, but more important is to make more efficient and effective use of the available funds. This can be achieved through a number of measures, including focus targeting to the poor villages, development of cash income sources by strengthening the monitoring and supervision of the use of poverty reduction funds, the effectiveness of diversifying agricultural activities, and the improvement of access to remunerative markets. With the emphasis now being put on improving the productivity of the poor-concentrated areas, there is a need for innovative approaches in poverty reduction. IFAD has its comparative advantage in this regard due to its long experiences, both in China and elsewhere.

4. Beginning in the 1980s, the government approach towards poverty reduction focused on area development programs targeted on poor counties. Regional economic development was achieved through improved management of natural resources and the provision of infrastructure and capacity-building of the poor. The "poverty" and "low-income" groups were the target of these national development-oriented poverty-reduction efforts. Priority support was targeted at extremely poor areas in the central and western provinces/regions. Since 2001, the strategy of poverty reduction has shifted to a village- and household-based approach through the identification of focal villages for poverty reduction and setting up records and development tracing of individual poverty households. This shift was to cope with the dispersion of the poor population and the characteristics of poverty, emphasizing on capacity building and sustainable development. In 2008, a new income criterion was introduced according to which poverty was defined as rural per capita annual net income below CNY 1196. Income criterion for the group of the low income population would be defined by local governments according to their respective economic status. Currently, the Government is again updating its poverty reduction strategy, contiguous area development by focusing on improvement of rural infrastructure, development of commercialized agricultural production and capacity building for the rural poor.

5. Generally, China has experienced the following four stages of poverty reduction:
- i. The first stage was from 1978 to 1985, during which reform of the rural system was the main way for poverty reduction. The achievements included the increases of per capita grain output by about 14%, cotton by 74%, oil-bearing crops by 176%, meat by 88%, and rural per capita net income by about 300%. The number of poverty population decreased from 250 million to about 125 million.
  - ii. The second stage was from 1986 to 1993, during which large scale development-oriented poverty reduction approach was executed. China government adopted a series of important measures for poverty reduction, including the setup of poverty alleviation offices, the allocation of special fund for poverty reduction, and the formulation of special favourable policies. At the end, the number of poverty population decreased from 125 million to about 80 million.
  - iii. The third stage was from 1994 to 2000. Implementation of the “Seven-Year Priority Poverty Alleviation Programme” was the key instrument to tackle key problems for poverty reduction at this stage, based on the fact that some poverty areas lagged much behind the average due to the disparity of development and the distribution of poverty population showed obvious geographical characteristics. It was the first action programme for development-oriented poverty reduction with clear and definite objectives, targets, measures and a time schedule. At the end, the number of poverty population decreased from 80 million to about 30 million.
  - iv. From 2001 to 2010, the strategy of poverty reduction shifted to more village- and household-specific taking into account the distribution of poverty population and characteristics of poverty, emphasizing on capacity building and sustainable development. Through identification of focal villages for poverty reduction and setting up records and development tracing of individual poverty households, the “*One Body Two Wings*”<sup>9</sup> strategy was applied.
6. The Government is finalising its next Ten Year (2011-2020) Rural Poverty Reduction and Development Programme. That programme recognises rural poverty as a long-term challenge, persisting especially in the poor provinces, border areas, ethnic minority areas and the former revolutionary bases, which are mostly remote and mountainous. Consequently, poverty reduction will continue to be a long term task; strategic policies and efficient working mechanisms will be formulated and implemented to help achieve the objective of eliminating absolute poverty and substantially reducing relative poverty by 2020. The Government stresses its principle of development-driven poverty reduction, which will combine assistance with sector development, optimizing roles and functions of central and local governments, extending poverty reduction support to the vulnerable groups previously designated as “low-income” instead of “poor”, and committing to continued and increasing funding for poverty reduction. The key areas of focus of the programme include: (a) strengthening the capacity of the poor and improving their asset base; (b) improving community-level infrastructure, facilities, and services; (c) ensuring rural per capita net incomes grow faster than the national average; (d) further extending and improving the social safety net for the poor; and (e) gradually improving the health and living standards of the poor in general. *The core of the strategy is to increase the net income of the poor through focusing on the improvement of community infrastructure and the contiguous area development of commercialized agricultural production.*
7. IFAD’s Country Programme is aligned with the national poverty reduction strategies and initiatives, as it is based on supporting the poor and vulnerable groups, introducing innovative interventions and improving access of the rural poor to resources and opportunities. During the 1980s’ and 1990s’, IFAD joined government efforts in providing subsistence support in poor areas by adopting an integrated development approach and geographic targeting strategy, extending support to the most vulnerable households and improving the basic living conditions and service facilities in poor counties. Starting from 2000, IFAD’s Country Programme responded to the Government’s strategy of development-driven poverty reduction by channelling its investments in the areas and sectors disposed to provide greater opportunities for income generation and improved livelihoods for

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<sup>9</sup> “One Body” means the implementation of the Whole Village Advancement Programme which includes the activities of “five accesses” (access to water, access to road, access to electricity, access to telephone, and access to television), “two builds” (build schools and build clinics), “two improves” (improve animal sheds and improve toilet together with biogas development), and “one increase” (increase of income). “Two Wings” means the technical training of farmer migrants and the provision of loans to agro-processing enterprises (dragon-head enterprises) that bring along the development of rural production.

the poor women and men. The targeting strategy was aligned to a household and village-based approach. And gender sensitivity was introduced and maintained, while the active participation of poor households and villages in determining their development priorities was promoted. These were further strengthened with the start of IFAD's first (2006-2010) COSOP for China that helped further close alignment of its investments with the country's priorities. Also the formulation of the present 2011-2015 COSOP was done through an intensive consultative framework with the Government and other concerned stakeholders, which helped to harmonize IFAD's Country Programme for the next five years with the Government's new poverty alleviation strategy within the context of a fast-changing socio-economic context and challenges.

### **B. GZAR rural poverty**

8. GZAR is economically located in western China. It has a total population of about 50 million, of which the ethnic minority population accounts for about 38%. About 61% of the population resides in rural areas in 2009, seven percentage points higher than the national average though recording a similar trend of declining as the corollary of labour migration to the urban areas. GZAR is one of the poorest provinces/regions in China in terms of both overall per capita net income and the poverty rate of rural population. The overall average of annual per capita net income for the rural population was about CNY 3,980 in 2009, 77% of the national average. Overall poverty incidence for the rural population was 4.6% in 2009. Key constraints to the development of the rural areas in GZAR include the poor rural infrastructure including irrigation facilities, village roads, and drinking water supply facilities, and inadequate technical and information services. These result in low resistance to frequently-occurring adverse climatic calamities and the low-level commercialization of agricultural production. The serious drought calamity that occurred from the autumn of 2009 to the spring of 2010 caused tremendous difficulties to the inhabitants' living and production activities in GZAR. It was estimated that the calamity made more than 600 thousand rural inhabitants fall back to poverty.

### **C. Gender**

9. **Decision making.** As a patriarchal society, men are the major decision maker at all levels in China, and it is more conspicuous in rural China. On average, female village head accounts for 6.33% in the project counties except for Tengxian and Yongfu, while this percentage in project townships is only 3.96%. There is no female village head in the whole county of Longzhou and in the project townships of Duan County. Women are getting more chance presenting in community meetings as representatives of households since men migrate for off-farm income. However, they are yet to be empowered in community decision making. At household level, officially registered female household head only takes 9.89% in the project townships against the average of 11.57% for the project counties. This proportion in poor and vulnerable groups is lower. With the increase of household income and the absence of husband, wife is left with more decision making power on agricultural production and household livelihood management, but important family affairs such as building house, marriage, etc. are still decided by the husband.

10. **Labour division.** Clear gender labour division exists throughout rural China in different forms, varying with areas and time. The trend is that male labour is more dominant on the higher technical requirement and high economic return works, and what they left goes to women. Since labour migration has become the dominant income sources of rural households, most of the agricultural production activities are conducted by middle age women. Men come home helping heavy labour or labour intensive works like sugarcane harvesting, ploughing and *Siraitia grosvenorii* pollination. However, women's working load on agricultural production is increasing, so is the responsibility on managing livelihood and taking care of other family members.

11. **Access to credit.** With the objective of supporting cropping and livestock, credit activities are prevailing in the project area. The loan size is mostly from CNY 10,000 to CNY 15,000. The majority of rural credit borrowers belong to the vulnerable group. However, women's access to credit is frustrating, only 1.53% women borrowers. With the practice of patriline system in rural China, women normally cultivate the land under their husbands' name after moving to their husband's habitat for marriage. Even for the micro-credit lending by WFs, the threshold of lending for rural women is too high. Besides five households' joint guarantee or government staff's guarantee is required, each application of women's micro-credit should be examined by WF and bank, in some counties, BOF and Bureau of Labour and Social Security also exam the application. In Cenxi County, only 607 women obtained women's micro-credit among more than 3,000 applicants. Since the promotion of gender

equality by WGPAP, the proportion of women credit borrowers in Leye County is much higher than other counties.

**12. Access to technology.** There are several agencies providing agricultural technical trainings to farmers, such as agriculture bureau, forest bureau, water resource bureau, science and technology bureau, WF, science and technology association, etc. A great number of trainees are reported by the training agencies every year. For example, both Cenxi and Tengxian reported 165,000 trainees in 2009. However, according to the villagers in Liutian Village of Cenxi, they only received 1-2 irregular technical trainings each year. Focus group discussion with female villagers in a remote village showed that very few of them attended technical training due to distant venue and inconvenient training time. WF staff in Longzhou County mentioned that subsidy for trainees attracted men to present in training, and women as direct user of technique are supplanted. Moreover, data indicate that female takes only a small part of technician force, which generally is considered as one of the weak conditions for rural women accessing techniques.

#### D. Targeting

13. The project covers about 623 administrative villages of 44 townships in the eight counties. Nevertheless, differences in wealth and conditions exist between these administrative villages, so do between “natural” villages within an administrative village and between households within a “natural” village. Identification of these differences and their demands will be an initial step for targeting process of the project. In this regard, farmer households in the project area will be classified into three categories based on perceived wealth ranking, i.e. better off (A), vulnerable (B), and poverty (C), as described under Section A of Chapter III of this report. Project implementation will give priority to the poor and vulnerable households in villages selected with given criteria to maximize the project impact on poverty reduction. It is also expected that villages with high proportion of categories C and B households will receive the priority of project support, while taking into account their demands and conditions. The criteria for selection of eligible villages, farmer cooperatives and households participating in the project activities are summarized as in the following Table.

Criteria for Targeting and the Selection of Eligible Beneficiaries by Module

| Modules/<br>Interventions                    | Criteria for the selection of eligible villages   | Criteria for the selection of eligible households   |
|--|---|---|
| Irrigation improvement                       | <ul style="list-style-type: none"> <li>- Villages that have high proportion of poor population within the township;</li> <li>- Villages that have conditions for improvement of the irrigation facilities;</li> <li>- Demands of potential beneficiaries for the improved irrigation facilities;</li> <li>- Commitment of beneficiaries for O&amp;M of the improved facilities;</li> <li>- Priorities given to villages that have high proportion of ethnic minority population.</li> </ul> | - Inclusive approach at Lateral level, but priorities accorded to the poor and ethnic minority households.  |
| Safe drinking water supply                   | <ul style="list-style-type: none"> <li>- Villages that have high proportion of poor population within the township;</li> <li>- Availability of water resources;</li> <li>- Demands of potential beneficiaries for collective drinking water supply;</li> <li>- Commitment of beneficiaries for O&amp;M of the completed scheme;</li> <li>- Priorities given to villages that have high proportion of ethnic minority population.</li> </ul>   | - Inclusive approach at village level, but priorities given to the access of poor and ethnic minority households to safe drinking water.  |
| Village roads                                | <ul style="list-style-type: none"> <li>- Villages that have high proportion of poor population within the township;</li> <li>- Demands of potential beneficiaries for road improvement;</li> <li>- Commitment of beneficiaries for O&amp;M of the completed scheme;</li> <li>- High potentials for enhancing the linkage between farm production and markets.</li> <li>- Priorities given to villages that have high proportion of ethnic minority population.</li> </ul>                   | - Inclusive approach at proposed road alignments that are identified for improvement, but priorities given to the access of poor and ethnic minority population to information and markets.                 |
| Improvement of township agricultural station | <ul style="list-style-type: none"> <li>- Townships that have high proportion of poor population within the county;</li> <li>- Priority given to those project townships in remote and ethnic minority areas;</li> <li>- Townships undergoing re-organization process to regain autonomy of service delivery, but without appropriate offices and technical equipment;</li> <li>- Commitment of the township in improving the effectiveness of technical services.</li> </ul>                | - Inclusive approach for technical services at the township agricultural stations that are selected for improvement, and priorities accorded to the poor, ethnic minority population and women in outreach. |
| Annual and perennial cash                    | <ul style="list-style-type: none"> <li>- Villages where the poor and/or ethnic minority households have strong interest in engaging in the activities;</li> </ul>   | - All farmer households in villages are eligible for the modules, but   |

|                                     |   |  |
|-------------------------------------|---|--|
| crop                                | <ul style="list-style-type: none"> <li>- Potentials for demonstrating higher value products with linking to remunerative markets;</li> <li>- Priorities given to villages with high proportion of poor and/or ethnic minority population.</li> </ul>  | <p>priorities given to the poor, women-headed and ethnic minority households;</p> <ul style="list-style-type: none"> <li>- Households that are interested in participating in the module activities.</li> </ul>  |
| Landrace livestock demonstration    | <ul style="list-style-type: none"> <li>- Villages where the poor and/or ethnic minority households have strong interest in engaging in the activities;</li> <li>- Potentials for demonstrating the production of landrace livestock and poultry with linking to remunerative markets;</li> <li>- Priorities given to villages with high proportion of poor and/or ethnic minority population.</li> </ul>  | <ul style="list-style-type: none"> <li>- All farmer households in the villages are eligible for the modules, but priorities given to the poor, women-headed and ethnic minority households;</li> <li>- Households that are interested in participating in the module activities.</li> </ul>  |
| Support to farmers' Cooperative     | <ul style="list-style-type: none"> <li>- Legally registered with the local Bureaux of Industry and Commerce or Civil Affairs;</li> <li>- Should be based within project townships or villages, with cross-village membership;</li> <li>- Accept due cooperative principles and values,</li> <li>- Have established some market linkage with processors, wholesalers or retailers;</li> <li>- Strong leadership in applying quality standard of farm processing and cooperative marketing;</li> <li>- Commitment to systematically recruit the household members of the poor and vulnerable well being categories as members and applying tailor-made technical coaching for their integration;</li> <li>- Support of local technical service providers;</li> <li>- Project villages without existing farmers' cooperatives of such profile but with market linkage potential can be considered for establishment of new cooperatives as recipients of the module support.</li> <li>- Villages active in implementing project production modules given priority for forming new cooperatives as recipients of this module. There are strong signs of mutual assistance among the target households that participate in some quality farm processing under the support packages of production modules.</li> </ul> | <ul style="list-style-type: none"> <li>- The target group will be the economically active poor and vulnerable households in the poor villages practicing isolated and unorganized farming with low efficiency;</li> <li>- Special attention given to the women in those households, which should represent more than 35% of the recipient cooperative membership at project completion.</li> <li>- Households from the poor and vulnerable categories, involved in modules of agricultural development given priority during the recruitment of new cooperative members. The intention is reach a 50% of the new members to originate from the poor or vulnerable households.</li> </ul> |
| Support for value chain enhancement | <ul style="list-style-type: none"> <li>- In addition to the above-mentioned characteristics for identification of candidate cooperatives under the module of support to farmers' cooperatives, selection of recipient cooperatives for the support of value-added facility should be typically engaged in marketing products of primary and unprocessed forms, and the equipment acquired or facility built will generate more than 15% of profit margin for the overall Cooperatives within 12 months.</li> </ul>  | <ul style="list-style-type: none"> <li>- The target group will be the project-supported cooperatives and individual farmers that trade their surplus to the market therefore taking part in the value chain. While the package of cooperative value-added facility is well designated to the cooperatives that are recipient beneficiaries of the module of support to farmers' cooperatives, the whole agro-business community will benefit from the support package of market support.</li> </ul>  |
| Biogas                              | <ul style="list-style-type: none"> <li>- Villages that have high proportion of poor and/or ethnic minority population within the township;</li> <li>- Villages that will implement the village sanitation improvement module, with linking to each other.</li> </ul>  | <ul style="list-style-type: none"> <li>- Inclusive approach at household level within selected villages, but priorities would be given to the poor and ethnic minority households.</li> </ul>  |
| Village sanitation improvement      | <ul style="list-style-type: none"> <li>- Villages that have high proportion of poor and/or ethnic minority population within the township;</li> <li>- Villages where potential beneficiaries are interested in piloting rural environment improvement activities;</li> <li>- There are strong signs of beneficiaries' commitment for O&amp;M of project outputs.</li> </ul>   | <ul style="list-style-type: none"> <li>- Inclusive approach at village and household level.</li> </ul>   |

14. **Targeting strategy** of the project will incorporate the following key elements:

- Targeting of the project starts at the design stage. Eligible counties and townships for the project are identified through the analysis of available data and discussions with the representatives of government, following the agreed criteria. Targeting at village and household levels will continue through participatory approaches during project implementation (Details see Table 4 and ANNEX 11);

- Project activities are designed with main focusing on the needs and benefits of rural poor and vulnerable households. Community-level activities will reflect the needs of the poor and vulnerable households through participatory planning. Priority of household-level activities will be given to the poor and vulnerable groups. The identification of these households will be based on perceived wealth ranking conducted by the village implementing groups (VIGs) which will include a good proportion of representatives from households of different wealth categories;
- Project implementation will focus on the poor and vulnerable households, but stand inclusive in regard with community wealth building, in poor villages identified by the government through the prevailing governmental criteria and procedure. In other words, inclusive targeting approach will be applied at community level, whilst focus targeting still pertains to ensure the benefit and the participation of the poor and vulnerable households.

15. **Gender mainstreaming** will be achieved by focusing on woman's participation and benefits in the project design, implementation and management, as follows:

- The project design is tailored to the capability of women in view of their increased role in household businesses as a result of predominantly male labour migration. Women's participation in project activities will be ensured by developing feasible indicators for monitoring and constantly reassessing project implementation to adjust approaches to ensure full participation;
- Women will be fully involved in the project's planning and management by recruiting appropriate proportion of women into the management units, from VIGs at village level to the Provincial Leading Group (PLG) and PMO at provincial level. Project management office (PMO) at all levels will appoint a gender focus point to ensure women's participation in decision-making, whilst cooperating closely with the Women Federations (WFs) in project implementation.
- Gender awareness training will be provided to PMOs' staff at Province, county and township levels; and gender perspectives will be integrated in the trainings for VIG members and women representatives of natural villages during project implementation.



### ANNEX 3. COUNTRY PERFORMANCE AND LESSONS LEARNED

1. Since 1981, IFAD has financed 23 projects worth some USD 590 million in loans for rural poverty reduction in China. Project interventions involved agriculture, livestock, forestry, fishery, health, education, financial services, market access, environmental conservation and gender mainstreaming. Project evaluations and project completion reports suggested a good performance in terms of the projects' achieving their rural development and poverty reduction objectives. Targeting has been generally effective, although there is scope for improvement, especially within the context of ordinary lending terms and conditions that is making provinces focus on infrastructure. The Country Program Review generated lessons for a policy dialogue feeding into the new 2011-2015 COSOP for China.

2. While it is difficult to quantify the extent IFAD projects have directly resulted in fundamental changes that impacted beneficiary institutions and households, it is true that all IFAD-assisted projects are fully integrated into the local development programmes and policies. Thus, they have contributed substantially to strengthen the socio-economic capacities of the target population, reduce rural poverty at village and household-levels, help promote innovations and improve equitable access of the poor and the women to related services and resources. A review of the performance based allocation system (PBAS) processes indicate that in recent years China's country programme has maintained good scores of around 4.3-4.4, which is above the regional average of 3.6-3.7, and is among the highest average ranking of countries in the Asia and the Pacific region.

3. The IFAD's Country Program Review report, which was completed in May 2011, concluded that:

- i. IFAD's operations in China have achieved satisfactory results. The projects have been successful in improving agricultural productivity, enhancing food security, constructing needed community infrastructure facilities, increasing the income and asset base of farm households, and in improving access to employment and services. The review also noted significant results on supporting empowerment of women. Some challenges were encountered during implementation, such as delays in project launch and difficulties in financial flows.
- ii. The overall rating for the China lending portfolio has been consistently satisfactory in terms of relevance, effectiveness and efficiency and for partnerships. The impact achieved on rural poverty has also been satisfactory, although this has largely been through the physical achievements in improved food security, income and assets rather than other aspects of empowerment and institutional building. The program has not scored as positively for innovation, replication and scaling up, either through the portfolio performance, the non-lending activities or the strategic outcomes through the COSOP (2006-2010). Nevertheless, given the overall combined rating for the China program and the solid portfolio performance, the overall rating for the CPR is satisfactory;
- iii. The ratings reflect two views of the evaluation; first, that given the strong government ownership and implementation capacity IFAD has from many perspectives been a remarkable success. Targets have regularly been met or and physical and financial delivery has been consistently on track. The results achieved in terms of real improvements in the lives of millions of rural poor have been excellent. There is strong national ownership and every indication that project outcomes are being sustained by government's own resources and commitment after IFAD involvement ends. However, more could have been achieved if a number of implementation issues had been resolved more quickly, and if greater attention had been paid to innovation-related challenges. On the other hand, the program has not always been implemented in line with the more strategic goals of the partnerships as articulated in the 2005 COSOP, focusing on innovation and knowledge management;
- iv. Selection of project areas has been appropriate and in alignment with the Government's priorities throughout the period under review. IFAD projects have largely been located in counties that were designated as key poor counties in the national poverty reduction program, with the few exceptions almost all so designated under provincial poverty programs. Townships within the counties have also been selected for project work according to appropriate methodologies. Another important element of geographic alignment has been the strong focus of IFAD work in recent years on ethnic minority areas.

4. IFAD has built up substantial experiences in China through project and thematic evaluations and impact assessments since 1981. The key lessons learnt from previous and on-going projects include:

- i) The use of project leading groups (PLGs), project management offices (PMOs) and village implementing groups (VIGs) ensures effective inter-agency coordination and timely implementation, as well as promote beneficiary participation in project activities;
- ii) Targeting approaches of projects are effective but targeting during implementation needs to be improved in some cases. Project areas were selected on the basis of poverty incidence and vulnerability analyses. Village implementing groups (VIGs) make good contributions to the targeting at household level. Activities were tailored to the capabilities and needs of the poor. These have resulted in an effective channelling of resources to the rural poor;
- iii) IFAD-funded projects were designed and implemented along a gender-sensitive, integrated rural development approach. Project impact on women's social and economic empowerment has been repeatedly confirmed in impact assessments;
- iv) Close monitoring of rural infrastructure is required during implementation to ensure designs are correctly executed, which is why follow-up during implementation is more important than providing international expertise during formulation;
- v) Experience with agricultural infrastructure to improve water and soil management has been instrumental in ensuring better water harvesting, flood control, irrigation support, and land development with terracing and fertilization, which in turn effectively contributed to reducing erosion and the risk of natural disasters;
- vi) To create more awareness of infrastructure viability and environmental impact, local user groups and VIGs should be consulted to identify major issues and provide training in the maintenance and repair of infrastructures;
- vii) IFAD together with the World Food Programme (WFP) has successfully invested in community infrastructure, including irrigation, drinking water supply facilities and village roads. These activities contribute to the increased land productivity and improved livelihoods of the rural poor;
- viii) IFAD projects have promoted decentralised community approaches by applying participatory planning. This approach works well and it is up-scaled by the Government in the formulation of the national poverty reduction strategy;
- ix) Under the environment of a strong economic growth, it has been found necessary to design projects in the way that enough flexibility should remain with local project management offices during implementation, which would avoid rigid interpretation of project design documents. An advance in project operations showing good potential is the introduction of a modular approach to project management;
- x) Close collaboration among all stakeholders in project planning and implementation is crucial for the success of project implementation, so is the adequate and appropriate staffing of local project management offices, particularly at county level;
- xi) The emergence of farmer cooperatives in China is a pivotal opportunity. However, important lessons have been drawn on working with these organizations: (i) Resources channelled to and through them should remain small and carefully targeted if the organizations were put at the centre of project approach; (ii) careful and strict monitoring and evaluation is necessary; (iii) eligibility, transparency, commitment, and participatory procedure of internal management are the core criteria for the selection of existing farmer cooperatives to be included in projects.

## ANNEX 4. DETAILED PROJECT DESCRIPTION

### i. Component A: Community infrastructure development

1. The purpose of the community infrastructure development component is to enhance the living and production conditions for rural men and women, by developing community infrastructure including irrigation facilities, village roads, and drinking water supply facilities. These activities will be critical for the project area to strengthen the community resilience to frequently-occurring calamities caused by extreme weather conditions, to improve the access of the rural poor to markets, information and technical services, and to develop commercialized production of agriculture, which are all regarded as effective measures for rural development and poverty reduction at the current stage. Project interventions under this component include: (i) the improvement of irrigation facilities, mainly the lining of existing tertiary and secondary irrigation earthen canals; (ii) construction of community facilities of safe drinking water supply; (iii) paving of existing village roads with concrete, both connecting to “administrative” villages and their constituent “natural” (smaller and scattered) villages. Training of beneficiaries for the operation and maintenance of the project-built civil works will also be supported by the project. Implementation responsibility of this component will rest with the Bureau of Water Resources and the Bureau of Transportation at county level.

2. **Irrigation facilities:** The project will support irrigation canal lining to improve farmland productivity. This activity will enhance the capability of beneficiaries in resisting frequently-occurring climate related calamities and creating conditions for diversification and commercialized production of agriculture in the project area. It will involve the lining of 233 km lateral (tertiary) and 81.5 km branch (secondary) existing irrigation earthen canals. The priority for project support is given to the lining of lateral canals connecting with the fields of farmer households. In order to enhance the resilience of beneficiaries to face risks due to climate change, irrigation development will be accompanied by beneficiary training, for the application of water-saving irrigation techniques and the sustainable operation and maintenance of the works. Implementation of these project activities will remain with the Bureau of Water Resources at county level. Its responsibilities will include, inter alias, (i) the identification of eligible villages suitable for carrying out the activities, with given criteria; (ii) detail design of the works by site; (iii) organising the civil works; (iv) training of beneficiaries; (v) facilitating the formation of interest groups or water users’ associations (groups) for the operation and maintenance of project works.

3. It would be ensured that effective farmer participation in training and capacity building so as to enhance ownership of the created irrigation facilities. This would be achieved by involving farmers right from survey and design stage, during construction of canal lining and planning of irrigation schedules on the basis of improvement. The water users associations (WUAs) or groups would be encouraged to organise peer-to-peer workshops on water management issues, exchange visits to other areas and facilitate visits by experienced farmers and managers from well-performing irrigation schemes as tools for training.

4. Training and capacity building would focus on strengthening O&M management and these would include improving irrigation delivery, leadership qualities and allocation of responsibilities between WUA committees and water user groups, internal regulations and monitoring. Emphasis of the training would be both on BOWR staff at township and county levels and farmer leaders. The guidelines developed by the Provincial Department of Water Resources accordance to Chinese water law would be used as overall guidance.

5. Cost estimates are based on details provided by the respective county Bureau of Water Resources. Construction costs vary between counties considerably. Unit cost estimates are based on type estimates and rate analysis for each such type estimate. These are not location specific and may vary at the time of implementation. Cost estimates for canal lining vary between CNY 212700/km and 340,000/km for branch canals, CNY 137,000/km and CNY 280,000/km for the lateral canals. Cost of training has been assumed at CNY 15 per person and this includes training material, trainer fees, transport etc. It is one-day training and will be organised at village level. Cost of operation and maintenance of the completed facilities will be provided by water users and it has been assumed at CNY 150/ha/year.

| Item                            | Units          | Unit cost<br>(CNY) | Total Cost<br>(000 CNY) 1/ | IFAD financing<br>rule |
|---------------------------------|----------------|--------------------|----------------------------|------------------------|
| <b>Canal lining:</b>            |                |                    |                            |                        |
| Branch canal                    | 81.5 km        | 252,991            | 22,254                     | 40%                    |
| Lateral canal                   | 233.0 km       | 175,407            | 44,829                     | 40%                    |
| Training                        | 78,183 persons | 15                 | 1,280                      | 100%                   |
| O&M                             | 14,939 km      | 150                | 2,440                      | beneficiary            |
| <b>Total</b>                    |                |                    | <b>70,803</b>              | -                      |
| 1/ cost including contingencies |                |                    |                            |                        |

6. Irrigation improvement will benefit some 46,097 households cultivating 5,229 ha. Due to improved water deliveries and better on-farm water management practices, productivity will increase in the range between 10 and 15% over existing yields. This is because the project activities will ensure irrigated crops that still suffer from significant water stress due to poor water management on the current irrigation schemes will now be able to fulfil their water needs to a higher degree.

7. Mostly rice crops are grown on the irrigated lands and irrigation intensity averaging 150%. Secondly, because of improved water delivery, effective water controls and use of turn system of irrigation, on-farm labour requirement for irrigation will reduce by 25 to 35%. Improved irrigation infrastructure will help combat the impact of climate change. With increased production, participating household's income would increase but marginally.

8. **Village roads.** Poor technical capacity and lack of market information have often been cited as main constraints to enhancing agricultural productivity. Farmers residing in villages without appropriate road connection invariably use foot-trails and even these links become difficult to use during the rainy season. The project will provide support for the construction of village roads in order to improve the access of the rural poor to markets, information and technical services. This intervention will include the pavement of existing earthen roads of bad conditions with concrete, which connect administrative villages or natural villages to the outside road network, i.e. 383.5 km administrative village roads and 80.8 km natural village roads. The Bureau of Transportation at county level will assume the responsibility of implementation. Its responsibilities include: inter alia, (i) the identification of eligible villages suitable for carrying out the activities, with given criteria; (ii) detail design of the works by site; (iii) organising the construction of works; and (iv) facilitate the formation of interest group for the operation and maintenance of project works. Measures needed to avoid/mitigate potential negative environmental impact include, among things, assessment of environmental impact before implementation, the protection of trees and vegetation, and adoption of environmental-friendly practices during construction.

9. The administrative village roads will be constructed to conform to Grade 4 type of road specifications and it will have 6 m formation width and a 4.5 m wide and 20 cm thick concrete pavement. On either side, the pavement will have a 75 cm shoulder. The thickness of pavement will be about 20 cm over a 10 cm thick gravel sub-base. In all, some 383.3 km of roads are proposed to be improved in all 8 counties. The natural village roads that are selected for paving will have 5 m formation width, 3.5 m road width and 50 cm of shoulder on either side of the pavement. Thickness of pavement will be 18 cm over 8 cm thick gravel sub-base. Both road types will have a 2% cross-slope to ensure effective drainage. Side drains would be constructed using standards and in accordance with the terrain conditions. The road construction work is carried out on existing road alignments and no new alignment is excavated or constructed.

10. Road construction activity of natural villages would be carried out in five counties, namely, Longzhou, Leye, Beilui, Youngfu and Pingle. Each direct beneficial village would select minimal management persons, at least one person for every 5 km of improved road for the purposes of training. The cost of operation and maintenance of all natural village roads will be borne by the respective village community.

11. Cost estimates were based on data provided by respective counties and updated at design completion mission. All unit costs are projected to 2012 January prices and exclude price and physical contingencies but include contractors' margin of about 10%. But the counties informed that due price rises, the costs may go up. In case of village roads, unit costs vary greatly: between CNY426500/km and CNY 605,000/km. The mission discussed the implications of these costs with the respective county bureau and satisfied itself with the rationale behind such variations, such as long haul of transporting construction materials and equipment, rough terrain conditions and poor access

to most of the construction sites. Unit costs of natural village roads ranges between CNY 210,000 and CNY 507,200 per km. All unit costs are based on type estimates and are not location specific.

| Item                  | Units    | Unit cost<br>(CNY) | Total Cost<br>(000 CNY) 1/ | IFAD financing<br>rule |
|-----------------------|----------|--------------------|----------------------------|------------------------|
| Village Roads         | 383.3 km | 463,143            | 194,511                    | 40%                    |
| Natural Village roads | 80.8 km  | 289,592            | 25,373                     | 40%                    |
| O&M                   | 1341 km  | 2,000              | 2,918                      | 0%                     |
| <b>Total</b>          |          | -                  | 222,802                    | -                      |

1/ cost including contingencies;

12. Construction of village roads will benefit some 67,043 households distributed over 150 administrative villages falling in 39 townships. Direct benefits are reduction in transport costs of agricultural inputs and outputs resulting in enhanced margins to the farmers. This margin may range between 5% and 10% depending up on the type of commodity. For want of reliable data and information, benefits accruing from road construction have not been taken into analysis.

13. **Safe drinking water supply.** This intervention is to improve the access of the rural poor to the sources of safe drinking water through building 69 collective drinking water supply systems in villages which currently have difficult access to the sources of safe drinking water. This is further strengthened with trainings to the water user groups and beneficiaries in order to ensure sustainability. Implementation of these activities will rest with the Bureau of Water Resources at county level. Its responsibilities will include: inter alia, (i) the identification of eligible villages suitable for carrying out the activities, with given criteria; (ii) the detail design of the works by site; (iii) organising the construction of drinking water supply systems; (iv) facilitating the formation of interest groups; and (v) training the interest groups and beneficiaries for sustainable operation and maintenance of the works. Measures needed to avoid/mitigate potential negative environmental impact include, among things, trainings on water saving awareness of beneficiaries, installation of water consumption metering system, and adoption of environmental-friendly practices during construction.

14. Criteria for selection of villages will include (i) Villages that have high proportion of poor population within the township; (ii) Availability of water resources; (iii) Demands originate from potential beneficiaries for collective drinking water supply; (iv) Commitment of beneficiaries for O&M of the completed schemes. With selected villages inclusive approach at village level would be applied but priorities given to the access of poor and ethnic minority households.

15. The intervention will have two activities: (i) Construction of community safe drinking water supply system and (ii) technical training to the whole households in O&M procedures and processes.

- ◆ Community Drinking Water Supply System: This includes construction of large water storage tanks, facilities for filtration, clearing equipment, high elevation water towers, pumps, pipe line system including the main delivery pipes, branch lines, the water control assemblies and distribution pipes to each household including water measuring devices, water taps etc. In all 69 such systems are proposed to be constructed in all counties except Leye and Duan.
- ◆ Training: Prior to training water user groups for the purposes of operation and maintenance would be established. The training of the water users would includes aspects relating to water saving measures, volumetric measurement of water, methods of calculation of water charges, O&M and responsibility-sharing, collection of water samples for detailed chemical analysis, maintenance of equipment etc. These trainings will be organised at respective villages and on participatory basis. All households are expected to participate in such training. Special training would also be organised for village committees that are entrusted with the tasks of O&M. At least 60% of participants should be women.

16. The unit cost of the safe water supply systems ranged between CNY 150,000/system and CNY 1,100,000/system. For the construction of pipe distribution system, unit cost ranged between CNY 16,745/km and 76,500/km. For the distribution pipeline, unit costs vary between CNY 16,745 and CNY 76,500. A drinking water supply system has two major items: headwork at water source and it includes large capacity of water storage, filter, clearing equipment, high elevation water tower, pumping station and so on. Other is the pipe line system and this includes main delivery pipes and laterals, and distribution pipes to each household. As it is difficult to separate these two items of work, only two counties, Longzhou and Tengxian have provided separate estimates. All costs are type estimates and based on detailed rate analysis. Cost of training has been assumed at CNY 15 per

household and in all some 66,896 households would be provided training. This cost is inclusive of materials, trainers' fee and transport. Training will be organised at respective villages.

| Item                            | Units             | Unit cost<br>(CNY) | Total Cost<br>(000 CNY) 1/ | IFAD financing<br>rule |
|---------------------------------|-------------------|--------------------|----------------------------|------------------------|
| <u>Rural water supply:</u>      |                   |                    |                            |                        |
| Village collective system       | 69 sets           | 579,461            | 44,022                     | 40%                    |
| Pipeline systems                | 90.5 km           | 56,362             | 5,637                      | 40%                    |
| Training                        | 67,084 persons    | 15                 | 1,098                      | 100%                   |
| O&M of system                   | 66,896 households | 240                | 17,537                     | beneficiary            |
| <b>Total</b>                    | -                 | -                  | <b>68,294</b>              | -                      |
| 1/ cost including contingencies |                   |                    |                            |                        |

17. With the completion of the 69 safe water supply systems, some 17,499 households will be directly benefited. Due to improvement in quality, overall health conditions of the people will improve, in particular the children. Women will save time due to drudgery reduction which can be used for productive purposes and looking after the welfare of the house. At least, some 69 water user groups at village level will be set up and trained to look after the O&M of the completed facilities. There will be considerable reduction in the control of water-related diseases but these are not quantified.

## ii. Component B: Agricultural production and marketing support

18. This component aims to increase rural household cash income through improving the access of poor women and men to technical services, developing niche/cash crops and landrace livestock, and enhancing the value chain of major commodities from production to marketing. It covers five modules, namely annual cash crops production, perennial cash crops, improvement of township agricultural stations, landrace livestock development, and support to farmer cooperatives, as well as two complementary packages including an institutional support and a value chain enhancement. More details for the former four modules and the institutional support package are presented in Working Paper 2 and that for the last module and the value chain enhancement package in Working Paper 3.

19. **Annual/Perennial cash crops production (Modules 1&2).** The annual and perennial cash crop production modules follow the overall project strategy of addressing rural poverty issues through an integrated approach. Both modules will increase the cash income of farmers by developing niche and cash crops to diversify agricultural activities in the project area. These two modules are presented in tandem because of similarities in their approaches and activities though they have different costs. Each module will include three activities: (i) field demonstrations, (ii) scaling-up, and (iii) beneficiary training with updated technologies. Both modules are built on field demonstrations on 10 hectares and scaling-up of 100 hectares for the development of niche/cash crops. The scale of demonstration and scaling-up is determined by taking into account the dispersal characteristics of the poor and vulnerable farmer households in villages. Technical training for beneficiaries with new and improved technologies will be provided to match with the demonstration and scaling-up activities. The modules' implementation will last for two years. Synergistic effects will be expected by linking these modules with the activities under the community infrastructure and marketing support components of the project during implementation.

20. Both modules are tailored to the capacity of the rural poor women and men. During their implementation priority will be given to the poor and vulnerable households, as well as the female-headed households, although the better-off households in the communities will not be excluded. Farmers in the project villages will be encouraged to group themselves together for commercialized production of quality products, through for example processing and branding, in order to enter more remunerative markets.

21. Activities designed for each of the modules are inter-related as a package for implementation, which include the following:

- (a) Demonstration: support to target households would include improved planting materials to boost production or establish new production, and essential materials such as fertilizer, plastic film, field plastic irrigation pipelines, depending the actual needs of a particular crop;
- (b) Scaling-up: support to target households would include improved planting materials to boost production or establish new production;
- (c) Beneficiaries training: most of eligible households need to access techniques for production

and management of niche and cash crops even though some of them have some experiences. Provision of technical training to beneficiaries would be crucial to the improvement of management skills to achieve the expected results. Technical training, among other things, will particularly include IPM and the use of farm manure in order to reduce the application of agro-chemicals, awareness building about the impact of climate change on farm production and water-saving irrigation in crop production and adoption of conservation agriculture as measure of coping with climate change. Technically outstanding farmers in the demonstration and scaling-up activities will get special attention of the township agricultural extension stations for more training to become farmer technicians to enhance farmer-to-farmer extension and grassroots extension network.

1. Estimated cost for the annual crop module is CNY 1.04 million, consisting of CNY165,000 for demonstrations, CNY 750,000 for scaling-up and CNY 125,000 for beneficiary training. The unit cost of perennial crop module is estimated at CNY 2.8 million, consisting of CNY 450,000 for demonstrations, CNY 2,250,000 for scaling-up and CNY 100,000 for beneficiary training. Totally 13 annual crop modules and 24 perennial crop modules are projected. Implementation of all activities under both modules will be jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%). In addition, beneficiary labour contribution will be about CNY 570,000 for a unit of annual crop module and CNY 1 million for a perennial crop module, which is not accounted in project costing due to its accountability and practical considerations in project implementation. In accordance with the project framework and the procurement procedures of IFAD and/or GOC, the IAs will procure farm inputs required to carry out module activities, including seeds/seedlings/planting materials, fertilizers and others such as plastic film and insect traps and then distribute to the beneficiary farmer households to undertake demonstration and scaling-up activities of the modules. The IAs and the township extension stations will provide the required technical training to farmers who participated in the module activities. Besides technical training, awareness building about coping with climate change and its impact on farm production, water-saving irrigation, adoption of drought resistance crop varieties and conservation agricultural practices will be included. The IA will monitor and report the technical performance of the module activities to the CPMO at the end of a production cycle.

22. Implementation of both modules will remain with the Bureau of Agriculture (BOA) at county level. Its responsibilities will include: (i) the identification of eligible villages with given criteria; (ii) identification of target households for carrying out the modules; (iii) adjustment of the modules to fit local conditions in line with given criteria; (iii) technical support and follow-up services to beneficiaries on module activities; (iv) facilitating the formation of beneficiary groups by trade and linking them with relevant farmer cooperatives, or facilitating the establishment and operation of new farmer cooperatives wherever no cooperative is reachable by the beneficiaries, if needed. Environmental-friendly farming practices, including reduction of chemicals and fertilizers and organic farming will be recommended to avoid/mitigate potential negative environmental impact.

23. **Landrace livestock development (Module 3).** This module is to support the rural poor women and men to extend their income sources through the demonstration and development of landrace animals for which there is a strong market demand in the country. Project support will include the improvement of animal-sheds, breeding stock, feedstuff, and beneficiary training. The module is household-based and it will be implemented within one year. Similar to modules 1&2, this module is tailored to the capability of rural poor women and men. Its implementation will give priority to the poor and vulnerable households, as well as the female-headed households.

24. The principles of inclusive targeting strategy of the project apply to the module. At village level, the criteria include villages that have high proportion of poor and vulnerable and ethnic minority population within the township; villages that have conditions for carrying out the project activities; potential beneficiaries, particularly women, have strong interest in participating in the designed project activities; regarding agricultural and livestock production, villages that have higher potentials for demonstrating higher value agricultural and livestock products with linking to remunerative markets.

25. Detail activities of the module includes the followings:

- ◆ Materials: the project would support the target households to rehabilitate or build livestock shed or poultry production facilities to carry out module activities, on demand-driven basis;
- ◆ Breeding stock: the project would support target households to acquire breeding stock of livestock or chicks;



- ◆ Feedstuff: project support would also include the costs of feedstuff, either for production or from purchase;
- ◆ Beneficiaries training: technical training and services would be provided to the target households, including production and management techniques, epidemic prevention and diseases control knowledge, and waste management will be an important of component of training, which would be crucial for achieving the expected results.

26. The unit cost of the module is estimated at CNY 40,160 and totally 320 modules are projected. Implementation of all activities under this module will be jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%). On top of that, beneficiary labour contribution will be CNY 1,200, which is not accounted in the costing of the project due to its accountability and practicality in project management. With the coordination, cooperation and support of the CMPO, the BOLs of relevant project counties will be the IA of the module activities, with support of the township stations. Field assessment confirms that the BOL has adequate technical competence in the implementing the module activities.

27. Implementation of the module will rest with the Bureau of Livestock (BOL) at county level. Its responsibilities will include: (i) the identification of eligible villages with given criteria; (ii) identification of eligible households for carrying out the module; (iii) adjustment of the modules to fit local conditions in line with given criteria; (iii) technical support and follow-up services to beneficiaries on module activities; (iv) facilitating the formation of beneficiary group by trade and linking them with relevant farmer cooperatives, or facilitating the establishment and operation of new farmer cooperatives wherever no cooperative is reachable by the beneficiaries, if needed. Synergistic effects are foreseen by linking this module with the Support to Farmer Cooperative Module during implementation, where ever applicable. Improved livestock breeds and minimizing rangeland grazing will be recommended to avoid/mitigate potential negative environmental impact.

**28. Improvement of township agricultural stations (Module 4).** This module is designed to improve the access of rural women and men to improved technologies and techniques, plus timely information, through the improvement of the grassroots agricultural extension services network and by enhancing the capacity and effectiveness of service delivery. It will contribute to increasing farmers' income through increased adoption rates of new technologies and diversified agricultural activities. The module is built by taking one township of average size as a basic unit. For planning purpose, the project will support 18 project townships to improve their existing agricultural stations over the life of the project. Implementation period of the module will be one year. Module activities will include: (i) civil works for office, training room, consultation room and simple laboratory and display spaces; (ii) provision of technical and training equipment including office equipment, practical and handy laboratory instruments and tools, training equipment, and a motorbike; and (iii) provision of office and training-room furniture.

29. Unit cost of the module is estimated at CNY 0.5 million and 18 modules are projected. Implementation of all activities under this module will be jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%).

30. Implementation of the module will focus on the project townships with a high proportion of poor and vulnerable farmer households, which are undergoing a reorganization process to regain autonomy of technical services but have no appropriate office and training spaces, technical equipment and essential tools for service delivery. Priority will be given to those project townships located in remote, mountainous and ethnic minority areas. The responsibility of module implementation will remain with the Bureau of Agriculture at county level under the coordination of PMO. Its responsibilities include, *inter alia*, the identification of eligible townships, adjustment of the module to fit local conditions in line with given criteria, procurement of civil works and equipment, and technical support to the target townships on other module-related activities.

31. The total cost of the module is estimated at CNY 0.5 million to be funded jointly by IFAD loan proceeds and counterpart funding of GOC. With the coordination and support of the PPMO and the CPMOs, the BOAs in relevant counties as the implementing agencies of the module will plan the implementation of the module through the AWPB process and procure the design, construction, construction supervision, internal decoration and completion acceptance inspection of the building, following relevant procurement procedures of IFAD and/or GOC; similarly, the IAs will procure the required equipment, facilities and instruments for the selected townships. The CPMO will reimburse



the costs of the module implementation to the IAs in accordance with relevant financial management stipulations of the project.

32. The total number of township extension stations to be supported by the project is 18 and a total number of roughly 132,000 farmer households will have access to enhanced extension services as a result of module implementation in the project area. The number of farmers who will benefit from the module implementation is estimated to be 158,000, of whom, women would be no less than 55%.

**33. Institutional support package.** Objectives of the institutional support activities are to improve the effectiveness of grassroots extension networks and increase the access of the rural poor to new crop varieties, updated technologies, and improved technical services. Given that the Bureaux of Agriculture at county level are playing vital roles in backing-up the extension agents at township and village levels on the technical delivery to farmers in the project area, the project will provide support to improving their service conditions and capacity in 5 project counties through the building of technical training centres and the provision of essential equipment and furniture in counties which are yet to have appropriate conditions to undertake their duties. Project support under this package will also include updated trainings for technical staff at county, township and village levels and crop experiments on new technologies and varieties. The area for the civil works of training centres and the types of equipment and furniture will be determined by the involved counties to meet their minimum requirements for achieving the objectives, with subject to the approval of PPMO. Implementation of these activities will be undertaken by the Bureau of Agriculture at county level, under the coordination of CPMO.

34. Based on the discussions with BOAs and PPMO, an average lump sum unit cost of the county technical training centre is estimated at CNY 2.7 million based on 1,800 m<sup>2</sup> floor space including classrooms, offices, library, dining and dormitory for trainees. Equipment and furniture would include audio and video equipment for classrooms, office equipment and some instructional aids and tools, as well as classroom and office furniture. Prior to implementation of activity, adjustment would be needed to reflect the actual needs of the selected counties and the cost of construction materials.

35. The average cost of this package for each county is estimated at about CNY 2.86 million. The construction of training centre will be jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%), equipment and furniture by the IFAD loan proceeds (80%) and counterpart funding of GOC (10%), crop trials and staff training 100% financed by the IFAD loan proceeds.

**36. Support to farmer cooperatives (Module 5).** This module is to assist the rural poor and vulnerable households, especially the women in these households, entering the value chain of major commodities with remunerative markets, which will help increase their production and marketing efficiency and thereby gain value added. The targeted women and men will improve their social and economic status by joining the local farmers' cooperatives where these exist. Their improved competence will help increase their share of the total generated value, gaining capacity and equitable opportunities in self-organization for sustainable community development. Project support will be provided to eligible cooperatives under the activities foreseen to strengthen the inclusion of poor households and women so as to increase their access to new techniques and know-how, improved marketing linkages and trade promotion, and by provision of office equipment. The expected outcomes should be highlighted by members' increased premium share in the value chain, and the improvement of the cooperatives' sustainable service capacities in technical support and provision of market information to their members.

37. The average unit cost of the module is estimated at CNY 215,000 and totally 44 modules are projected. Implementation of all activities under this module will be jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%).

38. Candidate farmers' cooperatives should have the following characteristics: (i) be based in project townships or villages, with multi-village membership; (ii) accept necessary cooperative principles and values; (iii) be legally registered with the local bureaux of Industry and Commerce or Civil Affairs, or be willing to be assisted to do so; (iv) have established some market linkages with processors, wholesalers or retailers; (v) Strong leadership in applying quality standards of farm processing and cooperative marketing; (vi) commitment to systematically recruit the household members of the poor and vulnerable as members and applying tailor-made technical coaching for their integration; and (vii) willing to receive the support of local technical service providers.

39. Project townships and villages without existing farmers' cooperatives of such profile but with market linkage potential can be considered for establishment of new cooperatives as recipients of the module support. Villages active in implementing project production modules will be given priority for forming new cooperatives as recipients of this module. In addition to the above-mentioned conditions of (i) to (vii), there should be strong signs of mutual assistance among the target households that participate in some quality farm processing for farm and livestock produce.

40. The selected existing or newly established cooperatives will be used as project medium to reach out to the target poor and women. The economically active poor households will be systematically mainstreamed into the cooperative and take part in the value chain. Project support will assist the recipient cooperatives to embed member services in production, marketing, market information, and other member services that add value to the institutional capacity building of the cooperatives. In return, the cooperatives will be committed to recruit the economically active poor men and women as members, providing technical coaching for their social and economic integration. As a platform for mainstreaming the poor and women into the value chain, the cooperatives will help members to improve the processing quality at the farm level, specialise or diversify in their farm production in accordance with the market demands, accessing to niche or mass markets with better profit margin.

41. The module will be implemented over a period of two years. The Bureau of Agriculture at county level will assume the overall responsibility for the module implementation. Its responsibilities will include, *inter alia*, the identification of eligible farmer cooperatives with given criteria; adjustment of the module to fit actual situations with given criteria; overseeing the operation of supported cooperatives in accordance with the module's implementation requirements; and support to the target cooperatives on other module-related activities. Implementation of the module will closely link with the cash crops and landrace livestock modules for synergistic effects and leverage from the project-supported productive assets.

42. By the end of the project, participating cooperatives should be able to provide market-driven services to their members, capable of improving market access for the small farmers and improving their skills as entrepreneurs to engage as value chain actors. It is expected that more than 14,000 households will directly benefit from the module. Members classified as poor at admission will increase from 16% at design to 27%, women membership from 29% to 38%. The target clientele will gain capacity and equitable opportunities of participation in cooperative development, taking part in the collective ownership of a grassroots organization that is service-driven with poverty and gender sensibility. Meanwhile, their premium share should increase from the average 5% to 10 or 15% through cooperative farming and marketing.

43. *Scaling up strategy.* It is important that cooperatives continue to develop after the GIADP is completed. The participatory development of a strategic plan for each cooperative at the start of the project, and its periodic updating thereafter will assist this process, both as regards the "business activities" that provide income, and the social inclusion objectives that constitute the basis for project support. In addition, the requirement for a business plan that justifies provision of support for the investments made in value chain enhancement facilities will ensure that only viable, sustainable investment are supported, and that these will expand in scale over time in line with increasing market demand.

44. **Value chain enhancement package.** The objective is to help supported cooperatives, rural micro and small enterprises and individual smallholders move up the value chain and therefore access to opportunities of better profit margins. Farmers in the project area currently sell their products mostly in the primary and unprocessed forms for low profit margins and the cooperatives will help them achieve some economies of scale, opening up opportunities for higher margins; the negotiation dynamics along the value chain may change in favour of the cooperatives and their members only when they are able to decide what kinds of processed products they will offer to the markets, and the transformation capacity is owned or controlled by themselves. Currently, cooperatives and individual smallholders lose a substantial part of their products that are mostly perishable, due to the volatile storage facilities and their dependence on storage and trading locations controlled by external brokers and buyers. Improvements in capacities of processing, storage, packing and packaging, transport and accessible trading locations will help gain additional profit margins for the cooperatives and smallholders supported by the project, there-by providing a more attractive profile of strengthened economic capacities of the project counties in the context of investment consideration and local competitiveness.

45. The project support will include the provision of value-adding facilities, which serve as improving production quality, processing or semi-processing, storage or packaging that help increase the profit margin and move up the value chain, and the building of local markets in selected township centres to help incorporate the farm-gate market into the trade arena, especially to connect to the county-level terminal markets. The project will not support the construction of basic-level or aggregate markets, but only cooperative spots and wholesale markets in order to enliven the trade with external buyers.

46. The total costs for this package are estimated at about CNY 38.16 million, including CNY 23.63 million for value-added facilities and CNY 14.53 million for construction of markets. Both activities will be jointly financed by the IFAD loan proceeds (75%) and counterpart funding of GOC (25%).

47. In addition to the characteristics mentioned for the identification of candidate cooperatives under the module of support to farmer cooperatives, selection of recipient cooperatives and micro/small enterprises for the support of value-adding facilities should be typically engaged in marketing products of primary and unprocessed forms. It is suggested that as a condition of accessing project support – for both grant and loan finance - cooperatives are required to prepare a simple business plan (including a marketing plan) that justifies the commercial potential of the investment and presents analysis that the return on the investment will be at least 20% for the product/business line(s) that directly benefit from the investment (i.e. not for the cooperative as a whole, as they may have additional non-related activities that remain unchanged). Training and support for this may be required from the county PMOs. A business plan requirement will act as a further filter to prevent cooperatives from taking grants/ loans for activities with little prospect for long-term sustainability (see below) and thus will act to maximise the chances of post-project viability for these investments and the business activities that they make possible.

48. The county BOA will ensure the overall responsibility of the package implementation. It will operate along the following: (i) overseeing the recipients of value-adding facility support and assisting them in the process of procurement of goods and services, organization of M&M and equitable use by target groups such as the poor and the vulnerable, and women members; (ii) identifying, proposing and supervising the management bodies for the markets built by the project; (iii) reporting on the package support to the CPMO.

### iii. Component C: Rural environment improvement

49. This component aims at improving the rural community environment of project areas by developing alternative clean energy and piloting village sanitation improvement approaches, incorporating government activities on building the new socialist countryside and “*Xiaokang*” society. It covers two modules, namely biogas system and village sanitation improvement. Detailed descriptions of the modules and their activities are presented in Working Paper 4.

50. **Biogas system (Module 6).** This module will improve the rural environment and sanitation by reducing the dependence of rural households on firewood for cooking and introducing environmentally-friendly practices of animal and human waste management, while promoting the development of rural renewable energy and reducing the burden of rural women. Module activities will include the construction of a household-based biogas digester, renovation of the household’s kitchen, toilet and animal-shed, and beneficiary training on the operation and maintenance of the biogas system. Training on the use of biogas digester slurries for ecological farming will be incorporated into the training activities of beneficiaries. Module implementation will be jointly financed by the IFAD loan proceeds (70%), counterpart funding of GOC (10%) and beneficiary contribution (20%). Cost of operations and maintenance of the biogas system will be fully born by the respective households.

51. Cost for one biogas module is estimated at CNY 6,120. Being an average estimation, cost may vary between counties and villages due to various factors such as cost of transport, materials and labour and cost of training etc. Unit cost also includes the cost of unskilled labour provided by the households and it has been estimated at CNY 1,220/module and this has been shown as contribution by household to the investment cost of a module. (See Annex 1 for details). Item-wise costs are described below.

- Volume of a biogas digester will be 8 m<sup>3</sup> and is constructed in concrete. The unit cost for a standard biogas digester is determined by the cost of construction materials, and man-day labours. A lump sum estimation is 3,100 CNY per digester including labour costs;

- Cost of latrine renovation is determined by the cost of connecting pipes to biogas digester, ceramic WC pan, ceramic wall and floor tiles, lamp and ventilator, and man-day labour. A lump sum estimation of 920 CNY per latrine has been assumed;
- Cost of kitchen improvement is determined by the cost of the stable top of a kitchen range, ceramic tiles, concrete work for kitchen floor and labour days. A lump sum estimation is 1000 CNY per work;
- Cost of livestock shed renovation is assumed at 1,000 CNY per shed;
- It is assumed that 2 persons from each household will participate in the training provided by the project in operation and maintenance. The cost of training has been assumed at 50 CNY/person.

52. The module will be implemented within a period of one year. Module implementation will closely link with Module 7 below, village sanitation improvement, for synergistic effect and piloting purpose. The county Rural Energy Office (REO) will assume the responsibility of module implementation. It will procure competent technicians to carry out specific works of biogas digester construction and organise the procurement of required materials, following the procurement procedures of IFAD and/or GOC for distribution among the eligible farmer households to undertake the design activities of the module. Responsibilities of the REO will include, among other things, (i) the identification of eligible villages and households with given criteria; (ii) adjustment of the module to fit local conditions; (iii) implementation of module activities; (iv) training of beneficiaries; (v) technical support and follow-up services to beneficiaries; (vi) support to the beneficiaries on other module-related activities; and (vii) organisation of quality check for completion acceptance.

53. **Village sanitation improvement (Module 7).** This module aims at piloting an innovative approach to improve the sanitary conditions of rural habitats. It will contribute to enhancing the awareness of rural inhabitants about their living environment and consequently their health status, while adding value to the governmental programs and objectives of building a “new socialist countryside” and “*Xiaokang*” society. Its main activities include sewer construction, wastewater septic tanks, separate garbage collection, construction of drainage ditches, upgrading the village tracks, and beneficiary training. Module implementation is jointly financed by the IFAD loan proceeds (70%) and counterpart funding of GOC (30%).

54. The module is “natural” village-based and it will be implemented over a period of two years. Module implementation will closely link with Module 6, biogas system, for synergistic effect and piloting purpose. The Bureau of Agriculture (BOA) at county level will assume the responsibility of module implementation. BOA will procure the works of the construction of sewer, water wastewater septic tank, garbage collection station, drainage ditches and tracks of natural villages, following the procurement procedures of IFAD and/or GOC. Where necessary, the BOA will call on the technical inputs of other relevant government bureaux for the implementation of the module activities. The responsibilities of BOA will include, among other things, (i) the identification of eligible villages with given criteria; (ii) adjustment of the module to fit local conditions; (iii) implementation of module activities; (iv) organisation of quality check for completion acceptance; (v) training of beneficiaries; (vi) technical support and follow-up services to beneficiaries; and (vii) support to the beneficiaries on other module-related activities.

2. The criteria for the selection of villages are (i) villages that have high proportion of poor and/or ethnic minority population within the selected township; (ii) villages where potential beneficiaries are interested in piloting rural environment improvement activities; and (iii) there are strong signs of beneficiary commitment for O&M of completed facilities.

3. Specific activities of this module are as follows:

- Sewer construction. Public sewer will be used to connect and discharge the effluent discharges from individual household and transfer the wastewater to the community- septic tanks. Sewer diameter can be between 100 and 200 mm. The open channels with cover slab could also be used but according to the local condition.
- Wastewater septic tanks. This activity is to build village-based septic tanks for wastewater and for primary treatment, which could eliminate about 60% of BOD and the suspended particles. For the more populated communities, 50 m<sup>3</sup> three-chamber septic tanks can be designed and constructed. For the scattered communities in the hilly regions, 3 or 5 3-chamber septic tanks can be built but the volume could be smaller than 50 m<sup>3</sup>. Size and

capacity of septic tanks would be decided on the basis of detailed survey and in consultation with the village implementation groups.

- Garbage collection station. Garbage collection chambers in the villages will be constructed. For source control and garbage reduction, 4-chambers of garbage collection station can be constructed for non-recyclable wastes, organic wastes, recyclable materials and collection of hazardous materials such as pesticide bottles. The volumes of four chambers are 10 m<sup>3</sup>, 6 m<sup>3</sup>, 6 m<sup>3</sup> and 6 m<sup>3</sup> respectively. Number of the garbage collection station depends on the scale of the project village.
- Drainage ditches. Storm water runoffs could be discharged with open, grass-covered shallow ditches, which could hold the runoff in the ditch for relatively long time to reduce the peak flows. If the space is limited in the project village, open channel structure could be used.
- Inner-village track construction. To improve the environment and reduce the difficulty of transportation, the tracks in the inner villages will be renovated and improved. Normally, the track should be 3.5 meter wide and constructed of concrete. The widths of the tracks would be decided based on the local geographic conditions and demands of the people.
- Training. The training for the villagers and VIG includes capacity building, knowledge transfer, operation and maintenance, etc in order that the village sanitation improvement module could be constructed and maintained properly.

#### **iv. Component D: Project management**

55. Project management will include the establishment and operation of project management offices (PMOs) at provincial, county and township levels. Project implementation will be substantially decentralised to the county PMOs, with the provincial PMO performing overarching functions of planning, coordinating, monitoring and reporting. For their appropriate functioning, project support to the provincial and county PMOs will include vehicles, office and training equipment, capacity building, M&E, knowledge management, and innovation development. Project support will also be provided to township PMOs, but this will be relatively small since they will be composed of staff on part-time basis and use existing facilities of township governments. Recurrent costs for all PMOs will be ensured by Government counterpart funding, which will cover staff salaries, travel costs, administrative costs, and operation and maintenance of vehicles. Village implementing groups (VIGs) will also be financially supported for carrying out their responsibilities under the project which will include the coordination of project activities in the village.

## ANNEX 5. INSTITUTIONAL ASPECTS AND IMPLEMENTATION ARRANGEMENTS

### A. Management Arrangement

1. **Project Leading Groups (PLGs):** PLGs, established by decree of the respective governor or his/her representative at province and county levels, will be responsible for project coordination and planning. Composition of the PLG will include the representatives from BOF, DRC, and line agencies including departments/bureaux of water resources, transportation, agriculture, livestock, rural energy office, women federation, and poverty alleviation office, and it will be chaired by a senior official of the local government. The specific responsibilities of PLGs include the following:

- Overall supervision of PMOs' operation at each level;
- Coordination of departments/bureaux and IAs involved in the project implementation;
- Review and approve AWPBs and reports of the project and;
- Coordination of counterpart funds.

2. **Department/Bureaux of Finance (DOF/BOF):** The responsibilities of DOF and BOFs include the following:

- Management of the flow of funds to the PMOs and implementing agencies;
- Review and approve the financing needs of project implementation;
- Ensure transfer or on-lending of the loan proceeds;
- Manage project accounts and other tasks related to financial management including the preparation and submission of withdrawal applications;
- Oversee the project implementation and supervise the assets built by the project in accordance with applicable legislation.

3. **Project Management Offices (PMOs).** A PMO will be established at Province (PPMO), county (CPMO) and township levels. These are dedicated structures located within the DOA/BOAs. The provincial PMO (PPMO) and each county PMOs (CPMOs) will be staffed with qualified and full-time staff of adequate number, at a minimum composed of a director, a deputy director, an accountant, a cashier, a planning officer, an M&E officer, and a knowledge management and gender coordinator.

4. The **PPMO** will be responsible for coordinating project implementation across the 8 counties. Its responsibilities include, among others:

- Consolidation of AWPBs;
- Establishment of project M&E system;
- Monitoring and supervision of project implementation;
- Provision of appropriate training to CPMOs and implementing agencies (IAs) in terms of project implementation and management;
- Consolidation of Statements of Expenditures (SOEs) and the preparation of withdrawal applications (WAs);
- Procurement under the project;
- Project reporting;
- Organising project baseline and RIMS surveys;
- Promoting project knowledge management.

5. **CPMOs** will be responsible for coordinating project implementation at county level. Their responsibilities include: among others,

- Development of AWPBs through participatory approaches;
- Monitoring and supervision of project implementation;
- Provision of appropriate training to IAs, township PMOs (TPMOs) and village implementing groups (VIGs) in terms of project implementation;
- Preparation of SOEs and claim documents;
- Transfer of project funds to implementing agencies (IAs) on time;
- Organising of project procurement;
- Project reporting;
- Undertaking project RIMS surveys; and
- Promoting project knowledge sharing.

6. **TPMO** will be established within the local governments at township level, utilising existing facilities and staff on a part-time basis. Designated staff will provide support to the CPMO and IAs for implementation of project activities at village level on an as-required basis. Its key responsibilities are as follows:

- Oversee the works of VIGs;

- Identify eligible villages that could participate in project activities;
- Facilitate village-level participatory planning activities to determine what activities will be implemented in the villages;
- Review village implementation work plans,
- Coordinate the township technical stations/centres in project implementation;
- Consolidate the M&E data collected by VIGs and report to CPMOs; and
- Facilitate the liaison with target villages.

7. **Village Implementing Groups (VIGs).** VIG will be set up at each of the targeted administrative villages. The VIG will be headed by the director of the village committee and composed of 10-14 people, including all the village committee members and 5-7 farmer representatives from different household categories of well-being. Farmer representatives will be no less than 50% of total members of the VIG. Of the farmer representatives, women will be no less than 50% and at least two third are from the poor and vulnerable well-being categories.

8. The VIGs' major responsibilities include:

- An annual participatory perceived well-being ranking of households within the village;
- Identifying project modules and activities prioritized by eligible groups through participatory approach, and reporting to the PMOs for the development of AWPBs;
- Organizing the poor and vulnerable households to participate in project activities;
- Assisting PMOs monitor project implementation and collecting M&E data as required; and
- Organising the operation and maintenance of community infrastructure built by the project.

### **B. Implementation Arrangement**

9. The project covers a large scope of activities, including the development of irrigation facilities, drinking water supply, construction of village roads, development of cash crops and livestock, technical extension, marketing support, and village sanitation improvement. Implementation of these activities, including related trainings for beneficiaries and the development of operation and maintenance mechanisms of project outputs, will remain with the implementing agencies of county level. These agencies and their responsibilities are as follows.

10. **Bureaux of Agriculture (BOAs).** The routine of county BOAs includes the detailed planning, implementation and monitoring of agricultural and rural development activities. Technical services are provided through their technical service network, including the Agro-Technical Extension Stations, Soil and Fertilizer Stations, Plant Protection Stations, Cash Crop Working Stations, Agricultural Industrialization Offices, Green Food Development Office, Seed Administration Stations, and Seed Companies.

11. For GIADP, county BOAs will be responsible for the implementation of project modules including the annual cash crops, perennial cash crops production, improvement of township agricultural stations, support to farmer cooperatives, and the village sanitation improvement, as well as the project support packages of institutional support and value chain enhancement, all under the coordination of CPMO. Its responsibilities include, inter alia, (i) the identification of eligible townships/villages/cooperatives with given criteria; (ii) identification of target households for carrying out the modules, together with VIGs; (iii) adjustment of the modules to fit local conditions in line with given criteria; (iii) technical support and follow-up services to beneficiaries on module activities; (iv) facilitating the formation of beneficiary groups by trade and linking them with relevant farmer cooperatives, or facilitating the establishment and operation of new farmer cooperatives wherever no cooperative is reachable by the beneficiaries, if needed; and (v) reporting to CPMOs on the progress and results of module implementation.

12. **Bureaux of Livestock (BOLs).** The BOLs at county level are responsible for the detailed planning, implementation and monitoring of livestock development activities. Technical services are provided through their technical network, including the county Veterinary Stations and Breed Improvement Stations.

13. For GIADP, county BOLs will be responsible for the implementation of the landrace livestock module, under the coordination of CPMOs. Their responsibilities include, inter alia, (i) the identification of eligible villages and households with given criteria, together with VIGs; (ii) adjustment of the module to fit local conditions in line with given criteria; (iii) technical support and follow-up services to beneficiaries on module activities; (iv) facilitating the formation of beneficiary groups by trade and linking them with relevant farmer cooperatives, or facilitating the establishment and operation of new farmer cooperatives wherever no cooperative is reachable by the beneficiaries, if needed; and (v) reporting to CPMOs on the progress and results of module implementation.

14. **Bureaux of Water Resources (BOWRs).** The county BOWRs undertake the responsibility of

developing irrigation schemes and drinking water supply facilities, as well as the operation and maintenance of the schemes and facilities, particularly those on a large scale. For GIADP, county BOWRs will be responsible for the implementation of the construction of irrigation and drinking water supply facilities, under the coordination of CPMOs. Their responsibilities include, inter alia, (i) the identification of eligible villages suitable for carrying out the interventions, within the list of selected villages confirmed by the CPMOs; (ii) detail design of the works by site; (iii) organising the construction of the infrastructure; (iv) facilitating the formation of interest groups for the operation and maintenance of project works; and (v) reporting to the CPMOs on the progress and results of module implementation.

**15. Bureaux of Transportation (BOTs).** The county BOTs are responsible for the development and maintenance of roads. For GIADP, county BOTs will be delegated with the responsibility of implementing the village roads construction, under the coordination of CPMOs. Their responsibilities include, inter alia, (i) the identification of eligible villages suitable for carrying out the activities, within the list of selected villages confirmed by CPMOs; (ii) detail design of the works by site; (iii) organising the implementation of the roads construction; (iv) facilitating the formation of interest groups for the operation and maintenance of the project works; and (v) reporting to CPMOs on the progress and results of module implementation.

**16. Rural Energy Offices (REOs).** The REOs are responsible for the development of renewable energy in rural areas, mainly biogas in current stage. They will be delegated the responsibility for implementing the biogas system module for GIADP. Its responsibilities include, inter alia, (i) the identification of eligible villages within the list of selected villages confirmed by CPMOs; (ii) identification of target households for carrying out the module, together with VIGs; (iii) adjustment of the module to fit local conditions in line with given criteria; (iii) technical support and follow-up services to beneficiaries on module activities; (iv) reporting to CPMO on the progress and results of module implementation.

#### Summary of Implementation Arrangement

| Components Modules            | Implementing agencies | Responsibilities   |
|-------------------------------|-----------------------|--|
| Canal lining                  | BOWR                  | <ul style="list-style-type: none"> <li>- Identification of eligible villages with given criteria for carrying out the activity, within the list of selected villages confirmed by CPMO;</li> <li>- Detail design of the works by site;</li> <li>- Organize implementation of the activity;</li> <li>- Facilitate the formation of interest group for O&amp;M of project works;</li> <li>- Report to CPMO on the progress and results of implementation.</li> </ul>   |
| Drinking water supply systems | BOWR                  | <ul style="list-style-type: none"> <li>- Identification of eligible villages with given criteria for carrying out the activity, within the list of selected villages confirmed by CPMO;</li> <li>- Site reconnaissance and detail design of the works by site;</li> <li>- Organize implementation of the activity;</li> <li>- Facilitate the formation of interest group for O&amp;M of project works;</li> <li>- Report to CPMO on the progress and results of implementation.</li> </ul>   |
| Pavement of village roads     | BOT                   | <ul style="list-style-type: none"> <li>- Identification of eligible villages with given criteria for carrying out the activity, within the list of selected villages confirmed by CPMO;</li> <li>- Detail design of the works by site;</li> <li>- Organize implementation of road construction;</li> <li>- Facilitate the formation of interest group for the operation and maintenance of project works; and</li> <li>- Report to CPMO on the progress and results of implementation.</li> </ul>  |
| Annual/Perennial cash crops   | BOA                   | <ul style="list-style-type: none"> <li>- Identification of eligible villages within the list of selected villages confirmed by CPMO;</li> <li>- identification of target households for carrying out the modules, together with VIGs;</li> <li>- Adjustment of the modules to fit local conditions with given criteria;</li> <li>- Technical support and follow-up services to beneficiaries on module activities;</li> <li>- Facilitate the formation of beneficiary group by trade and link them with relevant farmer cooperatives, or facilitate the establishment and operation of new farmer cooperatives wherever no cooperative is</li> </ul> |

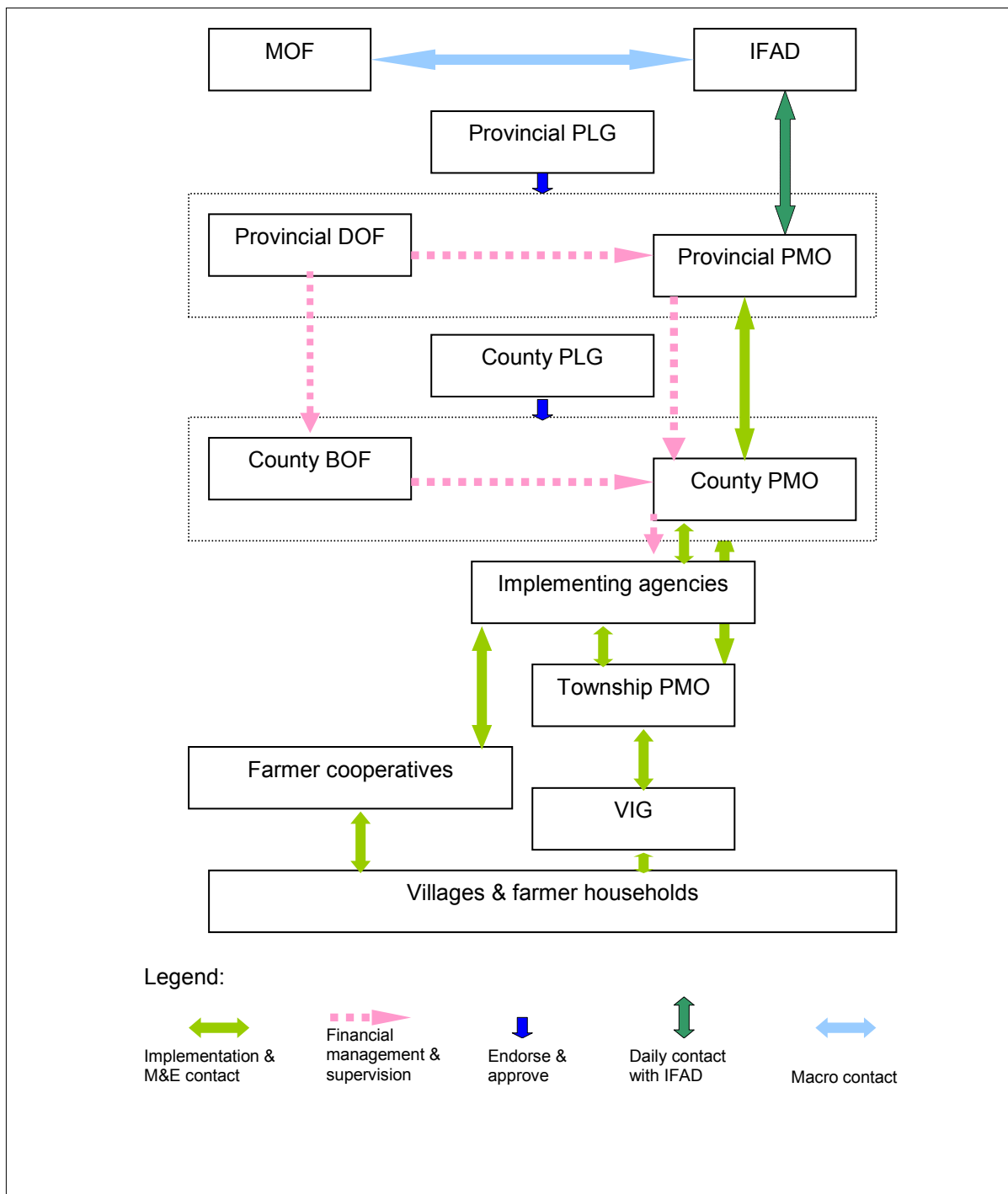


|                                |     |  |
|--------------------------------|-----|--|
|                                |     | <ul style="list-style-type: none"> <li>- reachable by the beneficiaries, if needed; and</li> <li>- Report to CPMO on the progress and results of implementation.</li> </ul>  |
| Landrace livestock             | BOL | <ul style="list-style-type: none"> <li>- Identification of eligible villages within the list of selected villages confirmed by CPMO;</li> <li>- Identification of target households for carrying out the modules, together with VIGs;</li> <li>- Adjustment of the modules to fit local conditions, with given criteria;</li> <li>- Technical support and follow-up services to beneficiaries on module activities; Facilitate the formation of beneficiary group by trade and link them with relevant farmer cooperatives, or facilitate the establishment and operation of new farmer cooperatives wherever no cooperative is reachable by the beneficiaries, if needed; and</li> <li>- Report to CPMO on the progress and results of implementation.</li> </ul> |
| Institutional support          | BOA | <ul style="list-style-type: none"> <li>- Organize the construction of township agricultural stations;</li> <li>- Organize trainings for technical staff and village technicians with updated technologies;</li> <li>- Introduction of new crop varieties and technologies and organization of related experiments;</li> <li>- Organize extension of new crop varieties and technologies.</li> </ul>  |
| Support to farmer cooperatives | BOA | <ul style="list-style-type: none"> <li>- Identification of eligible farmer cooperatives to be supported by the project, with given criteria;</li> <li>- Supervise the cooperatives' services to the project target groups;</li> <li>- Facilitate cooperatives to enhance their capability of internal management and services.</li> </ul>  |
| Value chain enhancement        | BOA | <ul style="list-style-type: none"> <li>- Identification of eligible farmer cooperatives or small enterprises to be supported by the project, with given criteria;</li> <li>- Supervise the beneficiary cooperatives/enterprises' services to the project target groups in terms of accessing remunerative markets;</li> <li>- Coordinate the use of facilities supported by the project.</li> </ul>  |
| Biogas system                  | REO | <ul style="list-style-type: none"> <li>- Identification of eligible villages within the list of selected villages confirmed by CPMO;</li> <li>- identification of target households for carrying out the module, together with VIGs;</li> <li>- Adjustment of the module to fit local conditions, with given criteria;</li> <li>- Organize the implementation of module activities;</li> <li>- Training of beneficiaries on O&amp;M of biogas system.</li> </ul>   |
| Village sanitation improvement | BOA | <ul style="list-style-type: none"> <li>- Identification of eligible villages with given criteria for carrying out the activity, within the list of selected villages confirmed by CPMO;</li> <li>- Detail design of the works by villages;</li> <li>- Organize the implementation of module activities;</li> <li>- Facilitate the formation of interest group for O&amp;M of project works;</li> <li>- Report to CPMO on the progress and results of implementation.</li> </ul>  |

17. Field assessment indicates that the above-mentioned agencies have adequate technical competence and capacity for the implementation of GIADP. Particularly, the PPMO has successfully implemented a number of World Bank-, FAO- and IFAD-funded projects including the WGPAP. At county level, the implementing agencies are the most important arms of GOC in implementing policies, programs and projects of the central, provincial and county governments, as well as programs and projects supported by donors at grassroots level.

18. The project will integrate its activities to achieve a synergistic effect for poverty reduction in the project area, linking together the improvement of community productive assets, the development of market-oriented agro-products, the enhancement of farmers' access to technical and information services and to remunerative markets, and the improvement of village sanitation. In other words, several project activities will go together in eligible villages for synergistic effect of the activities. An integrated planning for the implementation of project modules/activities will be essential in this regard.

### Appendix 1 PROJECT ORGANIZATIONAL STRUCTURE



## Appendix 2 TORs of KEY PMO STAFF

1. For successful implementation of the Project, a project management system, PMOs, will be established at prefecture and county levels and operates under the guidance of relevant PLG. The prime responsibilities of a PMO, inter alia, are to consolidate annual work plan and budget (AWPB) at their respective level, coordinate project implementation, manage the project resources, monitor project implementation, report on implementation progress on a six-monthly basis and project impact on required basis, and to ensure that project's implementation strategy is effectively applied in all activities. Generally, the overall responsibilities of the PMO staff are similar to that of a PMO. However, each PMO staff has his/her specific tasks and responsibilities in accordance with the post he/she holds. The main responsibilities of the key PMO staff are as follows:

2. **PMO Director:** The director of each PMO will undertake the overall responsibility of project implementation. The overall responsibility is to coordinate the PMO staff, relevant institutions and implementing agencies to ensure that the project implementation complies with the project Loan Agreement, strategy and requirements for reaching its objectives and goal. His/Her specific responsibilities mainly include the following points:

- Staff the PMO with qualified personnel in accordance with the requirements set forth in the Loan Agreement, work out the responsibilities of PMO staff, organize performance appraisal of PMO staff by the end of each year through linking the responsibilities with achievements of each PMO staff;
- Work out management/administration regulations of the PMO to ensure that all PMO staff perform their duties properly and that project property, documentations, data and records are filed and kept properly;
- Plan and organise necessary trainings and workshops for PMO staff and other relevant project personnel to raise their capacity, awareness, and responsibility senses of project implementation, particularly the trainings on project management, implementation modalities, M&E, gender sensitization, participatory planning, and targeting;
- Facilitate PMO staff executing their duties properly and ensure that all reports will be submitted to IFAD timely as required;
- Coordinate relevant institutions and implementing agencies to formulate project implementation plan, particularly AWPBs, in accordance with project strategy and approach, including the identification and selection of target villages and beneficiaries for each module and the adaptation of project modules to local conditions;
- Coordinate relevant institutions to ensure timely allocation of project resources to the implementing agencies to carry out the project, including IFAD loan and counterpart funds, and monitor the use of project resources to ensure that the project fund are not misused;
- Supervise the implementation of AWPBs to ensure that the project is implemented and appropriately targets to the eligible beneficiaries;
- Coordinate relevant institutions to ensure that women focused activities are well implemented and poor women's participation is fully focused;
- Plan and organise assessments/evaluations of project outcomes and impact, including the benchmark/baseline, mid-term, and completion surveys, and report the results to IFAD as required;
- Work out adjustment proposal of implementation and submit it to IFAD for "no objection" when needed, based on the up-to-date situation and results, for achieving project objectives.

3. **M&E Officer:** The M&E officer, under the guidance of project director, will undertake the responsibility of monitoring the project implementation, including project progress, achievements, availability of resources, expenditures, targeting, and gender mainstreaming, and collecting relevant data and reporting to project director to ensure that the project activities are implemented in accordance with project strategy and with approved AWPBs. The specific responsibilities are as follows:

- Develop project monitoring strategy and action plan, by component and by module, through consulting with relevant implementing agencies and related village implementing groups, including the methodology, channels, and procedures of data collection;
- Monitor the physical and financial progress and achievements of the project by component and by module;
- Monitor the allocation and flow of project resources including IFAD loan proceeds and counterpart funds, and their uses, to see if the funds are available to implementing agencies on time for carrying out the project and if the funds are used properly;
- Cooperate with relevant implementing agencies to monitor if the implementation of project modules targets to the poor and women appropriately in accordance with the project strategy;
- Assist project director to plan and organise assessments/evaluations of project outcomes and impact, including the benchmark/baseline, mid-term, and completion surveys as well as other irregular assessment activities;
- Plan and organise M&E training for relevant personnel to improve their capacity in performing M&E activities, including M&E methodology and techniques, RIMS, data collection, data analysis, and reporting;
- Prepare M&E report and project progress report and submit them to IFAD on time as required, after confirmation and approval of relevant PMO and PLG directors;
- Report to PMO director regularly with proposals based on the analysis of M&E data to ensure that the project activities are implemented in accordance with the project strategy and approach.

**4. Gender Focal Coordinator (GFC):** The GFC, under the guidance of project director, will undertake the responsibility of ensuring gender equity and equality in project implementation through development and implementation of project gender strategy and action plan. The overall objective is to facilitate rural men and women equitably participating in project activities and benefiting on an equitable basis by creating necessary enabling environment, using appropriate tools to address gender differences, and by cooperating with all project stakeholders, particularly with Women Federation and other implementing agencies. The specific duties of the project GFP include:

- Develop project gender strategy and action plan, by component and by module, through consulting with relevant stakeholders and implementing agencies;
- Coordinate with relevant institutions and implementing agencies to fully address gender issues in the formulation of AWPBs;
- Supervise the implementation of gender action plan through cooperation with the M&E officer to ensure equitable participation by men and women in decision-making and project implementation;
- Coordinate with relevant institutions and implementing agencies to create an enabling environment for women to play an effective and broad role in project activities and to ensure that women focused activities are conducted and attention will be drawn to enhance the quality of such activities to benefit women;
- Plan and organize gender sensitive training for relevant project staff involved in the project implementation, promote and disseminate the project's gender approach at all stakeholders.
- Coordinate with WFs to foster the capacity of poor women in participating in the production modules under component-A of the project;
- Monitor resources allocation to support gender-related activities and assess and report results achieved.
- Transfer update gender mainstreaming knowledge from IFAD to the project area and report through provincial PPCO to IFAD any change of policies related to gender.

**5. Project Accountant:** The project accountant, under the guidance of project director, will take the responsibility of managing the Project Account, i.e. maintaining a separate account and records, preparing financial statements of the operations, resources and expenditures related to the project,

setting up accounting subjects, transferring project resources to relevant implementing agencies, preparing withdrawal application and documents, to ensure that the project resources are well managed and used for project implementation in line with the Loan Agreement and the approved AWPBs. His/Her specific responsibilities are as follows:

- Work out, under guidance of project director, financial management regulation, and set up accounting subjects for the management of project resources;
- Open a project account under the guidance of project director, maintain a separate account and records and thereafter prepare the financial statements of the operations, resources and expenditures related to the project, and the prefecture PMO accountant will submit the financial statements through provincial PPCO to IFAD timely as required after confirmation and approval of PMO and PLG directors;
- Well manage the flow and expenditures of project funds by subjects, and properly file and retain the records evidencing project expenditures for annual audit by independent auditors and for inspection by the representatives of IFAD;
- Prepare withdrawal application and related documents of IFAD loan proceeds on a frequent basis, well manage the funds in the project account, timely transfer of project funds to relevant implementing agencies for carrying out the project;
- Supervise the use of project resources through cooperation with the M&E officer;
- Plan and organise necessary trainings or hold workshops for relevant accountants to improve their capacity in the management of project account and in the preparation of financial statements of the operation, resources and expenditures related to the project and withdrawal applications.

### Appendix 3 CAPACITY BUILDING PLAN

1. Capacity building for GIADP is suggested based on the experiences of on-going and completed IFAD-funded projects in China in order to ensure the implementation and management of the project in accordance with the designed strategies and requirements of IFAD, towards achieving the project objectives. Following Table lists the major needs of capacity building before the commencement of project implementation. Thereafter, capacity building of the project will be planned and conducted at as-required basis.

| Institutions                         | Providers         | Training needs   | Timeframe  |
|--------------------------------------|-------------------|--|--|
| PPMO and CPMO staff                  | IFAD              | <ul style="list-style-type: none"> <li>- M&amp;E training: log frame, setting-up of M&amp;E indicators, RIMS, M&amp;E reporting format, IFAD's M&amp;E requirements, etc.;</li> <li>- Gender mainstreaming: awareness training, strategies and methodologies of gender focus and mainstreaming in project implementation;</li> <li>- Financial management: preparation of financial statements, SOE, and WAs;</li> <li>- Project procurement: requirements on methodologies and documentation of project procurement.</li> </ul> | These trainings should be provided before the commencement of project implementation; thereafter, they will be held as-required basis. |
| Implementing agencies and TPMO staff | PPMO and CPMOs    | <ul style="list-style-type: none"> <li>- Participatory approach;</li> <li>- Targeting of project implementation;</li> <li>- M&amp;E training: data collection and M&amp;E reporting;</li> <li>- Gender focus: awareness training and methodologies of gender focus and mainstreaming in project implementation;</li> <li>- Project procurement: methodologies and documentation of project procurement.</li> </ul>   | These trainings should be provided before the commencement of project implementation; thereafter as-required basis.                    |
| VIGs members                         | CPMOs and IAs     | <ul style="list-style-type: none"> <li>- Participatory approach;</li> <li>- M&amp;E training: data collection and M&amp;E reporting;</li> <li>- Gender focus: awareness training and methodologies of gender focus and mainstreaming in project implementation;</li> <li>- Internal management and planning capacity;</li> <li>- O&amp;M of project physical works.</li> </ul>   | These trainings should be provided before the commencement of project implementation; thereafter as-required basis.                    |
| Farmer cooperatives                  | IFAD, PPMO, CPMOs | <ul style="list-style-type: none"> <li>- Organizational management;</li> <li>- Participatory approach and leadership;</li> <li>- Business and Financial management including development of strategic and business plans;</li> <li>- Negotiation skills and market development;</li> <li>- Technical coach skills and quality management.</li> </ul>   | These trainings should be provided in the beginning of project implementation, with chronological order based on the coops' needs.     |

## ANNEX 6. PLANNING, M&E, LEARNING AND KNOWLEDGE MANAGEMENT

### A. Project Planning

1. Project planning for GIADP will follow the current practices for IFAD-funded projects in China, which are on annual basis through the development of Annual Work Plan and Budgets (AWPBs). The PMOs will adopt the AWPBs substantially in the form cleared by IFAD. AWPB is a planning and management tool for the project implementation. Its development will be based on the demands of target groups through participatory approach and fully engage the IAs. An AWPB will include, among other things, the financial and physical progresses that have been made, a detailed description of planned project activities over the period, a procurement plan for at least 18 months, and a plan for implementation of activities by semester. AWPBs will also reflect the recommendations made by the last Project Review mission as well as corresponding actions taken and their effect. The PPMO will consolidate the AWPBs developed by each CPMO and submit it to IFAD for “no objection” review for each project fiscal year before its implementation.
2. The first AWPB should be developed and submitted to IFAD before start-up of the project. From the second year on, the PPMO will submit consolidated AWPBs to IFAD for its comments before the 31<sup>st</sup> of October each year. If no comments on the AWPBs from IFAD within 30 days after receipt, the AWPBs will deem approved by IFAD. Importantly, PMOs at all levels should be aware of available resources in the formulation of AWPBs and submit them to respective PLGs for review and clearance. Project implementation should be compliance with the AWPBs substantially in the form cleared by the PLGs and IFAD. If required, the CPMOs, through the PPMO, may propose adjustment of AWPB during implementation, which will become effective upon approval by the PPMO and after obtaining no objection from IFAD.
3. An important basis of formulating AWPBs is the project Logical Framework (log frame) that clearly sets up the project outputs, outcomes, and objectives. Their fulfilment will be monitored and evaluated (M&E) through the measurement of indicators that have been set up correspondingly. M&E results will indicate if the implementation of project activities gives appropriate outputs and outcomes towards to achieving the objectives. Therefore, they will be used as guidance of developing the next AWPB. Adjustment of activities or implementation modalities will be necessary when formulating AWPB if M&E results have indicated that implementation of the activities could not result in the achievement of project objectives, or otherwise, the project log frame will need to be revised. This close linkage among log frame, AWPB and M&E will constitute part of the project’s knowledge management.
4. Although field visits have been conducted in seven out of the eight project counties and detail discussions were held with the representatives of all 8 project counties during the project design, the unit costs for both the modules and packages presented in this report were estimated based on the overall average situation of the project area, with the understanding that: (i) the specific location for each of the project activities has still to be finalized at village level; (ii) the missions could not visit all sites for the project to conduct detail design by activities in a short period; (iii) adequate flexibilities of implementation should be given to the local PMOs and implementing agencies following the lessons learnt from other IFAD-funded projects in the country; (iv) the costs for project activities are bound to be adjusted during implementation due to price fluctuation and the changing of economic environment. These imply that the estimated average unit costs for the project modules/activities designed are indicative rather than true costs for implementation. An inherent feature of the modular approach is that it facilitates programming adjustments to reflect the specific socio-economic and environmental situations of a target area before implementation. However, adjustment of any module should maintain its essential elements. The foreseen adjustments will be applicable mainly in budgetary terms. No modular adjustment should take place in the areas of module fundamentals such as objectives, strategy, targeting and implementation procedures, unless otherwise agreed by IFAD. Detailed criteria and rules for possible adjustments are presented in ANNEX 12.

### B. AWPB Outline

5. An AWPB is consisted of a narrative report and a set of AWPB Tables. The narrative report will cover the following elements (see AWPB report outline for details):
  - i. **Background:** This section summarizes the most important external factors that will probably have significant impact on the project implementation over the AWPB period. In particular, this Chapter identifies whether any log frame assumption is unlikely to hold true. The main points, among other things, include:

- **Government policies:** Indicate any upcoming new policies that will become effective over the AWPB period and how they may impact on project implementation. Briefly explain the measures planned to mitigate potential negative effects or to take advantage of potential opportunities.
  - **Target group:** Indicate any changes over the AWPB period as regarding the situation or attitude of project target groups. Briefly explain the measures planned to mitigate potential negative effects or to take advantage of potential opportunities.
  - **Production factors/local economic context:** Discuss major changes in the external economic context with a probable impact on the sustainability or economic rate of return of project's investments. Briefly explain the measures planned to mitigate potential negative effects or to take advantage of potential opportunities.
  - **Responses to recommendations:** List the main recommendations made by the last Supervision Mission or the Management, and indicate the corresponding actions to be taken over the AWPB period to improve the implementation.
- ii. **Achievements to date and implementation focus for upcoming year:** This section provides an overview of the status of project implementation by components, as a basis to then justify the choice of implementation focuses for the new AWPB period.
- **Achievements to date:** A brief overview of achievements by component/module for previous year and cumulative years, both physically and financially.
  - **Experiences and lessons learned:** Briefly describe the experiences and lessons learned in previous year and based on which attentions or proposals needed to make improvement.
  - **Changes in objectives:** Indicate whether there are any substantial changes in objectives and physical targets for the remaining implementation period.
  - **Changes in implementation strategy:** Briefly indicate any changes in the project implementation strategy as compared to the previous year. Justify why these changes are required and present what are the expected benefits from these changes in strategy.
  - **Focuses in implementation:** Based on the experiences and lessons learned and the necessary changes as discussed in above paragraphs of this section, justify the decision and focuses in choosing project modules or activities for implementation in the new AWPB.

**Summary of Main Achievements and Focuses for the AWPB**

Unit: CNY'000

| Components/Modules         | Target | Estimated cumulative achievements |         | AWPB Fund Plan |     |     |       | Focus Level <sup>10</sup> |   |   |   |   |  |
|----------------------------|--------|-----------------------------------|---------|----------------|-----|-----|-------|---------------------------|---|---|---|---|--|
|                            |        | Amount                            | %target | IFAD           | GOV | BEN | Total | 1                         | 2 | 3 | 4 | 5 |  |
| 1 Irrigation facilities    |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 2 Drinking water supply    |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 3 Village roads            |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 4 Annual cash crops        |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 5. Perennial cash crops    |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 6. Landrace livestock      |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 7. Institutional support   |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 8. Farmer cooperatives     |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 9. value chain enhancement |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 10. Biogas system          |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 11. Village sanitation     |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| 12. Project management     |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |
| <b>Grand Total</b>         |        |                                   |         |                |     |     |       |                           |   |   |   |   |  |

iii. **Costs and Financing:**

- **Financing:** Describe the costs needed for implementing the new AWPB by modules and by financiers and indicate the sources of counterpart funding by modules.
- **Unit costs:** Highlight any major changes in unit costs due to inflation/deflation or changes in adaptations compared to previous years and their probable impact on project budget. Indicate the manner in which these changes are being dealt with in the proposed budget.
- **Flow of funds:** Indicate any foreseeable issues related to the flow of funds, to the timeliness of budget approval and funds availability and to disbursement procedures for all project financiers and suggested measures to overcome these constraints.

iv. **Procurement:**

<sup>10</sup> Focus level: from the least focus 1 to the highest focus 5.



- **Procurement plan:** Highlight any major changes in procurement as compared to the overall agreed Procurement Plan and provide justifications for these changes.
  - **Procurement process:** Indicate the major procurement methods and any foreseeable issues related to procurement methods and suggest measures to mitigate the constraints.
- v. **Expected beneficiaries and target group outreach:** This section provides information on the number of beneficiaries reached so far, by “category”, and on the number of new beneficiaries who are planned to be reached in upcoming year (brief description and filling in the following Table).

**Estimated Outreach of Beneficiaries by Categories**

| Target group category                       | Project target number to be reached | Total number that has been reached so far (cumulative) | Additional number that will be reached for the new AWPB |
|---|-------------------------------------|--|---|
| <b>Category-C:</b><br>Poverty households    |                                     |  |   |
| <b>Category-B:</b><br>Vulnerable households |                                     |  |   |
| <b>Category-A:</b> Better-off households    |                                     |  |   |
| <b>Women</b>                                |                                     |  |   |
| <b>Men</b>                                  |                                     |  |   |

- vi. **Implementation support needs:** This section presents the support needs currently identified in project implementation, such as the needs for improving the capacity of PMOs’ staff and implementing agencies or the needs for technical support, and highlights feasible proposals throughout the AWPB period; indicate how badly the support is needed. (Fill in the following Table)

**Implementation Support Needs**

| Gaps | Mitigating measures proposed | Implementation support needs     |                                      |                    |
|------|------------------------------|----------------------------------|--------------------------------------|--------------------|
|      |                              | Whom is the support needed from? | In which specific area is it needed? | When is it needed? |
|      |                              |                                  |                                      |                    |
|      |                              |                                  |                                      |                    |
|      |                              |                                  |                                      |                    |

6. A set of Tables needs to be attached to the narrative report of AWPB. The Tables will at least reflect such elements as outcomes, outputs, project and RIMS indicators, target, estimated cumulative achievement, and plan for next year. The whole set of Tables includes a summary Table by component/module, a summary Table by expenditures, and a set of separate Tables by component/module, and the general format of which can refer to the following sample Tables.



### C. Monitoring and Evaluation (M&E)

7. The GIADP will establish an effective and efficient M&E system from provincial PMO through county and township PMOs down to the VIGs. The system will operate in line with IFAD's M&E guideline. The M&E officers of the PPMO and CPMOs will be responsible for monitoring and evaluating project implementation and sharing the lessons learnt semi-annually and annually with all stakeholders in order to improve project implementation and finally achieve project objectives. In this M&E system's functioning effectively, M&E start-up workshops for the project will be essential. In this regard, IFAD's experts or consultants should provide start-up training to the M&E officers of PPMO and CPMOs, the later will then train relevant officers and staff of IAs, township PMOs and VIGs. During project implementation, M&E training will be held on as-required basis, but at least once a year.

8. The M&E officers of CPMOs will arrange the collection of M&E data in accordance with agreed indicators. VIG members will participate in the collection of M&E data, particularly in terms of participants by sex and by modules, beneficiary households by module/activities, and other indicators as required. The PPMO will consolidate M&E data reported by CPMOs and report semi-annually and annually to IFAD.

9. M&E results will indicate if the implementation of modules/activities generates outputs and outcomes towards achieving the project objectives. Therefore, they will be used as guidance in developing the coming AWPB. Adjustment of modules/packages or implementation modalities will be necessary when developing AWPBs if the M&E results will have indicated that implementation of the activities could not contribute to achieving the project objectives in line with the log frame; or otherwise, the project log frame will need to be revised. There is a close linkage among the log frame, M&E and AWPBs.

10. **Logical Framework (Log frame).** The log frame is formed based on the project objectives and activities that are required to result in outputs, outcomes and impact towards achieving the objectives. Project indicators, including output, outcome and impact levels, are set up in the log frame. They form the basis of project M&E and will be subject to adjustment during implementation of the project, as required.

#### i. Monitoring

11. Monitoring will focus on the output indicators, the physical and financial progresses of activities. Gender and household categories disaggregated data should be presented where applicable. For this purpose, data of monitoring indicators should be collected by the grassroots level (VIG) or by IAs, depending on the nature of indicators. In general, the state of benefits and participation at the levels of households and individual beneficiaries will be undertaken through the grassroots recording and reporting by VIGs. Community-level activities and staff training will be recorded and reported by IAs. The CPMOs will organise the collection of data in accordance with the agreed indicators and report semi-annually and annually through the provincial PMO to IFAD. Gender disaggregated data will be presented where applicable. For this purpose, an operational data collection system of monitoring indicators will be established from the grassroots level (VIG) up to the PPMO.

12. Indicators selected for monitoring will be different depending on the reporting level within the system. It is important to select a limited number of indicators that will actually be used by project implementers and managers. The most common framework used for the selection of M&E indicators is the input-process-output-outcome-impact framework. For a project to achieve its goal, inputs such as recruitment of technical staff may result in outputs such as new delivery system or improved services, trained staff, information materials, etc. These outputs are often the result of specific processes, such as training sessions for staff and field coordinators, which should be included as key activities aimed at achieving the outputs. If these outputs are well designed and reach the populations for which they were intended, the project is likely to have positive short-term effects or outcomes, for example, increased use of new technologies. These positive short-term outcomes should lead to changes in the longer term impact of the project, measured in decreased number of poor households or improvement of household asset ownership index, etc.

#### ii. Evaluation

13. Evaluation is an instrument for assessing changes caused by interventions or timing. It will focus on the outcome and impact indicators. Outcome and impact indicators for GIADP are set up with the criteria of measurability, pertinence, and sensitivity to change, while following the principles: (i) building on existing indicators; (ii) harmonizing with other international frameworks such as the Millennium

Development Goals (MDG); (iii) minimizing the number of indicators to be collected; (iv) relating to project components; and (v) addressing the project strategic needs.

14. There are generally four types of project evaluations that are used for different purposes and carried out at different stages, i.e. formative evaluation, process evaluation, outcome evaluation, and impact evaluation. The most familiar evaluations for PMOs in project implementation will be the outcome and impact evaluations. Outcome evaluation will be conducted annually and impact evaluation will be conducted three times during the project implementation, including baseline survey.

- Outcome evaluation: The evaluation is designed specifically with the intention of being able to attribute the changes to the intervention itself. At the very least, the evaluation design has to be able to plausibly link observed outcomes to a well-defined project, and to demonstrate that changes are not the result of non-project factors.
- Impact evaluation: If the evaluation shows a change in outcomes, then it is time for impact evaluation. True impact evaluation, able to attribute long-term changes to a specific project, is very rare. Rather, monitoring impact indicators taken in conjunction with process and outcome evaluations are considered to be sufficient to indicate the overall impact. The main instruments for assessing the impact of a project are baseline survey before implementation, mid-term survey before mid-term review, and completion survey at completion. Each survey will include, inter alia, the RIMS indicators and emphasize the improvement of household assets and children's nutritional status. The baseline survey, conducted at the stage of project design, will be the basis for assessing the project impact. It should be stressed that baseline indicators that reflect the poverty status of project area before project implementation will be used as references against those measured in succeeding mid-term and completion surveys. As such the same indicators and methodology need to be used for all three surveys for consistent and comparable purposes.

### iii. Results and Impact Management System (RIMS)

15. The RIMS is not separate from M&E, but part of M&E. RIMS indicators are the core indicators of M&E system and they should be fully integrated within the same system. There are three levels of RIMS indicators:

- First-level results (outputs): Development projects first achieve financial and physical results, mostly expressed in terms of numbers and percentages. Existing measurement systems tend from the outset to be relatively effective at reporting these results, which, in most projects, are many and constitute the bulk of management information.
- Second-level results (outcomes): Development projects must ensure that financial and physical results are matched by improved functionality and behavioural change. First-level results tend to be quantitative and answer questions such as "what and how much", but second-level results become more qualitative, answering the questions "why and how". These results tend to take more time to realize (than first-level results) and require a different and more complex measuring and reporting system. This level of results, which often requires that quantitative information be complemented by qualitative assessments, is difficult to aggregate. The results also tend to be fewer in number; but they are critical for assessing and managing the quality of project interventions, a key element of management information.
- Third-level results (impact): The previous level of results contributes to impact in terms of achieving the higher-level goals of a development project, with a degree of probability and over time (e.g. increased productivity of irrigated crops leads to increased assets and improved nutrition).

16. A large number of results and of impact indicators are available for each of the 13 components retained for IFAD's results management system. Care should be taken to be selective so as to ensure feasibility, cost-effectiveness and timelessness of the results-monitoring and reporting system. As well as being supportive of the MDGs, IFAD's mission and the objectives of its strategic framework, criteria for selection of results and impact indicators include: measurability, pertinence, accuracy and robustness, sensitivity to change, universal validity, culture neutrality, and scope for aggregation. The design of indicators should also reflect respective sectoral industry standard. Where appropriate, results and impact indicators must be gender- or sex-disaggregated, as this reflects both a crucial IFAD objective and the organization's contribution to MDG 3 (gender equality and empowerment). Furthermore, a few results and impact indicators should be mandatory for all projects. As such, they become anchor indicators for IFAD's results management system. Anchor indicators consist of a short list of critical indicators based on objective, comparable data linked to the MDGs. These indicators are not intended to replace qualitative information but to provide a base around which the qualitative

information can complete the explanatory framework. Finally, the results management system will need to allow for the inclusion of explanatory text against qualitative results and impact indicators that cannot always be aggregated.

17. RIMS survey is an important tool for the impact evaluation of IFAD-funded projects and it will be carried out three times during the five years of implementation of GIADP, including a baseline survey which was undergoing when the mission was present, a mid-term survey before mid-term review, and an impact survey at completion. Each survey will include, inter alia, the RIMS indicators that focus on the improvement of household assets, children's nutritional status, and household food security. The baseline indicators, reflecting the status of project areas at the beginning of project implementation, will be used as references against those measured in subsequent mid-term and completion surveys. As such the same indicators and methodology should be used for all three surveys for consistent and comparable purposes.

#### **D. Learning and Knowledge Management**

18. The project knowledge management strategy will be drawn on the experiences of previous and on-going IFAD projects and introduce further developments. Its key elements will include:

- An effective M&E framework will be established to monitor implementation progress against AWPBs, and achievements against the project objectives;
- Workshops and meetings, including PMOs and IAs, will be held regularly and on as-required basis, to share knowledge, experiences, innovative initiatives and success during project implementation. So will be the production of project newsletters and cross review of project implementation between counties;
- Close the linkage among project M&E, AWPBs and log frame for improving project planning. M&E will monitor and evaluate the results of project implementation against relevant indicators set up in the log frame, which will be used as a guidance for the development of the following AWPB;
- RIMS/baseline surveys will be carried out regularly to assess the project impact and draw experiences for subsequent implementation and for other IFAD projects;
- VIGs will participate in the project planning and M&E, which will improve their internal planning and management capacity as well as the project's sustainability;
- Knowledge sharing among projects will also be achieved through cross-project visits, participation in country wide or region wide knowledge sharing platforms and activities, and overseas study tours;
- Documentation of project results and experiences for sharing with other on-going and subsequent IFAD projects.
- The PPMO and CPMOs will be responsible for capturing and documenting experiences, successful cases and innovations resulting from the project implementation and organise semi-annual and/or annual workshops during the project implementation to disseminate the experiences and innovations for scaling-up. Plan for scaling-up of successful cases and innovations within the project area will be incorporated into the project AWPBs during the project implementation. Local governments will be encouraged to incorporate scaling up of those successful ventures into their own local development plans, either through support to scale up of the innovations locally or through replication/expansion of the innovations outside, by governments or other donors.

19. **Regional knowledge networking.** The project management will actively participate in regional knowledge networking activities in areas related to the project, including: (i) improvement of strategies and approaches on poverty reduction; (ii) enhancement of technology and market access; (iii) partnership development with relevant institutions and agencies; (iv) regular and frequent contributions to IFAD-Asia China window; (v) actively participate in workshops of knowledge sharing related to poverty reduction and agricultural and rural development in the region, domestically and overseas; and (vi) actively support country and region wide research and development studies and pilot activities where appropriate and useful for the country programme.

## ANNEX 7. FINANCIAL MANAGEMENT AND DISBURSEMENT ARRANGEMENTS

1. The IFAD loan will be extended to the Government on modified ordinary Terms and conditions, i.e. at a variable interest rate established semi-annually by IFAD, with a maturity period of eighteen years including a grace period of five years<sup>11</sup>. The proceeds of the IFAD loan will be passed on to the GZAR Provincial Government, on the same terms and conditions without additional charges, from the Ministry of Finance (MOF) at national level. GZAR will in turn pass on the resources, to each of the project counties on terms and conditions dictated by the level of poverty of each county; relatively well-off counties will be expected to pay back the resources, while the poorer ones will not. The DOF and BOFs will represent the respective levels of government to receive and pass on the loan funds. At county level, the funds will be transferred from BOFs to PMOs and the later will forward the funds to relevant IAs for project implementation in accordance with expenditures incurred under approved AWPBs. The IFAD loan proceeds will be repaid by the Government and under no circumstances will the IAs and beneficiaries be required to repay the loan funds except for the financing of the value-chain facilities under the package of value chain enhancement.

2. The provision and channelling of Government counterpart funds will follow the prevailing domestic financial management procedure. Assurances will be given as to the commitment of the provincial government for providing these counterpart funds in a timely manner to facilitate smooth project implementation and coherence.

3. **Designated Account:** The DOF shall open and thereafter maintain in a commercial bank accepted by IFAD, an account denominated in US dollars for the purpose of financing the project, “Designated Account”. The Designated Account will be protected against set-off, seizure or attachment on terms and conditions proposed by the Borrower and accepted by IFAD.

4. **Project Accounts:** Each BOF at county level shall open and thereafter maintain in a Bank, acceptable to IFAD, an account denominated in CNY for project operations, the “Project Accounts”. The Project Accounts shall be funded and replenished from time to time upon request of the PMOs from resources of the Designated Account in accordance with expenditures incurred under approved AWPBs. The director or deputy director of each BOF shall be fully authorized to operate the relevant Project Account.

5. **Initial Deposit into the Designated Account (Authorized Allocation):** Upon the entry into force of the IFAD loan and the Borrower’s request, IFAD will make one withdrawal of **USD 8.0 million**, approximately equal to projected eligible expenditures over the first six months of implementation, from the Loan Account on behalf of the Borrower and deposit such amount into the Designated Account to carry out the Project. The request for such deposit needs to submit related documents to IFAD, which include the following:

- Signature Specimen: Signature specimen of the authorized officials who are managing the Designated Account must be confirmed by MOF with signature and submitted through MOF to IFAD in the form acceptable to IFAD prior to requesting for the deposit.
- Letter of Evidence: A “Letter of Evidence” issued by the Bank holding the Designated Account must be submitted to IFAD before requesting for the deposit. The “Letter of Evidence” should confirm the opening of the Designated Account, provide the account number and address, and state the agreement for the operation of the account. The “Letter of Evidence” should also indicate the “SWIFT” code and address of the corresponding intermediate bank (usually an overseas bank).
- Form 100: A “Form 100” needs to be filled in and properly signed and submitted to IFAD for the request of initial deposit.

6. **Replenishment to the Designated Account:** IFAD will replenish the Designated Account from time to time upon request. Withdrawal applications for replenishment to the Designated Account should be denominated in US Dollars and should be submitted on a frequent basis, provided that the expenditure made during the previous months is more than or equivalent to the Minimum Withdrawal Amounts (USD 200,000).

7. In order to recoup the actual US Dollars that have been withdrawn from the Designated Account by PMOs, the amount withdrawn from the Designated Account in local currency should be converted

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<sup>11</sup> The Government requested aligning the usual grace period of the loans on ordinary terms and conditions, namely 3 years, with the implementation period of 5 years for the GIADP to allow the loan repayments to IFAD to start after the completion date. The request was endorsed by IFAD Management and will be recommended to the Executive Board for approval.

into USD using the prevailing exchange rate at the date of disbursing to the Project Accounts, but not using the prevailing exchange rate at the date of preparing withdrawal applications or at the dates when expenditures occurred. At any given time, the balance of Designated Account, plus the amount claimed to IFAD but not yet received, and plus the amount disbursed to the Project Accounts after the latest claiming to IFAD, should always equal to the Authorized Allocation (USD 8.0 million).

8. Each claim to IFAD for the replenishment of Designated Account needs to submit a set of documents/statements that include the following:

- Form 100: A duly filled and signed “Form 100”;
- Form SS2-B: A set of properly filled and signed “Form SS2-B”;
- Designated Account Reconciliation Statement: A properly filled “Designated Account Reconciliation Statement”;
- Confirmation Letter: A signed “Letter” confirming the expenditures.

9. **Disbursement Procedures:** There are three standard procedures that can be used to request withdrawals from the Loan Account, which are as follows:

- Advance withdrawal (replenishment of the designated account);
- Procedure I: Reimbursement should be used when eligible project expenditures reimbursable by IFAD have been pre-financed by the Borrower.
- Procedure II: Direct Payment should be used for project expenditures to be paid directly by IFAD to the suppliers or contractors.
- Procedure III: Special Commitment should be used for project expenditures related to items imported by Programme Implementing Agencies requiring guarantees for reimbursement. For details.

## ANNEX 8. PROCUREMENT

1. The main items of goods to be procured for GIADP are vehicles, office and technical equipment and furniture. Vehicles are suggested to be procured following the local competitive bidding (LCB) method. Other goods and materials will be procured following the local shopping (LS) as appropriate. Civil works will involve the improvement of rural infrastructure, including irrigation and drinking water supply facilities and village roads, and the construction of counties' training centres. They will be procured by using LCB or LS, depending on the nature of expenditure and the estimated value of the related contract. Technical services, training, workshops and studies for the project will be procured by using the LS method. The facilities for value chain enhancement will be procured through LCB or LS. Implementation of all modules will be entrusted to the respective Technical Bureaux at county level.

2. The following Table presents a summary of the procurement methods. Figures in parenthesis are the respective amounts financed by IFAD.

| Table 6: Procurement Arrangement by Procurement Method |  |                   |                    |  |        |                    |
|--|--|-------------------|--------------------|--|--------|--------------------|
|  | GIADP Applicable Procurement Methods (USD'000) |                   |                    |  |        |                    |
|  | Local Competitive Bidding                      | Local Shopping    | Force Account      | Community Participation in Procurement | N.B.F. | Total              |
| A. Civil works: Community Infrastructure               | 36 533<br>(14 613)                             | 15 657<br>(6 263) | -                  | -                                      | -      | 52 190<br>(20 876) |
| B. Civil works: Buildings                              | 2 225<br>(1 558)                               | -                 | -                  | -                                      | -      | 2 225<br>(1 558)   |
| C. Equipment & Materials                               | 2 456<br>(1 850)                               | 266<br>(217)      | -                  | -                                      | -      | 2 722<br>(2 067)   |
| D. Vehicles  | 396<br>(313)                                   | -                 | -                  | -                                      | -      | 396<br>(313)       |
| E. Training, Workshops, TA & studies                   | -  | 3 182<br>(3 182)  | -                  | -                                      | -      | 3 182<br>(3 182)   |
| F. Modules   | -  | -                 | 23 224<br>(16 257) | -                                      | -      | 23 224<br>(16 257) |
| G. Market Access                                       | 3 664<br>(2 748)                               | -                 | -                  | -                                      | -      | 3 664<br>(2 748)   |
| H. PMO management                                      | -  | -                 | -                  | -                                      | 5 709  | 5 709              |
| I. Civil Works Operation & Maintenance                 | -  | 226               | -                  | 3 324                                  | -      | 3 550              |
| <b>Total</b>   | 45 273<br>(21 081)                             | 19 332<br>(9 662) | 23 224<br>(16 257) | 3 324                                  | 5 709  | 96 862<br>(47 000) |

Note: Figures in parenthesis are the respective amounts financed by IFAD  
NB: The Provincial thresholds for local shopping are up to CNY2,000,000 for rural roads, irrigation and drainage structures, water supply works. Above the thresholds procurement is on the basis of local competitive bidding (LCB). Purchase of equipment and vehicles, plus construction of buildings can be under LCB or LS.

3. Goods and services financed through the proceeds of the IFAD loan will be procured in accordance with IFAD's procurement procedures, which are detailed in the IFAD Procurement Guidelines Manual. The procurement method to be applied in each particular case will depend on the nature of the expenditure and the estimated value of the contract. Related guidelines will be detailed in the Loan Agreement. In view of the nature of and amount involved in the goods and services, vehicles are suggested to be procured following the LCB procurement method. Other goods and services will be procured following the local shopping or direct contracting processes as appropriate.

4. A procurement plan covering a period of 18 months will be prepared as part of AWPBs to be reviewed by IFAD. The procurement plan will be based on the individual procurement plans prepared by each counties and the Provincial PMO, the plan should contain information of goods disaggregated into different modules and the project management component. The project will, during the project implementation period, use national procurement regulations and items of specific applicability will be identified clearly in procurement plans that are submitted to IFAD along with AWP&B.

5. The following will be the **SOE thresholds** recommended for the project; the IFAD Financing Agreement will provide details of such requirements.



- ◆ Expenditures pertaining to Category 1 (civil works: irrigation, village roads and water supply) up to a threshold of USD 300,000;
- ◆ Expenditures pertaining to Category 2 (civil works: buildings) up to a threshold of USD 300,000;
- ◆ Expenditures pertaining to vehicles, equipment and materials up to a threshold of USD 100,000; and
- ◆ Expenditures pertaining to consulting services up to a threshold of USD 20,000.

6. **Prior Review Thresholds:** Details on procurement review by IFAD, including prior and post reviews; modifications etc. are explained in Appendix I of the IFAD Procurement Guideline Manual. The CPMOs will adhere to the National including those of the Provincial and IFAD procurement requirements and maintain all relevant documents, bids, purchase orders and payment vouchers for post review by IFAD and for audit purpose. Suggested threshold limits for Prior Review by IFAD are as follows:

- award of any contract for construction of village roads, irrigation improvement, water supply, buildings or any civil work estimated to cost USD1000,000 or more;
- award of any contract for goods (vehicles, equipment and materials) estimated to cost USD200,000 or more; and
- Award of any contract for consulting services to cost USD 50,000 or more or any single source selection using QCBS (quality and cost based selection) or CQS (costs and quality selection) methods.

7. Enhanced threshold limits for prior review are proposed in view of difficulties experienced by PMO and IAs in the collection and compilation of documents and having them translated into English, which is not only time-consuming but also has been proving very expensive. On an average, it costs about USD 23,000 for getting one set of documents in English for prior review. Alternatively, a waiver of translation of documents into English may be provided.

8. Community participation in procurement (CPP) where appropriate, may be considered for some modules or some interventions. The Appendix II of the IFAD Procurement Guideline Manual outlines the considerations in this respect. The CPMO, in coordination with the PPMO will workout the detailed procedures and regulations relevant to community participation in procurement, where needed. The principals of transparency, competition, participatory monitoring, and joint decision-making will be adhered at all levels. Township PMOs and County PMOs will also involve themselves in monitoring the procurement process, and ensure compliance of procedures and principals such those procurement methods as Local Shopping and Local Competitive Bidding.

## ANNEX 9. PROJECT COST AND FINANCING

### A. ASSUMPTIONS

1 **Project Life:** The project will be implemented over a period of five years starting from 2012 and the project duration is considered sufficient to enable the proposed interventions completed and production activities realised full, and for marketing arrangements to mature.

2 **Inflation:** Consumer prices are rising only slowly, with the annual inflation rate averaging 3.0% *albeit* having risen to 3.2% in July 2010. Last 12 months, the inflation rate stood at about 3%. Relatively, constant food prices contribute to this stability. However, a projection by IMF puts the inflation at 2% by 2015. For the purpose of calculation, an average of 2.5% inflation has been assumed throughout the project implementation period, i.e. 2012 to 2016.

3 The project cost estimates are prepared in Chinese Yuan (CNY), using March 2011 prices. Physical contingency is set at 5% except for those expenditures that are relating to Project Management component. Modest price inflation of CNY is estimated at 2.5%, while the foreign inflation rate is set at 2%. The domestic inflation rates are adjusted using the IMF forecast.

4 **Exchange Rate:** The average July 2011 exchange rate of CNY 6.45 to the USD has been applied in assessing cost estimates in USD equivalent. The local currency CNY, is traded freely, and has been appreciating recently in line with the changes in purchasing power of the major international currencies and local inflation. The currency is expected by many analysts to appreciate against the USD in the near future to reflect changes in international demand and supply.

| China<br>Guangxi Integrated Agricultural Development project<br>Inflation and Exchange Rates |       |       |       |       |       |
|--|-------|-------|-------|-------|-------|
|  | 2012  | 2013  | 2014  | 2015  | 2016  |
| <b>Inflation (in %'s) /a</b>   |       |       |       |       |       |
| <b>All</b>   |       |       |       |       |       |
| <b>Annual rates</b>  |       |       |       |       |       |
| Local  | 2.50  | 2.50  | 2.50  | 2.50  | 2.50  |
| Foreign  | 2.00  | 2.00  | 2.00  | 2.00  | 2.00  |
| <b>Compounded rates</b>  |       |       |       |       |       |
| Local  | 1.25  | 3.78  | 6.38  | 9.04  | 11.76 |
| Foreign  | 1.00  | 3.02  | 5.08  | 7.18  | 9.33  |
| <b>None</b>  |       |       |       |       |       |
| <b>Exchange rates (Local/Foreign) /b</b>   |       |       |       |       |       |
| <b>All</b>   |       |       |       |       |       |
| Rates actually used  | 6.45  | 6.45  | 6.45  | 6.45  | 6.45  |
| Constant purchasing parity rates   | 6.47  | 6.50  | 6.53  | 6.56  | 6.59  |
| % deviation  | -0.25 | -0.73 | -1.22 | -1.70 | -2.18 |

<sup>a</sup> Yearly values are within Each Project Year  
<sup>b</sup> Yearly values are at Project Year Midpoints

5 **Taxes:** Tax rates for the project procurements vary considerably. For example, taxes for the civil contracts is about 5%, for vehicles it is 10%<sup>12</sup>, for office equipment the tax rate is 15% and salary taxes are variable but averages to 12.5%. Disbursement rates generally take care of taxes being absorbed by the government in full except in the case of vehicles, office equipment and training. There are also taxes on building and services but construction of irrigation and drainage canals, sale of farm inputs including PP chemicals and fertilisers are not taxed. There is a general tax of 15.5% on agriculture produce but the current rate is 8.8% and actual rate is only 2.5% of the value of produce. But agricultural incomes from mulberry, tea, fruits, industrial forests, newly cultivated and developed area, and areas facing labour shortages and that belonging to Minority Nationalities are exempt from taxes. The project is expected to finance a portion of taxes.

### B. STRUCTURE OF THE COSTABLES

6 The Costab Tables were generated using Version-32 of the COSTAB software. The costab

<sup>12</sup> Vehicles up to 3000 cc capacity are taxed no more than 9%, and 3000-4000 cc vehicles are taxed at 25% rate.

software has three well-defined accounts: Procurement Accounts, Disbursement Accounts and Expenditure Accounts as set out in the Table below.

| Procurement Accounts, Disbursement Accounts and Expenditure Accounts   |                                    |                                    |
|--|------------------------------------|------------------------------------|
| Procurement Accounts_PA  | Disbursement Accounts_DA           | Expenditure Accounts_EA            |
| Civil work_CID_PA  | Civil work_CID_DA                  | Civil work_CID_EA                  |
| Civil work_buildings_PA  | Civil work_building_DA             | Civil work_building_EA             |
| Vehicles_PA  | Vehicles, Equipment & Materials_DA | Vehicles, Equipment & Materials_EA |
| Equipment & materials_PA   |                                    |                                    |
| Training, workshop, TA, studies_PA   | Training, workshop, TA, studies_DA | Training, workshop, TA, studies_EA |
| Modules_PA   | Modules_DA                         | Modules_EA                         |
| Market Access_PA   | Market access_DA                   | Market access_EA                   |
|  |                                    | <b>Recurrent costs</b>             |
| PMO Management_PA  | PMO management_DA                  | PMO management_EA                  |
| CID_O&M_PA   | CID_DA                             | CID_EA                             |
| CID means Community Infrastructure Development and this includes irrigation, rural water supply and village roads<br>Accounts relating to civil work have been split in to two to confirm two separate disbursement rates. |                                    |                                    |

7 Although Legal Agreement Accounts can also be set up but these have not been defined in the present set of Tables.

8 **Cost Structure:** Project interventions have been planned with flexibility to leave participating counties some degree of freedom to decide on their development priorities and allow CPMOs to respond to demand as articulated by the target groups. The costs for all major investment activities have, thus been structured using 'modules' that break the investments down into implementation units that are combined, similar to building blocks, to make up the overall project. Flexibility for adjustment is built into the modules themselves, and in the combination of the modules in the overall mix of project activities. Interventions that are geographic-specific have been included as activities, for example, community infrastructure development such as irrigation, safe water supply, rural roads, township extension stations, facilities for market support and development etc.

9 The Project interventions and modules are summarised in the following Table, and are described in the relevant Working Papers (WP-1 for CID, WP 2 for modules 1 to 4; WP 3 for module 5 and WP 4 for modules 6&7).

| Interventions and Modules used in estimating Project Costs |   |   |
|--|---|---|
| Project Components   | Project Interventions                   | Project Modules                                 |
| 1. Community infrastructure development: (WP 1)            | - Irrigation Improvement                |   |
|  | -Safe Rural Water Supply                |   |
|  | -Village Roads                          |   |
| 2. Agricultural Production & marketing support: (WP 2 & 3) | -Institutional Support                  | <i>Module 1: Annual crops</i>                   |
|  | -Value-enhancement facilities           | <i>Module 2: Perennial crops</i>                |
|  |   | <i>Module 3: Landrace animals</i>               |
|  |   | <i>Module 4: Township Extension Stations</i>    |
|  |   | <i>Module 5: Farmers Cooperatives</i>           |
| 3. Rural Environment Improvement: ( WP 4)                  |   | <i>Module 6: Biogas systems</i>                 |
| 4. Project Management:                                     | -Provincial I Project Management Office | <i>Module 7: Village sanitation improvement</i> |
|  | -County Project Management Offices      |   |

10 Separate Detailed Tables were defined and generated by COUNTY and by Project component, namely (i) Community Infrastructure Development, (ii) Agricultural Production & Marketing, (iii) Rural Environment Improvement and (iv) Project Management. For the Project Management, 2 separate Tables were created: one for the Project Management Office in Nanning and the other one for each county PMO (CPMO). Detailed Cost Tables by county, component and by year are presented in Appendix 1 of WP7.

11 The detailed cost tables, which form the basis for the summary cost tables, have been built up by assembling the number of modules estimated to be appropriate for each participating county and the combination of other interventions such as those under the community infrastructure development, institutional support for the county research centres and value-enhancement facilities for marketing and County Project Management. These estimates were prepared using data and information

obtained from the respective county and on the basis of the mission's field assessment. Number of modules and their cost estimates are indicative and these will be further refined at appraisal.

12 In addition to modules, the detailed cost tables also contain investments that are not packaged into modules as their level of implementation is fixed and thus not proportional to the number of modules that will be implemented under specific components. These investments are relating to community infrastructure development, institutional support to county-level research stations and facilities for value-enhancing and market support and the provision of various forms of support to Implementing Agencies that will be involved in implementation of the Project.

### C. PROJECT COSTS AND FINANCING PLAN

13 The Project cost over 5 years, including contingencies is estimated at US\$ 96.83 million (CYN 624.53 million). Physical and price contingencies amount to US\$ 8.2 million (CNY 52.9 million) and account for 10% of the total project costs. Cost estimates include all nationally applicable direct and indirect taxes and for all project interventions, the taxes are estimated at US\$3.9 million (CNY 25.35 million) and account for 4% of the total project costs. In Tables, taxes are not shown separately as unit costs are inclusive of taxes and the interventions are financed both by IFAD and GoC. Investment and recurrent costs amount to 90.3% and 9.7% of total project costs, respectively. Recurrent cost implications for Government beyond the life of the project is minimal. There is no direct foreign exchange (FE) expenditure under the project except for the overseas study tours. Indirect and implicit expenditures of FE are marginal and these are not shown separately in the cost Tables. Detailed cost Tables by county and component and summary cost tables by component are presented in Appendix-1 of WP7. Project costs by project components are presented in the following Table.

| PR China, Guangxi Integrated Agricultural Development Project (GIADP) : Components Project Cost Summary |                |            |                |               |            |               |                    |                    |
|---|----------------|------------|----------------|---------------|------------|---------------|--------------------|--------------------|
|   | (CNY '000)     |            |                | (USD '000)    |            |               | % Foreign Exchange | % Total Base Costs |
|   | Local          | Foreign    | Total          | Local         | Foreign    | Total         |                    |                    |
| 1. Community Infrastructure Development   | 330 743        | -          | 330 743        | 51 278        | -          | 51 278        | -                  | 58                 |
| 2. Agricultural Production & Marketing  | 165 138        | -          | 165 138        | 25 603        | -          | 25 603        | -                  | 29                 |
| 3. Rural Environment Improvement  | 24 713         | -          | 24 713         | 3 832         | -          | 3 832         | -                  | 4                  |
| 4. County Project Management  | 40 160         | -          | 40 160         | 6 226         | -          | 6 226         | -                  | 7                  |
| 5. Provincial PMO   | 10 280         | 800        | 11 080         | 1 594         | 124        | 1 718         | 7                  | 2                  |
| <b>Total BASELINE COSTS</b>   | <b>571 035</b> | <b>800</b> | <b>571 835</b> | <b>88 533</b> | <b>124</b> | <b>88 657</b> | -                  | <b>100</b>         |
| Physical Contingencies  | 25 773         | 40         | 25 813         | 3 996         | 6          | 4 002         | -                  | 5                  |
| Price Contingencies   | 27 061         | 52         | 27 113         | 4 196         | 8          | 4 204         | -                  | 5                  |
| <b>Total PROJECT COSTS</b>  | <b>623 869</b> | <b>892</b> | <b>624 761</b> | <b>96 724</b> | <b>138</b> | <b>96 862</b> | -                  | <b>109</b>         |

14 Community infrastructure development accounts for USD56.08 million (58.9% of total costs), this is followed by Agricultural production and marketing support component including the institutional support to county-level training centres and value-enhancement facilities for marketing is estimated at USD 27.87 million (CNY 179.8 million) and the Rural Environment improvement at USD 4.32 million (CNY 27.85 million). Project management costs about 8.83% of the total costs, includes operations and maintenance of 8 county PMOs as well as support to the 44 Township offices and village implementation groups (VIGs) and the Provincial PMO. This amounts to USD 8.53 million (CNY 55.12 million).

15 Total resources will be allocated to the respective Project Counties on the basis of local poverty situation and taking into account the local income-generating potentials and the number of households. For each of the county, detailed COSTAB tables as well as the County PMO have been prepared and included in Appendix-1.

16 **Financing Plan:** The project will be financed by IFAD and the Government of China and by the project beneficiaries in the form of labour contribution. Financing Plan by Project components is shown in the following Table and details in Appendix-2 of WP7. The financing plan by financiers and by component is given in Table 4 below.

|   | Government of China |             | IFAD          |             | Beneficiaries |            | Total         |              | For. Exch. | Local (Excl. Taxes) | Duties & Taxes |
|---|---------------------|-------------|---------------|-------------|---------------|------------|---------------|--------------|------------|---------------------|----------------|
|   | Amount              | %           | Amount        | %           | Amount        | %          | Amount        | %            |            |                     |                |
| 1. Community Infrastructure Development | 31 540              | 56.2        | 21 245        | 37.9        | 3 324         | 5.9        | 56 109        | 57.9         | -          | 54 019              | 2 089          |
| 2. Agricultural Production & Marketing  | 7 831               | 28.1        | 20 046        | 71.9        | -             | -          | 27 877        | 28.8         | -          | 27 674              | 202            |
| 3. Rural Environment Improvement        | 1 177               | 27.2        | 3 023         | 70.0        | 119           | 2.8        | 4 318         | 4.5          | -          | 4 132               | 186            |
| 4. County Project Management            | 4 894               | 73.1        | 1 796         | 26.9        | -             | -          | 6 690         | 6.9          | -          | 6 502               | 188            |
| 5. Provincial PMO                       | 979                 | 52.4        | 890           | 47.6        | -             | -          | 1 869         | 1.9          | 138        | 1 694               | 36             |
| <b>Total PROJECT COSTS</b>              | <b>46 420</b>       | <b>47.9</b> | <b>47 000</b> | <b>48.5</b> | <b>3 442</b>  | <b>3.6</b> | <b>96 862</b> | <b>100.0</b> | <b>138</b> | <b>94 022</b>       | <b>2 702</b>   |

17 Government and IFAD will jointly cover the project investment costs including all module implementation costs, vehicles, equipment, and materials, workshops, training, and TA. Government will finance all the recurrent costs. Following are the proposed financing rules, which will be fine-tuned at appraisal on the basis of mutual discussions between IFAD and the government:

| Disbursement Category   | IFAD Financing Rule (%)       |
|---|-------------------------------|
| Civil work for CID  | 40% of eligible expenditure   |
| Civil work for buildings for research centres   | 70% of eligible expenditure   |
| Vehicles and equipment  | 80% of eligible expenditure   |
| Training, workshops, TA, studies, M&E, RIMS   | 100% of eligible expenditures |
| Modules (all types)   | 70% of eligible expenditures  |
| Market Access   | 75% of eligible expenditures  |
| CID, community infrastructure development and this includes irrigation, rural water supply and rural roads. |                               |

18 **Modules Financing:** All modules will be financed using overall percentage of 70% by IFAD and 30% by GoC. Financing mechanism of the project modules is described briefly below.

- ◆ **Annual Cash crops modules:** In each module will be of 100 ha size with a unit cost of CNY 1,040,000 per module. Each module will be implemented in two year period. In year 1, demonstrations covering 10 ha and training of beneficiaries will be taken up. The project support is limited to supply of improved and quality planting materials to the target groups of participating beneficiaries. In year 2, these activities will be upscaled covering 100 ha and training. Cash crops proposed to be covered include cucumber, lotus roots, Junccea, Bailey, seedless water melon, taro, kudzu roots, lily, fragrant rice, yam, sagittifolia etc. Some 750 households participate in each module. All activities will be carried out using force account procedure.
- ◆ **Perennial crop modules:** Same process as described above but unit cost is CNY 2,765,000 per module. Major crops covered include sugarcane, organic tea, kiwi, cherry, honey suckle flower, grapes, mandarin, camellia oil, corsvenor momordica, pomelo, summer ornage, stevia, persimmon etc. Some 500 households participate in each module. All activities will be under force account procedure by respective county bureau of agriculture.
- ◆ **Landrace animal modules:** Basically include chicken and goats and implemented in one year. Project support includes breeding stock, feed, materials and training. Each household gets a module and in all 320 modules are supported by the project. Activities are carried out using force account procedure..
- ◆ **Township extension modules:** Each module includes civil work, technical equipment and furniture sets with a unit cost of CNY 500,000 per station. It would be under force account procedure and respective county bureau of agriculture responsible its implementation. In all 18 such stations are supported under the project. Refer WP 2, Agriculture Support” for more details
- ◆ **Farmers’ Cooperative modules:** Modular activities are inclusion of poor households and women in farmers’ cooperatives, access to new techniques and know-how, market-linkage and trade promotion and purchase of office equipment. A module will be completed in a two year period with an estimated investment cost of CNY 215,000 each. In all 44 cooperatives are supported under the project. At least, some 270 households are expected to benefit from each module. Activities are carried out using force account procedures. Refer WP 3, Market Support for more details.

- ◆ Biogas system modules: It is a household level module and activities include kitchen improvement, latrine and livestock shed renovation, construction of biogas digesters and training. Average cost of a module is CNY 6120. This is financed by IFAD 70%, GoC 10% and the benefitting household 20% (mostly in the form of labour). Activities are carried out using force account procedures. Refer WP 4, “Rural Environment Improvement” for more details.
- ◆ Village Sanitation Improvement modules: The modular activities include sewer construction, garbage drop-off sites, storm drains, inner village tracks, waste water septic and training. In all 29 modules are proposed under the project and will be constructed in 29 villages as comprehensive pilots. Average cost of a module is CNY 732,100. Modular activities are split for a two year. It is proposed to be implemented under force account procedure but local shopping may also be required.

**19 Retroactive Financing:** Provision will be made for retroactive financing of up to US\$ 600,000 to finance the start-up preparation activities of the Project in the period between the signing of the Memorandum of Understanding of the Design Completion Mission on 28 July 2011 and the entry into force of the IFAD loan. Eligible expenditures for retroactive financing are those incurred under the project disbursement accounts<sup>13</sup> C, D, and E. Major activities include: (i) purchase of essential items of equipment for PMOs, excluding vehicles; (ii) establishment of M&E system; (iii) start-up training and workshops of implementation and management; (iv) exposure visits for knowledge and experiences sharing; (v) field surveys and studies; (vi) seasonally-dependent crop demonstration activities.

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<sup>13</sup> Disbursement Account C: Vehicles, equipment and materials; Disbursement Account D: Training, workshop, technical assistance, studies; and Disbursement Account E: modules.

## ANNEX 10. ECONOMIC AND FINANCIAL ANALYSIS

### A. Objectives and Methodology

1 **Purpose of Economic Analysis:** The objective of the economic analysis is to evaluate the expected contribution of the Project to the economic development of the project area. The purpose of such analysis is to determine whether the economic benefits sufficiently justify the use of the scarce resources that the project investing in. In evaluating the economic performance of the GIADP, "Cost-benefit method of analysis" has been used.

2 **Methodology used:** The mission has estimated that the expected benefits from project investments will be inextricably linked, as the ability of farm households to realise the potential increases in incomes and food security will depend on all options of investments. The mission considers that in the project area counties, the additional infrastructure investments are necessary for on-farm development to enable target households to participate in the project, and to purchase inputs and sell outputs. Thus for example, for some households, the time saved by women in easier access to safe drinking water will free up their time, and or reduce the numbers of days lost due to ill-health; for others, year-round access to markets will be critical to the sale of their farm products. For others still, the benefits of lining of irrigation channels, crop demonstrations followed by up-scaling, supply of breed stocks of chicken and goats will enable them to improve their economic conditions. Thus, benefits accruing as a result of "productive good" infrastructure investments such as construction of lined irrigation channels, and investments on annual and perennial crop planting are accounted for and included in the increases in farm household incomes. Similarly, benefits accrue from township extension stations have also been accounted for. Implicit benefits accruing out of biogas system has also been quantified.

### B. Key Assumptions

3 The following factors and assumptions underlie the economic analysis of the GIADP made by the Design Completion Mission in July/August 2011:

- Average size of landholding is 3.0 mu (about 0.2 ha) equivalent to 0.05ha per capita; no more than 25% of the landholdings are irrigated, although conditions vary between Counties.
- Average area covered under annual crops module is 1,500 mu (100 ha) and each module covers 750 households;
- Average area covered under perennial crop module is 1,500 mu and some 500 households participating in it;
- Livestock module consists either of goats (50 does plus 2 buck unit), or a unit of 2,500 day-old chicks that are raised under free-ranging system;
- Number of households covered by a Township Agricultural Extension Station is 6,000 cultivating a total area of 1,200 ha; marginal productivity increases are achieved due to better farming practices and enhanced extension services. There are no significant changes in the use and application of inputs;
- In all 44 farmers cooperatives are covered under the project with an existing total membership of 12,488 and some 14,900 new members joining these cooperatives by year 3. Average incremental margins gained by these members are assumed at 15% over existing situations or CNY 750 per member per year.
- Each biogas system module consists of (i) one of 8 m<sup>3</sup> biogas digester, (ii) latrine improvement, (iii) kitchen improvement, (iv) pig-pen improvement and (v) training to the beneficiary. Each biogas system is fed by at least 4 pigs throughout the year and/ or connected to household latrine. An implicit value of fire-wood, an alternative to biogas in rural area, is assumed at CNY 700/ ton.
- Productivity increases under irrigation improvement are due to (i) better and improved supply of irrigation water and (ii) adoption of improved on-farm water management practices. The project activities will, thus, ensure irrigated crops that still suffer from significant water stress due to poor water management on the current irrigation schemes will now be able to fulfil their water needs to a higher degree. Hence yields on the improved schemes are expected to increase by at least 10%.

- There are no significant changes in input application. But there are reductions in labour input for irrigation as evidenced from field observation by the mission. For the purposes of analysis, a 30% labour reduction for irrigation has been assumed.
- Average size of a rural household has been assumed at 4 members. The households manage their livestock along traditional lines; have access to vaccination or parasite control.
- Farm gate prices are nearly 10 to 15% lower than the market prices.
- Nearly 67% of grains, 10% of fruits, 35% vegetables and 30% of poultry and livestock products are consumed at household level.
- Access of the target groups to inputs such as quality seeds, fertilisers, agri-chemicals is limited. FYM and other manure (biogas slurry) available as output from the existing biogas digesters are used for on-farm applications.
- For want of specific data and information, benefits from (i) value enhancement facilities of the agro-centres; (ii) institutional support to township research and experiment centres; and (iii) village sanitation improvement have not been quantified and hence have not been considered for analysis.

### **Farm models**

#### **Irrigation improvement model:**

- Using the global data from the project area counties, on an average a kilometre of canal irrigates some 7 to 8 ha.
- An irrigation model has one ha (15 mu) irrigated land with about 150% of irrigation intensity: major crops are rice, corn, vegetables, pepper, fruit sugarcane and ginger etc.
- With the project intervention, there will be increases in productivity due to improved water management practices on-farm, which currently stands at about 42% (Para 8, WP 1).
- In all about 5,230 ha of existing irrigation scheme area will have lined canal facilities.

|             |         |
|-------------|---------|
| First year  | 0 ha    |
| Second year | 1342 ha |
| Third year  | 2097 ha |
| Fourth year | 1490 ha |
| Fifth year  | 300 ha  |

Yield increases have been assumed at 10% over existing yield levels.

#### **Annual cash Crops model:**

- The annual cash crops module has a unit area of 1,500 mu and operated by some 750 households. In all 13 modules are proposed under the project.
- The cash crops include Cucumber 1500 mu, Fragrant rice 1500 mu, Lotus roots 1000 mu, Juncea 1000 mu, Bailey 1000 mu, Seedless water melon 1500 mu, Taro 1500 mu; Kudzu vine 1500 mu; Lily 1500 mu; Sagittifolia 3000 mu and Yam 3000 mu.
- The module activity starts with a 10 ha or 150 mu demonstration and later upscaling to 1,500 mu.

#### **Perennial Crops model:**

- Each perennial crop module has 1,500 mu and operated by some 500 farmers. In all 24 modules are supported by the project.
- Key crops are Grapes 3000 mu, Cherry 1500 mu, Kiwi 1500 mu, Camellia oil; & chi each 1500 mu, Tuckahoe 1500 mu, Corsevenor momordica 1500 mu, Litchi 1500 mu, Honey suckle flower 4500 mu, Sugar cane 3000 mu, Fruit sugar cane 1500 mu, Summer orange 1500 mu, Mandarin 6000 mu, Pomelo 1500 mu, Persimmon 1500 mu, Stevia 1500 mu, oolong tea 1500 mu etc.
- All perennial crops are assumed as new plantings.



#### **Township Extension station model:**

- One township extension station covers some 10,000 households. For the purposes of analysis, only 60% of households have been taken as effective coverage.
- Of the area covered, 55% is under paddy land, 25% area under rain-fed crops and the balance 20% under perennial crops. Due to project interventions, there are marginal productivity increases.
- Cropping patterns assumed under the module included: rice 50%, corn 16%, sweet potato 6%, minor millets 10%, sugarcane 13%, peanut 2.5% soybean 0.75%, cassava 10%, water melon 1%, banana 1%, tomato 0.4%, pepper 0.8%, potato 1%, cucumber 0.5%, ginger 0.3%, vegetables 12%, etc.

#### **Livestock model**

- Each livestock model includes either one unit of 50 does and 2 bucks or one unit of 2500 three-yellow, one-day old chicks.
- At full development, a module generates about CNY 31,000/year/household. Also refer to WP 2, "Support to Agriculture"

#### **Biogas system model:**

- This module consists of one 8 m<sup>3</sup> capacity biogas digester, at least 4 pigs for feeding the plant, improvement to household latrine, kitchen facilities and training etc provided at an estimated cost of CNY 6,120.
- Each model covers one household. It is assumed that one unit saves some 1.2 ton of dry or 2.2 ton of wet firewood valued at CNY 3,500<sup>14</sup>; or 847 kg of coal.
- Benefit has been estimated assuming one 15 kg LPG cylinder is used by a family for about 1.5 month and each cylinder is priced at CNY 100.
- In all 569 biogas modules are installed.

#### **Farmers' Cooperative model:**

- In all 44 farmers cooperatives are taken up for improvement.
- At present, there are 12,488 members and by year 3, some 14,900 new members will join these cooperatives.
- The existing and new members derive benefit due to increased sales margin averaging 15% over the existing margins. This has been assumed at CNY 750/household/year.

#### **Rural road benefits:**

Benefits accruing to farmers have been estimated in the form of enhanced margins for their agricultural produce due to enhanced access to markets

- (i) average agriculture area per km road length has been assumed as 7 ha; (ii)

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<sup>14</sup> On the basis of discussions with the rural households the mission estimated that a bundle of firewood weighing about 50 kg is good for three days to a household and it takes about one full day for an adult to collect the firewood from the nearby area. Thus a household spend about 120 days a year and applying an implicit wage rate of CNY 35, annual value of firewood is estimated at equivalent to CNY3500.

- (ii) farm gate values of commodities and average production of agricultural commodity per ha of road has been assumed as CNY 7000/km/year or CNY 1000/ha or CNY 140 per household per annum;
- (iii) Average enhanced margins the farmers receive has been assumed at CNY 140/household.

### Economic analysis: Key assumptions

- A twenty five-year analysis period has been assumed, which included a FIVE -year project investment period;
- Agricultural goods move freely within the project area in response to market signals;
- All inputs and outputs that are traded are valued at their respective farm-gate prices as of July 2011;
- Economic investment costs are net of duties, taxes and price contingencies, office rent, and subsidies but inclusive of physical contingencies. All costs directly associated with the incremental production are included in full, including incremental farm inputs and family labour;
- A standard conversion factor (SCF) of 0.85 is applied to both traded and non-traded items for adjusting financial prices;
- The average financial rural wage rate is taken to be the best estimate of the economic value of labour. The financial price of labour (CNY 50) reflects seasonal variations in employment opportunities in the project area. The financial wage rate is thus taken to reflect the value of the marginal product of agricultural labour without the project;
- The analysis includes only direct, attributable benefits from crops, fruit crops, livestock activities and benefits from township extension stations, farmers' cooperatives, biogas digesters, road improvement etc; all indirect benefits such as spin off benefits of up-scaling of annual crops and perennial crops and benefits from rural water supply were not included in the analysis;
- All benefits that accrue but non-quantifiable from institutional support to training centres, and market support facilities were not included in the analysis for want of data but all qualitative benefits of these investments have been outlined;
- All costs and benefits are relating to investments made on targeted villages, townships and counties and the resultants benefits;
- Time required for the full development has been assumed over 9 years including irrigation improvement, village road construction, construction of safe water supply systems, dissemination of information and technology transfer, and establishment of demonstrations, development of market access, development of farmers cooperatives etc.; AND
- The analysis employs an opportunity cost of capital (OCC) of 12% and the analysis was carried out in domestic currency values.

### PRICES:

#### IMPORT/ EXPORT PARITY PRICES: INDICATIVE

| Commodity      | Price | transport | handling | distribution | Total price | Economic price CNY/t | Farm gate Price CNY/t |
|----------------|-------|-----------|----------|--------------|-------------|----------------------|-----------------------|
| <u>Import:</u> |       |           |          |              |             |                      |                       |
| Soybean        | 603   | 3.1       | 4.3      | 3.1          | 592.5       | 3850                 | 7000                  |
| Corn           | 298   | 3.1       | 4.3      | 3.1          | 308.5       | 2000                 | 2000                  |
| Wheat          | 359   | 3.1       | 4.3      | 3.1          | 369.5       | 2400                 | 4000                  |
| <u>Export</u>  |       |           |          |              |             |                      |                       |
| Beans          | 739   | 3.1       | 4.3      | 3.1          | 749.5       | 4870                 | 5730                  |
| Tea            | 2182  | 3.1       | 4.3      | 3.1          | 2171.5      | 14110                | 12000                 |
| Garlic         | 379   | 3.1       | 4.3      | 3.1          | 379.5       | 2465                 | 2900                  |
| Groundnut      | 1783  | 3.1       | 4.3      | 3.1          | 1772.5      | 11520                | 11520                 |
| Rice, milled   | 395   | 3.1       | 4.3      | 3.1          | 384.5       | 2500                 | 3000                  |
| Nuts           | 5082  | 3.1       | 4.3      | 3.1          | 5071.5      | 32960                | 38780                 |
| Fresh fruits   | 485   | 3.1       | 4.3      | 3.1          | 474.5       | 3083                 | 3627                  |

GENERATED FROM “FARMODE” CHINA APPRAISAL

CHINA  
GRDP  
**PRICES**  
(In CNY)

|                          | Unit | ECONOMIC | FINANCIAL | Economic Calculations Rule |
|--------------------------|------|----------|-----------|----------------------------|
| <b>Outputs</b>           |      |          |           |                            |
| <b>ANNUAL CROPS</b>      |      |          |           |                            |
| Glutinous rice           | ton  | 3,500    | 5,000     | CF: .70                    |
| Rice                     | ton  | 2,550    | 3,000     | CF: .85                    |
| Organic rice             | ton  | 3,400    | 4,000     | CF: .85                    |
| Sugarcane /a             | ton  | 850      | 1,000     | CF: .85                    |
| Sugarcane /b             | ton  | 468      | 550       | CF: .85                    |
| Zhitian Pepper           | ton  | 5,100    | 6,000     | CF: .85                    |
| Tobacco                  | ton  | 12,750   | 15,000    | CF: .85                    |
| Herb Mushroom            | ton  | 5,100    | 6,000     | CF: .85                    |
| Ginger                   | ton  | 5,100    | 6,000     | CF: .85                    |
| Garlic                   | ton  | 2,550    | 3,000     | CF: .85                    |
| Corn /c                  | ton  | 2,000    | 2,000     | CF: 1                      |
| Vegetables               | ton  | 1,700    | 2,000     | CF: .85                    |
| Wheat /d                 | ton  | 2,400    | 4,000     | CF: .6                     |
| Peanut /e                | ton  | 8,500    | 10,000    | CF: .85                    |
| Sweet Potato /f          | ton  | 1,700    | 2,000     | CF: .85                    |
| Cucumber /g              | ton  | 850      | 1,000     | CF: .85                    |
| Banana                   | ton  | 2,040    | 2,400     | CF: .85                    |
| Soybean                  | ton  | 3,850    | 7,000     | CF: .55                    |
| Lotus                    | ton  | 2,040    | 2,400     | CF: .85                    |
| Chaocai                  | ton  | 298      | 350       | CF: .85                    |
| Lily                     | ton  | 20,400   | 24,000    | CF: .85                    |
| Juncea                   | ton  | 298      | 350       | CF: .85                    |
| Bailey                   | ton  | 5,100    | 6,000     | CF: .85                    |
| Water melon, seedless /h | ton  | 1,700    | 2,000     | CF: .85                    |
| Taro                     | ton  | 3,400    | 4,000     | CF: .85                    |
| Kudzu vine /i            | ton  | 2,550    | 3,000     | CF: .85                    |
| Tuckahoe                 | ton  | 8,500    | 10,000    | CF: .85                    |
| Sagittaria               | ton  | 2,720    | 3,200     | CF: .85                    |
| Yam                      | ton  | 2,550    | 3,000     | CF: .85                    |
| Cassava                  | ton  | 459      | 540       | CF: .85                    |
| <b>PLANTATION CROPS</b>  |      |          |           |                            |
| Grapes                   | ton  | 17,000   | 20,000    | CF: .85                    |
| Peach                    | ton  | 5,100    | 6,000     | CF: .85                    |
| Kiwi                     | ton  | 12,750   | 15,000    | CF: .85                    |
| Chestnut                 | ton  | 4,250    | 5,000     | CF: .85                    |
| Walnut                   | ton  | 25,500   | 30,000    | CF: .85                    |
| Early Citrus             | ton  | 1,700    | 2,000     | CF: .85                    |
| Pearl Plum               | ton  | 5,950    | 7,000     | CF: .85                    |
| Big Fruit Cherry         | ton  | 17,000   | 20,000    | CF: .85                    |
| Citrus                   | ton  | 4,250    | 5,000     | CF: .85                    |
| Mandarin                 | ton  | 5,100    | 6,000     | CF: .85                    |
| Bitter Tea               | ton  | 5,950    | 7,000     | CF: .85                    |
| Organic Tea              | ton  | 10,200   | 12,000    | CF: .85                    |
| Green Tea                | ton  | 3,825    | 4,500     | CF: .85                    |
| Bamboo Shoots            | ton  | 850      | 1,000     | CF: .85                    |
| Silk Cacoon              | kg   | 13       | 15        | CF: .85                    |
| Longan                   | ton  | 2,550    | 3,000     | CF: .85                    |
| Honey Suckle /j          | kg   | 9        | 10        | CF: .85                    |
| Camellia Chi             | ton  | 59,500   | 70,000    | CF: .85                    |
| Camellia Oil             | ton  | 59,500   | 70,000    | CF: .85                    |

|                  |            |        |        |         |
|------------------|------------|--------|--------|---------|
| Persimmons       | ton        | 1,190  | 1,400  | CF: .85 |
| Summer Orange    | ton        | 2,975  | 3,500  | CF: .85 |
| Shatian Pomelo   | ton        | 2,550  | 3,000  | CF: .85 |
| Litchi           | ton        | 10,200 | 12,000 | CF: .85 |
| Stevia           | ton        | 12,750 | 15,000 | CF: .85 |
| Momordica fruit  | 1000 #     | 595    | 700    | CF: .85 |
| <b>LIVESTOCK</b> |            |        |        |         |
| Beef Cattle      | Cattle     | 4,250  | 5,000  | CF: .85 |
| Bamboo Rabbit    | Bam_rabbit | 255    | 300    | CF: .85 |
| Goat /k          | Goat       | 638    | 750    | CF: .85 |
| Bucklings        | Buckling   | 255    | 300    | CF: .85 |
| Doelings         | Doeling    | 340    | 400    | CF: .85 |
| Pig              | Animal     | 808    | 950    | CF: .85 |
| Pig manure /l    | ton        | 85     | 100    | CF: .85 |
| Piglets          | Piglet     | 170    | 200    | CF: .85 |
| Broiler /m       | Bird       | 38     | 45     | CF: .85 |
| Rabbit           | Rabbit     | 128    | 150    | CF: .85 |
| Bamboo Rabbit    | Bam_rabbit | 255    | 300    | CF: .85 |
| Fish /n          | kg         | 13     | 15     | CF: .85 |
| <b>Labor</b>     |            |        |        |         |
| Planting         | personday  | 43     | 50     | CF: .85 |

### C. Costs - Benefits Analysis

4 **Investment and Recurrent Costs:** The incremental cost streams include all incremental on-farm investment and operating costs (total incremental production costs calculated using FARMOD) including the economic value of all the necessary incremental labour; and the project investment costs (calculated using COSTAB and excluding taxes and duties, grant, price contingencies, etc.)

5 The project economic costs were calculated from the financial project costs excluding price contingencies, subsidies, taxes and duties. Recurrent costs for continued extension/training support, operation and maintenance. Economic prices for inputs and output models were estimated by applying the conversion factors on the financial prices. See **Appendix 8**, Table 8.2 for details.

6 **Project Performance Indicators:** The economic viability of the Project has been measured using three indicators, namely, internal rate of Return (IRR), Net Present value (NPV) and benefit cost ratio (BCR).

**IRR** is defined as the discount rate that zeroes out the net present value of flows of costs and net present value of flows of benefits of an investment. For the project, the IRR was computed using incremental net benefits streams for 25 year period.

**Net Present Value** is a very concise performance indicator of an investment project: it represents the present amount of the net benefits (i.e. incremental benefits less incremental costs) flow generated by the investment expressed in CNY (a single value with the same unit of measurement used in the accounting tables). The NPV of the GIRDP is the sum of a 25 year net cash flows discounted at 12%.

**Benefit Cost Ratio** is the ratio of (i) the discounted incremental cost streams for a 25 year period and (ii) discounted incremental benefits streams for the same life period. The incremental costs and incremental benefits streams were discounted using a 12% discounted rate. The BCR is independent of the size of the investment, but in contrast to IRR it does not generate ambiguous cases and for this reason it can complement the NPV in ranking projects. Being a ratio, the indicator does not consider the total amount of net benefits and therefore the ranking can reward more projects that contribute less to the overall increase in public welfare.

7 As the overall project IRR for a 25 year stream of costs and benefits is 20%. At a discount rate of 12%, the benefits and costs yield a BCR of 1.2 and a NPV of CNY 1,319.6 million. See Table 5.

8 **Sensitivity analysis:** Sensitivity analysis is fundamental to any economic evaluation. It is used to test the vulnerability of options to unavoidable future uncertainties. While doing so, spurious accuracy is avoided, and it is essential to consider how conclusions may alter, given the likely range of values that key variables may take. Therefore, the need for sensitivity analysis is always considered, and, in practice, dispensed with only in exceptional cases. Sensitivity analysis of the project has been carried out for four different scenarios: (i) 10% increase in costs; (ii) 20% increase in costs; (iii) 10% reduction in benefits; and (iv) 20% reduction in benefits, (v) plus combinations thereof:

- (a) If benefits declined by 10%, IRR is 15%;
- (b) If benefits declined by 20%, IRR is 10%;
- (c) If costs increased by 10%, IRR is 15%;
- (d) If costs increased by 20%, IRR is 12%;
- (e) If costs increased by 10% and benefits declined also by 10%, the resultant IRR is 11%; and
- (f) If benefits delayed by 2 years, IRR is 11%.

9 The project sensitivity is demonstrated in Table 5 below. Accordingly, the project is viable under all situations as far as IRR are concerned. As NPV is the real indicator, the project is sensitive to increases in costs more than 15% and decline of benefits over 17%.

| Table-5: Sensitivity Analysis of NPV, BCR and IRR of the GIADP a/ |   |                   |                    |     |                      |      |
|---|---|-------------------|--------------------|-----|----------------------|------|
| Project Performance Indicators:                                   | Discount Rate %   | NPV (CNY million) |                    |     |                      |      |
|   |   | Base Case         | Costs Increased by |     | Benefits declined by |      |
|   |   |                   | 10%                | 20% | 10%                  | 20%  |
| NPV   | 12 %  | 1319              | 654                | -13 | 522                  | -277 |
| <b>Benefits Cost Ratio</b>  |   |                   |                    |     |                      |      |
| BCR   | 12 %  | 1.2               | 1.09               | 1.0 | 1.08                 | 0.96 |
| IRR   | <b>IRR of Benefits and Costs Streams (%) at varying scenarios</b> |                   |                    |     |                      |      |
|   | -   | 20                | 15                 | 12  | 15                   | 10   |

10 **Switching values:** The calculation of switching values shows “by how much a variable would have to fall (if it is a benefit) or rise (if it is a cost) to make it not worth undertaking an option”. This is considered a crucial input into the decision as to whether a proposal should proceed. It is therefore a prominent part of an economic evaluation. An analysis indicates that the GIADP project tests very strongly for the switching value analysis and even when costs and benefit streams of the GIADP are discounted at 12%, the benefits declined by over 17% and costs increased by 20%, the NPV works out to be positive and thus the project remains viable and worthy of support. If all benefits delayed by two years, the resultant IRR would be 11%

11 **Examples of variables** that are likely to be both inherently uncertain and fundamental to an economic evaluation are the growth of real wages, forecast revenues, demand, prices, and **assumptions** about the transfer of risks. A prior analysis of costs into fixed, step, variable, and semi variable categories can help in understanding the sensitivity of the total costs of proposals. But such an approach was not attempted here.

12 **Scenarios** are also useful in considering how options may be affected by future uncertainty. Scenarios can be chosen to draw attention to the major technical, economic and political uncertainties upon which the success of a proposal depends. Considering scenarios needs to be **proportionate**. The expected NPV can be calculated for each scenario. It is helpful to undertake some sensitivity analysis within a scenario. For the GIRDP, scenarios under varying costs and benefits were assumed; such as increases in operating and investment costs and decline in benefits. The project proved viable in all-tested scenarios.

P. R. CHINA: GUANGXI INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT  
PROJECT DESIGN COMPLETION REPORT – ANNEX 10

| CHINA<br>GDP<br>Project Summary<br>ECONOMIC BUDGET (AGGREGATED)<br>(In CNY '000) | PEOPLE'S REPUBLIC OF CHINA<br>GADP<br>PROJECT SUMMARY<br>ECONOMIC BUDGET - AGGREGATED (In CNY '000)<br>April – March |           |           |           |           |           |           |           |           |           |           |           |              |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
|--|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|---------|
|  | Without Project  |           |           |           |           |           |           |           |           |           |           |           | With Project |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
|  | 1 to 25  | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12           | 13        | 14        | 15        | 16        | 17        | 18        | 19        | 20        | 21        | 22        | 23        | 24        | 25        |         |
| <b>Main Production</b>   |  |           |           |           |           |           |           |           |           |           |           |           |              |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| ANNUAL CROPS   | 1 094 655  | 1 094 655 | 1 154 884 | 1 221 943 | 1 287 958 | 1 290 840 | 1 293 570 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745    | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 | 1 293 745 |         |
| PLANTATION CROPS   | -  | -         | 3 213     | 88 262    | 215 543   | 371 288   | 751 410   | 1 024 878 | 1 076 878 | 1 082 781 | 1 083 339 | 1 083 339 | 1 083 339    | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 |         |
| LIVESTOCK  | -  | -         | 3 649     | 10 106    | 15 578    | 17 128    | 17 139    | 17 667    | 17 232    | 17 661    | 17 123    | 17 526    | 16 972       | 17 449    | 16 972    | 17 449    | 16 972    | 17 162    | 16 558    | 16 844    | 16 558    | 16 415    | 15 939    | 15 939    | 15 939    | 15 939    |         |
| BIOGAS SYSTEM  | -  | -         | -         | -         | 90 855    | 215 950   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009      | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   |         |
| Farmers cooperatives   | -  | -         | -         | 7 961     | 12 710    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460       | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    |         |
| Road benefits  | -  | -         | -         | 833       | 1 856     | 2 505     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767        | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     |         |
| <b>Sub-total Main Production</b>   | 1 094 655  | 1 094 655 | 1 161 746 | 1 329 105 | 1 604 501 | 1 915 171 | 2 341 355 | 2 615 527 | 2 667 092 | 2 673 423 | 2 673 443 | 2 673 846 | 2 673 293    | 2 673 769 | 2 673 293 | 2 673 769 | 2 673 293 | 2 673 482 | 2 672 878 | 2 673 164 | 2 672 878 | 2 672 735 | 2 672 259 | 2 672 259 | 2 672 259 | 2 672 259 |         |
| <b>By Products</b>   |  |           |           |           |           |           |           |           |           |           |           |           |              |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| LIVESTOCK  | 1 045 748  | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748    | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 | 1 045 748 |         |
| BIOGAS SYSTEM  | -  | -         | -         | -         | 34 071    | 80 981    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128       | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    |         |
| <b>Sub-total Byproducts</b>  | 1 045 748  | 1 045 748 | 1 045 748 | 1 045 748 | 1 079 819 | 1 126 729 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876    | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 | 1 142 876 |         |
| <b>Gross Value Of Production</b>   | 2 140 403  | 2 140 403 | 2 207 494 | 2 374 853 | 2 684 320 | 3 041 900 | 3 484 232 | 3 758 403 | 3 809 968 | 3 816 300 | 3 816 319 | 3 816 722 | 3 816 169    | 3 816 646 | 3 816 169 | 3 816 646 | 3 816 169 | 3 816 359 | 3 815 754 | 3 816 040 | 3 815 754 | 3 815 612 | 3 815 136 | 3 815 136 | 3 815 136 | 3 815 136 |         |
| <b>Production Cost</b>   |  |           |           |           |           |           |           |           |           |           |           |           |              |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| <b>Investment</b>  |  |           |           |           |           |           |           |           |           |           |           |           |              |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| Annual crop Seeds  | 244 763  | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763      | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   | 244 763   |         |
| Planting materials   | 3 949  | 3 949     | 8 131     | 7 929     | 6 366     | 4 668     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514        | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     | 4 514     |         |
| Fertilisers & others   | 14 091   | 14 091    | 16 471    | 17 952    | 18 221    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126       | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    | 18 126    |         |
| Poultry  | -  | -         | 2 104     | 4 760     | 6 545     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120        | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     |         |
| Goat   | -  | -         | 1 742     | 2 976     | 3 058     | 1 632     | 1 632     | 1 632     | 1 701     | 1 731     | 1 709     | 1 632     | 1 632        | 1 701     | 1 731     | 1 709     | 1 632     | 1 632     | 1 632     | 1 701     | 1 731     | 1 709     | 1 556     | 1 445     | 1 360     | -         |         |
| Biogas systems   | -  | -         | -         | -         | 988 050   | 1 644 324 | 1 143 111 | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403      | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403 |
| <b>Sub-total Investment Costs</b>  | 262 804  | 262 804   | 273 210   | 278 380   | 1 267 004 | 1 919 633 | 1 418 266 | 1 084 557 | 1 084 626 | 1 084 656 | 1 084 633 | 1 084 557 | 1 084 557    | 1 084 557 | 1 084 626 | 1 084 656 | 1 084 633 | 1 084 557 | 1 084 557 | 800 634   | 409 783   | 275 254   | 275 231   | 275 078   | 274 967   | 274 882   |         |
| <b>Operating</b>   |  |           |           |           |           |           |           |           |           |           |           |           |              |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| <b>Purchased Inputs</b>  |  |           |           |           |           |           |           |           |           |           |           |           |              |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| Annual crop Seeds  | 53 400   | 53 400    | 53 415    | 52 609    | 51 897    | 52 203    | 52 101    | 51 897    | 52 203    | 52 101    | 51 897    | 52 203    | 52 101       | 51 897    | 52 203    | 52 101    | 51 897    | 52 203    | 52 101    | 51 897    | 52 203    | 52 101    | 51 897    | 52 203    | 52 101    | 51 897    |         |
| Planting materials   | -  | -         | 37 116    | 29 355    | 8 255     | 806       | 214       | 153       | 245       | 214       | 153       | 245       | 214          | 153       | 245       | 214       | 153       | 245       | 214       | 153       | 245       | 214       | 153       | 245       | 214       | 153       |         |
| Fertilisers & others   | 137 543  | 137 543   | 189 267   | 220 028   | 223 255   | 220 015   | 232 575   | 233 254   | 233 649   | 233 570   | 233 412   | 233 649   | 233 570      | 233 412   | 233 649   | 233 570   | 233 412   | 233 649   | 233 570   | 233 412   | 233 649   | 233 570   | 233 412   | 233 649   | 233 570   | 233 412   |         |
| <b>Sub-Total Purchased Inputs</b>  | 190 943  | 190 943   | 279 796   | 301 992   | 283 406   | 282 024   | 284 890   | 285 304   | 286 097   | 285 885   | 285 462   | 286 097   | 285 885      | 285 462   | 286 097   | 285 885   | 285 462   | 286 097   | 285 885   | 285 462   | 286 097   | 285 885   | 285 462   | 286 097   | 285 885   | 285 462   |         |
| <b>Labor</b>   |  |           |           |           |           |           |           |           |           |           |           |           |              |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| Labour   | 291 436  | 291 436   | 373 089   | 393 457   | 376 544   | 377 414   | 385 375   | 392 081   | 394 723   | 395 055   | 395 087   | 395 087   | 395 087      | 395 087   | 395 087   | 395 087   | 395 087   | 395 087   | 395 087   | 395 087   | 395 087   | 395 087   | 395 087   | 395 087   | 395 087   | 395 087   |         |
| <b>Sub-total Operating Costs</b>   | 482 379  | 482 379   | 652 887   | 695 449   | 659 950   | 659 438   | 670 265   | 677 385   | 680 820   | 680 940   | 680 548   | 681 183   | 680 972      | 680 548   | 681 183   | 680 972   | 680 548   | 681 183   | 680 972   | 680 548   | 681 183   | 680 972   | 680 548   | 681 183   | 680 972   | 680 548   |         |
| <b>Sub-Total Production Cost</b>   | 745 183  | 745 183   | 926 097   | 973 829   | 1 926 954 | 2 579 072 | 2 088 531 | 1 761 942 | 1 765 446 | 1 765 596 | 1 765 182 | 1 765 740 | 1 765 529    | 1 765 105 | 1 765 809 | 1 765 628 | 1 765 182 | 1 765 740 | 1 765 529 | 1 481 183 | 1 090 967 | 956 226   | 955 779   | 956 261   | 955 939   | 955 431   |         |
| <b>Other Costs</b>   |  |           |           |           |           |           |           |           |           |           |           |           |              |           |           |           |           |           |           |           |           |           |           |           |           |           |         |
| Other Costs  | -  | 177 556   | 172 611   | 128 823   | 73 546    | 20 121    | -         | -         | -         | -         | -         | -         | -            | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |         |
| <b>OUTFLOWS</b>  | 745 183  | 922 739   | 1 098 708 | 1 102 652 | 2 000 500 | 2 599 193 | 2 088 531 | 1 761 942 | 1 765 446 | 1 765 596 | 1 765 182 | 1 765 740 | 1 765 529    | 1 765 105 | 1 765 809 | 1 765 628 | 1 765 182 | 1 765 740 | 1 765 529 | 1 481 183 | 1 090 967 | 956 226   | 955 779   | 956 261   | 955 939   | 955 431   |         |
| <b>Cash Flow</b>   | 1 395 219  | 1 217 663 | 1 108 786 | 1 272 200 | 683 820   | 442 707   | 1 395 701 | 1 996 461 | 2 044 522 | 2 050 703 | 2 051 137 | 2 050 982 | 2 050 640    | 2 051 540 | 2 050 360 | 2 051 018 | 2 050 987 | 2 050 619 | 2 050 226 | 2 334 857 | 2 724 788 | 2 859 386 | 2 859 356 | 2 858 874 | 2 859 197 | 2 859 705 |         |

IRR = 19.9%, NPV = 1,357,670.05

P. R. CHINA: GUANGXI INTEGRATED AGRICULTURAL DEVELOPMENT PROJECT  
PROJECT DESIGN COMPLETION REPORT – ANNEX 10

| Increments |          |          |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |           |
|------------|----------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1          | 2        | 3        | 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        | 13        | 14        | 15        | 16        | 17        | 18        | 19        | 20        | 21        | 22        | 23        | 24        | 25        |
| -          | 60 230   | 127 289  | 173 303   | 196 185   | 198 916   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   | 199 091   |
| -          | 3 213    | 88 262   | 215 543   | 371 288   | 751 410   | 1 024 878 | 1 076 878 | 1 082 781 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 | 1 083 339 |
| -          | 3 649    | 10 106   | 15 578    | 17 128    | 17 139    | 17 667    | 17 232    | 17 661    | 17 123    | 17 526    | 16 972    | 17 449    | 16 972    | 17 449    | 16 972    | 17 162    | 16 558    | 16 844    | 16 558    | 16 415    | 15 939    | 15 939    | 15 939    | 15 939    |
| -          | -        | -        | 90 855    | 215 950   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   | 259 009   |
| -          | -        | 7 961    | 12 710    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    | 17 460    |
| -          | -        | 833      | 1 856     | 2 505     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     | 2 767     |
| -          | 67 092   | 234 450  | 509 847   | 820 517   | 1 246 701 | 1 520 872 | 1 572 437 | 1 578 769 | 1 578 788 | 1 579 191 | 1 578 638 | 1 579 115 | 1 578 638 | 1 579 115 | 1 578 638 | 1 578 828 | 1 578 224 | 1 578 509 | 1 578 224 | 1 578 081 | 1 577 605 | 1 577 605 | 1 577 605 | 1 577 605 |
| -          | -        | -        | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |
| -          | -        | -        | 34 071    | 80 981    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    |
| -          | -        | -        | 34 071    | 80 981    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    | 97 128    |
| -          | 67 092   | 234 450  | 543 917   | 901 498   | 1 343 829 | 1 618 000 | 1 669 565 | 1 675 897 | 1 675 917 | 1 676 320 | 1 675 766 | 1 676 243 | 1 675 766 | 1 676 243 | 1 675 766 | 1 675 956 | 1 675 352 | 1 675 637 | 1 675 352 | 1 675 209 | 1 674 733 | 1 674 733 | 1 674 733 | 1 674 733 |
| -          | -        | -        | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |
| -          | 4 181    | 3 980    | 2 417     | 719       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       | 564       |
| -          | 2 379    | 3 861    | 4 130     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     | 4 034     |
| -          | 2 104    | 4 760    | 6 545     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     | 6 120     |
| -          | 1 742    | 2 976    | 3 058     | 1 632     | 1 632     | 1 632     | 1 701     | 1 731     | 1 709     | 1 632     | 1 632     | 1 632     | 1 701     | 1 731     | 1 709     | 1 632     | 1 632     | 1 632     | 1 701     | 1 731     | 1 709     | 1 556     | 1 445     | 1 360     |
| -          | -        | -        | 988 050   | 1 644 324 | 1 143 111 | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 809 403   | 525 480   | 134 560   | -         | -         | -         | -         | -         |
| -          | 10 406   | 15 576   | 1 004 200 | 1 656 830 | 1 155 462 | 821 753   | 821 822   | 821 853   | 821 830   | 821 753   | 821 753   | 821 753   | 821 822   | 821 853   | 821 830   | 821 753   | 821 753   | 537 831   | 146 980   | 12 450    | 12 427    | 12 274    | 12 164    | 12 079    |
| -          | 15       | -791     | -1 503    | -1 197    | -1 299    | -1 503    | -1 197    | -1 299    | -1 503    | -1 197    | -1 299    | -1 503    | -1 197    | -1 299    | -1 503    | -1 197    | -1 299    | -1 503    | -1 197    | -1 299    | -1 503    | -1 197    | -1 299    | -1 503    |
| -          | 37 116   | 29 355   | 8 255     | 806       | 214       | 153       | 245       | 214       | 153       | 245       | 214       | 153       | 245       | 214       | 153       | 245       | 214       | 153       | 245       | 214       | 153       | 245       | 214       | 153       |
| -          | 51 724   | 82 485   | 85 712    | 91 472    | 95 032    | 95 711    | 96 106    | 96 027    | 95 869    | 96 106    | 96 027    | 95 869    | 96 106    | 96 027    | 95 869    | 96 106    | 96 027    | 95 869    | 96 106    | 96 027    | 95 869    | 96 106    | 96 027    | 95 869    |
| -          | 88 855   | 111 049  | 92 463    | 91 081    | 93 947    | 94 360    | 95 154    | 94 942    | 94 519    | 95 154    | 94 942    | 94 519    | 95 154    | 94 942    | 94 519    | 95 154    | 94 942    | 94 519    | 95 154    | 94 942    | 94 519    | 95 154    | 94 942    | 94 519    |
| -          | 81 653   | 102 021  | 85 107    | 85 978    | 93 939    | 100 645   | 103 287   | 103 618   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   | 103 650   |
| -          | 170 507  | 213 070  | 177 570   | 177 059   | 187 886   | 195 005   | 198 441   | 198 560   | 198 169   | 198 804   | 198 592   | 198 169   | 198 804   | 198 592   | 198 169   | 198 804   | 198 592   | 198 169   | 198 804   | 198 592   | 198 169   | 198 804   | 198 592   | 198 169   |
| -          | 180 914  | 228 646  | 1 181 771 | 1 833 889 | 1 343 348 | 1 016 758 | 1 020 263 | 1 020 413 | 1 019 999 | 1 020 557 | 1 020 345 | 1 019 922 | 1 020 626 | 1 020 445 | 1 019 999 | 1 020 557 | 1 020 345 | 736 000   | 345 783   | 211 042   | 210 596   | 211 078   | 210 756   | 210 248   |
| 177 556    | 172 611  | 128 823  | 73 546    | 20 121    | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         | -         |
| 177 556    | 353 525  | 357 469  | 1 255 317 | 1 854 010 | 1 343 348 | 1 016 758 | 1 020 263 | 1 020 413 | 1 019 999 | 1 020 557 | 1 020 345 | 1 019 922 | 1 020 626 | 1 020 445 | 1 019 999 | 1 020 557 | 1 020 345 | 736 000   | 345 783   | 211 042   | 210 596   | 211 078   | 210 756   | 210 248   |
| -177 556   | -286 433 | -123 019 | -711 399  | -952 512  | 481       | 601 242   | 649 303   | 655 484   | 655 918   | 655 763   | 655 421   | 656 321   | 655 140   | 655 798   | 655 768   | 655 399   | 655 006   | 939 638   | 1 329 568 | 1 464 167 | 1 464 137 | 1 463 655 | 1 463 977 | 1 464 485 |

**ANNEX 11. DRAFT PROJECT IMPLEMENTATION MANUAL**

**I. Project Implementation**

1. Implementation of a project funded by IFAD is not simply recording and reporting its financial and physical progresses, the rationale of the project needs to be reiterated and reflected in the course of implementation. In addition to sound financial and physical progresses, the following IFAD Strategic Imperatives and IFAD Specific Aspects should be explicitly emphasized in all the stages of project implementation, inclusively and not exclusively such as planning, implementation, monitoring and reporting. They will also consist of the fundamentals of project M&E, supervision, and impact assessment.

**IFAD Strategic Imperatives and Specific Aspects**

| Strategic Imperatives  | Specific Aspects   |
|--|--|
| <ul style="list-style-type: none"> <li>➤ Promoting innovation in implementation</li> <li>➤ Developing partnerships</li> <li>➤ Knowledge generation</li> <li>➤ Policy dialogue</li> <li>➤ Emphasis on impact achievement</li> </ul> | <ul style="list-style-type: none"> <li>◇ Target group participation</li> <li>◇ Targeting women</li> <li>◇ Targeting the poor</li> <li>◇ Gender mainstreaming</li> <li>◇ Participatory M&amp;E</li> </ul> |

2. Before implementation of the project, the key officers and PMOs' staff of all levels, IAs and VIGs will be trained with the project conception to make them fully understand the strategy and requirements of project implementation for achieving the project objectives. As such the PMOs and IAs should be able to well respond to the following questions:

- Why should the module/activity be implemented? Consideration focuses on if implementation of the module/activity will benefit the project eligible target groups, the poor and women.
- Where will the module/activity be implemented? Selection of “natural” villages in accordance with the project targeting strategy will be critical.
- Who will benefit from implementation of the module/activity? The project will give priority to the poor and female-headed households, although other households are not excluded.
- When and how will the module/activity be implemented? Detail schedule for implementation needs to be worked out and incorporated into related AWPBs.

**A. Project targeting**

3. The project covers about 623 administrative villages of 44 townships in the eight counties. Nevertheless, differences in wealth and conditions exist between these villages, so do between “natural” villages within an administrative village and between households within a “natural” village. Identification of these differences and their demands will be an initial step for targeting process of the project. In this regard, farmer households in the project area will be classified into three categories based on perceived wealth ranking, i.e. better off (A), vulnerable (B), and poor (C), as described under Section A of Chapter III of this report. Project implementation will give priority to the poor and vulnerable households in villages selected with given criteria to maximize the project impact on poverty reduction. It is also expected that villages with high proportion of categories C and B households will receive the priority of project support, while taking into account their demands and conditions. The criteria for selection of eligible villages, farmer cooperatives and households participating in the project activities are summarized as in ANNEX 2.

4. For operational purpose, the methodology for perceived household categorization will use the following procedure: (i) relatively unified criteria for household categorization will be applied to all villages in a county, which allows different proportion for each of the three household categories in different villages. Households under the same category in different villages will be similar in terms of well-being; (ii) the proportion for each of the three household categories in each of the project villages within a county will be estimated by the county and township PMOs with full participation of VIGs, based on available data for villages such as the average annual per capita net income. Households under C-category that have an annual per capita net income below the latest national poverty line, CNY 1196 in 2009, and that under B-category between CNY 1196 and 3000 in 2009; (iii) VIG members together with farmer representatives will identify the households of each category in the village, based on perceived wealth ranking and in line with the given proportion for each of the three categories. However, the criteria used for household categorization may need to be updated from time to time in line with the national criteria for poverty reduction; (iv) categories C and B households



will be the main target groups for the project.

#### Targeting procedure of the project

|  |
|--|
| <p><b>Step 1:</b><br/>Classification of all households in the project area into three categories, A, B and C by using the agreed criteria.</p> <p><b>Step 2:</b><br/>Selection of villages based on given criteria for related project activities. Villages with high proportion of the poor and vulnerable households enjoy priorities of project implementation, while taking into account their demands and conditions.</p> <p><b>Step 3:</b><br/>Project implementation will give priority to the poor and vulnerable households in a given village, although the better-off households are not excluded. Expected beneficiaries by household categories will be reflected in AWPBs and M&amp;E results.</p> |
|--|

#### B. Rules for Module Adjustment

5. The project modules are designed based on overall situation of the project area and discussions with local officers and technicians. An inherent feature of the modular approach is that it facilitates programming adjustments to reflect the specific socio-economic and environmental conditions of a target area before implementation. However, adjustment of any module should maintain its essential elements. Detail guidelines for the adjustment of each module are provided in relevant working papers (WPs). The foreseen adjustments will be applicable mainly in budgetary terms. No adjustment should take place in the areas of module fundamentals including objectives, strategy, targeting and implementation procedures, unless otherwise agreed by IFAD. Summary criteria and rules for the adjustment of modules are as in the following Table.

Summary of Module Adjustment Rules

| Component/Module                              | Rules for module adjustment  |
|---|--|
| Irrigation facilities                         | <ul style="list-style-type: none"> <li>- Unit costs for both branch and lateral canal lining were estimated by following the average situation of canal lining for typical sizes of 60*60 and 40*40 respectively in a given county. They need to be adjusted to fit specific conditions by taking into account the local costs of materials, geography and actual size of the canal to be lined, etc.</li> <li>- The unit costs determined by local engineers for each canal lining will be reported to CPMO for development of AWPBs before implementation.</li> </ul>  |
| Drinking water supply                         | <ul style="list-style-type: none"> <li>- Unit cost for drinking water supply systems of each county was estimated by following the average situation of the given county. It needs to be adjusted to fit specific conditions by taking into account the scale of the system, distance from water source, local costs of materials, and geography, etc.</li> <li>- The unit costs determined by local engineers for each system will be reported to CPMO for development of AWPBs before implementation.</li> </ul>   |
| Village roads                                 | <ul style="list-style-type: none"> <li>- Unit costs for the pavement of both administrative and natural village roads were estimated by following the average situation of a given county. They need to be adjusted to fit specific conditions by taking into account the local costs of materials geography and geological conditions, etc.</li> <li>- The unit costs determined by local engineers for each road will be reported to CPMO for development of AWPBs before implementation.</li> </ul>   |
| Annual/Perennial crops                        | <ul style="list-style-type: none"> <li>- Unit costs for the annual/perennial crops modules were estimated by following the overall average situation of the project counties. It needs to be adjusted to fit specific needs by taking into account the types of crops and varieties to be developed and local costs of materials, etc.</li> <li>- The designed unit costs of the modules can be adjusted by up to 25% by the CPMO on the approval of PPMO; adjustments should be reflected in related AWPBs before implementation.</li> </ul>                            |
| Landrace livestock                            | <ul style="list-style-type: none"> <li>- Unit cost for the landrace livestock module was estimated by following the overall average situation of the project counties. It needs to be adjusted to fit specific needs by taking into account the breeds of livestock to be developed, cost of materials for livestock-sheds improvement, and cost of feedstuff, etc.</li> <li>- The designed unit cost of the module can be adjusted by up to 30% by the CPMO on the approval of PPMO; adjustments should be reflected in related AWPBs before implementation.</li> </ul> |
| Improvement of township agricultural stations | <ul style="list-style-type: none"> <li>- Unit cost for the improvement of township agricultural stations module was estimated by following the overall average situation of the project counties. It needs to be adjusted to fit specific needs by taking into account the area of civil works to be built, costs of building materials, and types of office equipment, training tools and laboratory instruments, etc.</li> </ul>   |
| Institutional support                         | <ul style="list-style-type: none"> <li>- Unit costs for activities under this package were estimated by following the overall average situation of the project counties. They need to be adjusted to fit specific needs by taking into account the area of training centre to be built, costs of building materials, and types and number of office and training equipment and laboratory</li> </ul>   |

|                                |  |
|--------------------------------|--|
|                                | <p>instruments, etc.</p> <p>- The designed unit costs of equipment, furniture, staff training, and trials can be adjusted by up to 20% by the CPMO on the approval of PPMO; adjustments should be reflected in related AWPBs before implementation.</p>  |
| Support to farmer cooperatives | <p>- The module design reflects the situation for a typical 'average' cooperative. This should be adjusted during implementation to reflect the actual situation. Any such adjustment must maintain a clear focus on inclusion of poor and vulnerable households and women as the primary target groups;</p> <p>- Cost items are subsumed and detailed activities can be adjusted to reflect the real needs of each cooperative. Unit costs are subject to the actual situation in different areas;</p> <p>- The designed unit costs of the module activities can be adjusted by up to 20% by the CPMO on the approval of PPMO; adjustments should be reflected in related AWPBs before implementation;</p> <p>- In the case that a project county wants to experiment a county-level umbrella federation of cross-sector cooperatives, two cost packages can be used to support such organizational capacity building, with focus on building organizational services to member cooperatives. Such initiative needs to be reflected and approved through the process of AWPB.</p> |
| Value chain enhancement        | <p>- The package is formulated based on needs presented by project counties at design. This could be adjusted during implementation to reflect the actual needs and costs in different areas; adjustments should be reflected in related AWPBs before implementation.</p>  |
| Biogas systems                 | <p>- Unit cost for the biogas system module was estimated by following the overall average situation of the project counties. It needs to be adjusted to fit specific needs by taking into account the costs of digester's building, renovations of latrine and livestock-shed, improvement of kitchen, and beneficiaries' training, etc. Adjustments should be reflected in related AWPBs before implementation.</p>  |
| Village sanitation improvement | <p>- Unit cost for the village sanitation improvement module was estimated by following the overall average situation of villages in the target areas. It needs to be adjusted to fit specific needs by taking into account the length of sewer, drainage ditches and track to be constructed, number of wastewater septic tanks and garbage collection station needed, local costs of materials, and beneficiaries' training, etc. Adjustments should be reflected in related AWPBs before implementation;</p> <p>- The designed unit cost of the module can be adjusted by up to 20% by the CPMO on the approval of PPMO; adjustments should be reflected in related AWPBs before implementation.</p>  |

## II. Development of Annual Work Plan and Budget (AWPB)

6. Annual Work Plan and Budget (AWPB) is a planning and management tool for the project implementation. Its development will be based on the demands of target groups through participatory approach and fully engage the IAs. An AWPB will include, among other things, the financial and physical progresses that have been made, a detailed description of planned project activities over the period, a procurement plan for at least 18 months, and a plan for implementation of activities by semester. AWPBs will also reflect the recommendations made by the last Project Review mission as well as corresponding actions taken and their effect.

7. The CPMOs will be responsible for the preparation of AWPB for each fiscal year and submit it to the PPMO for consolidation after its approval of county PLGs. The PPMO will consolidate the AWPBs prepared by the CPMOs and submit it to IFAD for "no objection" review. AWPB for the first year will be submitted to IFAD before start-up of the project. From the second year on, the PPMO will submit consolidated AWPBs to IFAD for its comments before the 31<sup>st</sup> of October each year. If no comments on the AWPBs from IFAD within 30 days after receipt, the AWPBs will deem approved by IFAD. Importantly, PMOs at all levels should be aware of available resources in the formulation of AWPBs and submit them to respective PLGs for review and clearance. Project implementation should be compliance with the AWPBs substantially in the form cleared by the PLGs and IFAD. If required, the CPMOs, through the PPMO, may propose adjustment of AWPB during implementation, which will become effective upon approval by the PPMO and after obtaining no objection from IFAD.

8. An important basis of formulating AWPBs is the project Logical Framework (log frame) that clearly sets up the project outputs, outcomes, and objectives. Their fulfilment will be monitored and evaluated (M&E) through the measurement of indicators that have been set up correspondingly. M&E results will indicate if the implementation of project activities gives appropriate outputs and outcomes towards to achieving the objectives. Therefore, they will be used as guidance of developing the next AWPB. Adjustment of activities or implementation modalities will be necessary when formulating AWPB if M&E results have indicated that implementation of the activities could not result in the achievement of project objectives, or otherwise, the project log frame will need to be revised. This close linkage among log frame, AWPB and M&E will constitute part of the project's knowledge management.

### III. Implementation Arrangement

9. The project covers a large scope of activities, including the development of irrigation facilities, drinking water supply, construction of village roads, development of cash crops and livestock, technical extension, marketing support, and village sanitation improvement. Implementation of these activities, including related trainings for beneficiaries and the development of operation and maintenance mechanisms of project outputs, will remain with the implementing agencies of level.

#### Project Implementation Arrangement

| Project Modules/Interventions         | Implementing Agencies     |
|---------------------------------------|---------------------------|
| Irrigation facilities                 | Bureau of Water Resources |
| Drinking water supply facilities      | Bureau of Water Resources |
| Village roads                         | Bureau of Transportation  |
| Annual cash crops                     | Bureau of Agriculture     |
| Perennial cash crops                  | Bureau of Agriculture     |
| Landrace livestock                    | Bureau of Livestock       |
| Enhancement of township agro-stations | Bureau of Agriculture     |
| Support to farmer cooperatives        | Bureau of Agriculture     |
| Value chain enhancement               | Bureau of Agriculture     |
| Biogas system                         | Rural Energy Office       |
| Village sanitation improvement        | Bureau of Agriculture     |

10. The project will integrate various activities to achieve a synergistic effect for poverty reduction in the project area, linking together the improvement of community productive assets, the development of market-oriented agro-products, the enhancement of farmers' access to technical and information services and to remunerative markets, and the improvement of village sanitation. In other words, several project activities will go together in eligible villages for synergistic effect of the activities. An integrated planning for the implementation of project modules/activities will be essential in this regard.

### IV. Financial Management

11. The IFAD loan will be extended to the Government on modified ordinary Terms and conditions, i.e. at a variable interest rate established semi-annually by IFAD, with a maturity period of eighteen years including a grace period of five years<sup>15</sup>. The proceeds of the IFAD loan will be passed on to the GZAR Provincial Government, on the same terms and conditions without additional charges, from the Ministry of Finance (MOF) at national level. GZAR will in turn pass on the resources, to each of the project counties on terms and conditions dictated by the level of poverty of each county; relatively well off counties will be expected to pay back the resources, while the poorer ones will not. The DOF and BOFs will represent the respective levels of government to receive and pass on the loan funds. At county level, the funds will be transferred from BOFs to PMOs and the later will forward the funds to relevant IAs for project implementation in accordance with expenditures incurred under approved AWPBs. The IFAD loan proceeds will be repaid by the Government and under no circumstances will the IAs and beneficiaries be required to repay the loan funds except for the financing of the value-chain facilities under the package of value chain enhancement.

12. The provision and channelling of Government counterpart funds will follow the prevailing domestic financial management procedure. Assurances will be given as to the commitment of the provincial government for providing these counterpart funds in a timely manner to facilitate smooth project implementation and coherence.

13. A Designated Account denominated in United States Dollar (USD) will be opened and maintained by the DOF of GZAR in a bank acceptable to IFAD, through which all IFAD funding will be channelled. An initial deposit of USD 6.0 million, approximately equal to projected eligible expenditures over the first four months of implementation, will be deposited into this account once the loan becomes effective, on the basis of a Withdrawal Application (WA) submitted by the DOF. Subsequent replenishments of the Designated Account will be effected through the submission of WAs, in accordance with IFAD procedures as set out in the Financing Agreement for the project. The initial deposit will constitute the 'authorized amount' of the Designated Account. All withdrawals must be in line with projected expenditures as detailed in approved AWPBs. The CPMOs and PPMO will be

<sup>15</sup> The Government requested aligning the usual grace period of the loans on ordinary terms and conditions, namely 3 years, with the implementation period of 5 years for the GIADP to allow the loan repayments to IFAD to start after the completion date. The request was endorsed by IFAD Management and will be recommended to the Executive Board for approval.

responsible for the preparation and consolidation of WAs respectively, which will be approved by the PLG at each level prior to being submitted through the DOF to IFAD.

14. Project Accounts denominated in Chinese Yuan (CNY) will be opened and maintained by the PPMO and county BOFs and CPMOs in commercial banks acceptable to IFAD. The majority of project loan funds will flow from the Designated Account held by DOF to the Project Accounts held by BOFs and then to the Project accounts held by CPMOs. A small part of loan funds will flow from the Designated Account to the Project Account held by the PPMO in accordance with the projected eligible project expenditures.

139. The followings are the SOE thresholds recommended for the project; the IFAD Financing Agreement will provide details of such requirements.

- i) Expenditures pertaining to Category 1 (civil works: irrigation, village roads and water supply) up to a threshold of USD 300,000;
- ii) Expenditures pertaining to Category 2 (civil works: buildings) up to a threshold of USD 300,000;
- iii) Expenditures pertaining to vehicles, equipment and materials up to a threshold of USD 100,000; and
- iv) Expenditures pertaining to consulting services up to a threshold of USD 20,000.

## V. Procurement

15. Procurement of goods, works and consulting services financed under the Project shall be subject to the provisions of the Borrower's national procedures to the extent that they are consistent with the provisions of the "IFAD Procurement Guidelines" as such guidelines may be amended from time to time. The procurement method to be applied in each particular case will depend on the nature of the expenditure and the estimated value of the contract. To the extent possible, the goods, works and consulting services financed by the IFAD loan shall be bulked into sizeable bid packages in such a manner so as to permit optimal use of competitive bidding. Under all circumstances, procurement of the project will have to be well documented for post review by IFAD and for audit purposes.

16. The main items of goods to be procured for GIADP are vehicles, office and technical equipment and furniture. Vehicles are suggested to be procured following the local competitive bidding (LCB) method. Other goods and materials will be procured following the local shopping (LS) procedure as appropriate. Civil works will involve the construction of rural infrastructure, including irrigation and drinking water supply facilities and village roads, and the construction of counties' training centres. They will be procured by using LCB or LS, depending on the nature of expenditure and the estimated value of the related contract. Technical services, training, workshops and studies for the project will be procured by using the LS method. The facilities for value chain enhancement will be procured through LCB or LS. Implementation of all modules will be entrusted to the respective Technical Bureaux at county level.

17. **Prior Review Thresholds:** Details on procurement review by IFAD, including prior and post reviews; modifications etc. are explained in Appendix I of the IFAD Procurement Guideline Manual. The CPMOs will adhere to the National including those of the Provincial and IFAD procurement requirements and maintain all relevant documents, bids, purchase orders and payment vouchers for post review by IFAD and for audit purpose. Suggested threshold limits for Prior Review by IFAD are as follows:

- award of any contract for construction of village roads, irrigation improvement, water supply, buildings or any other civil works estimated to cost USD1000,000 or more;
- award of any contract for goods (vehicles, equipment and materials) estimated to cost USD200,000 or more; and
- Award of any contract for consulting services to cost USD 50,000 or more or any single source selection using QCBS (quality and cost based selection) or CQS (costs and quality selection) methods.

18. All bidding documents and contracts for the procurement of goods, works and services financed by IFAD loan will include a provision requiring contractors to:

- Allow full inspection by IFAD of all bid documentation and related records;
- Maintain all documents and records related to the bid or contract for three years after completion of the bid or contract; and
- Cooperate with agents or representatives of IFAD carrying out an audit or investigation.

## VI. Monitoring and Evaluation (M&E)

19. The GIADP will establish an effective and efficient M&E system from provincial PMO through county and township PMOs down to the VIGs. The system will operate in line with IFAD's M&E guideline. The M&E officers of the PPMO and CPMOs will be responsible for monitoring and evaluating project implementation and sharing the lessons learnt semi-annually and annually with all stakeholders in order to improve project implementation and finally achieve project objectives. In this M&E system's functioning effectively, M&E start-up workshops for the project will be essential. In this regard, IFAD's experts or consultants should provide start-up training to the M&E officers of PPMO and CPMOs, the later will then train relevant officers and staff of IAs, township PMOs and VIGs. During project implementation, M&E training will be held on as-required basis, but at least once a year.

20. The M&E officers of CPMOs will arrange the collection of M&E data in accordance with agreed indicators and report to the PPMO after consolidation of county level. VIG members will be responsible for collecting household-level M&E data to avoid repeat counting, particularly in terms of participants by sex and by modules, beneficiary households by module/activities, and other indicators as required. M&E data concerning institutions and staff training will be collected by the IAs. The PPMO will consolidate M&E data reported by CPMOs and report semi-annually and annually to IFAD.

21. M&E results will indicate if the implementation of modules/activities generates outputs and outcomes towards achieving the project objectives. Therefore, they will be used as guidance in developing the coming AWPB. Adjustment of modules/packages or implementation modalities will be necessary when developing AWPBs if the M&E results will have indicated that implementation of the activities could not contribute to achieving the project objectives in line with the log frame; or otherwise, the project logframe will need to be revised. There is a close linkage among the log frame, M&E and AWPBs.

## VII. Project Reporting

22. During implementation, reporting and impact assessment of the project will be executed regularly by the PMOs. For reminding purpose and avoiding unnecessary delay, the schedule for regular reporting and impact assessment is summarized as in the following Table.

Timeframe of Project Reporting

| Reporting/Assessment           | Reporting schedule   |
|--------------------------------|--|
| Submission of AWPBs            | AWPB for a fiscal year will be submitted to IFAD for "no objection" review in October of previous year (Narrative report and attached Tables)                                |
| Submission of procurement plan | It will be submitted to IFAD for "no objection" review, together with AWPB each year   |
| Submission of progress report  | January & July of each year (including attached Tables)  |
| Submission of RIMS Tables      | 1 <sup>st</sup> level indicators: January each year, attaching to the progress report;<br>2 <sup>nd</sup> level and impact indicators: the coming January after RIMS survey. |
| Submission of M&E Tables       | January & July of each year, attaching to the progress report.   |
| Submission of audit report     | Before end of June each audit year   |
| Baseline survey                | In the period of project design  |
| Mid-term RIMS survey           | Before Mid-Term Review   |
| Completion RIMS survey         | Before project completion Review   |

## ANNEX 12. COMPLIANCE WITH IFAD POLICIES

### I. IFAD's Strategic Framework for 2011-2015

1. The goal of IFAD's strategic framework for 2011-2015 is to empower poor rural women and men in developing countries to achieve higher incomes and improved food security. Its objectives are to ensure that poor rural people have better access to, and the skills and organization they need to take advantage of:

- ◆ Natural resources, especially secure access to land and water, and improved natural resource management and conservation practices;
- ◆ Improved agricultural technologies and effective production services;
- ◆ A broad range of financial services;
- ◆ Transparent and competitive markets for agricultural inputs and produce;
- ◆ Opportunities for rural off-farm employment and enterprise development;
- ◆ Local and national policy and programming processes.

### II. IFAD's Country Strategy

2. IFAD's country strategy will continue to support the Government's rural poverty reduction goals enshrined in the 12<sup>th</sup> FYP and related poverty reduction strategies, which are closely aligned to the MDGs. Within IFAD's overarching goal of *enabling poor rural people improve their food security, raise their incomes and strengthen their resilience*, the latest COSOP (2011-2015) will have three strategic objectives (SOs).

- a. **Strategic Objective (SO) 1: - The rural poor in targeted areas sustainably use enhanced productive natural and economic assets, and improved technology and advisory services, in a changing environment and market conditions.** This will be achieved through, *inter-alias*: establishing high-yielding grain production areas with increased grain productivity per hectare of land; systematic planning and development of location specific agricultural production systems and products; promotion of post disaster restoration mechanisms for agricultural production systems; soil fertility improvement; rural infrastructure improvement; introduction of quality seeds and adoption of advanced agricultural techniques; improvement of the extension services; optimum use of small-sized modernised agricultural mechanisation; improved agricultural product quality and food safety measures; improvement of the rural environment and hygiene; improved nutrition for the rural poor; supporting renewable energy projects; water & soil conservation; adaptation to climate change; eco-restoration; biodiversity; arresting land degradation and restoring degraded lands; and agricultural research and extension of low-cost, environment friendly, and pro-poor technologies. Some of the key outcome indicators for SO1 include: the proportion of targeted households reporting a satisfactory increase in agricultural productivity, leading to increased incomes and food security.
- b. **Strategic Objective (SO) 2: - The rural poor and their organisations are enabled to take advantage of improved market access and financial services for increased income generation and enhanced resilience to risks.** This will be pursued through, *inter-alias*: restructuring of the agricultural sector to combine production increases with value chain development for major agricultural commodities; developing locally suited agricultural industries to encompass improved processing, storage and marketing of agricultural products; providing skills training; improving awareness on risks and promoting appropriate adaptation and mitigation measures; improving farmers' business skills through business development services; promoting employment opportunities and vocational training; providing support for functioning specialized farmers' cooperatives and small-sized enterprises; improving social and agricultural insurance mechanisms; and providing suitable financial services. Some key indicators will include: the number and percentage of poor households and their associations that received financial services and marketed their products at remunerative prices.
- c. **Strategic Objective (SO) 3: - Enhanced South-South cooperation and knowledge management provide opportunities for sharing knowledge generated from innovations and scaling up good practices in rural development.** This will be supported essentially by: broad knowledge gathering, storage, and sharing; establishment of a platform for cooperation; and

seeking partnerships with other member countries of IFAD on rural poverty alleviation best practices. Some of the key outcome indicators for SO3 include: the number of functioning knowledge networks involving China; and the number and frequency of south-south cooperation events held.

3. The **key cross-cutting issues** in the country programme to be considered during the COSOP period include: (a) natural resource management within the context of climate change and natural disasters; (b) gender mainstreaming in development programmes and policy dialogue; (c) support for the decentralization agenda towards farmers' organizations or cooperatives and their platforms; and (d) pursuit of innovation and scaling up best practices.

### III. Compliance of GIADP with IFAD's Policies

4. The design of GIADP is in compliance with IFAD's policies. Key elements are shown as in the following Table.

| Major concerns    | Project design of GIADP  | Status of compliance |
|-------------------|--|----------------------|
| Project objective | The objective of GIADP is to increase revenues from agricultural production for the rural poor and women. It will demonstrate its success through: (i) scaled-up innovative approaches for rural livelihood enhancement; ii) improved access of poor men and women to community assets, markets, information and technology; iii) improved household asset ownership; and iv) socially and economically empowered women and ethnic minorities. | Yes                  |
| Targeting         | GIADP's strategy is to target the rural poor, women and ethnic minorities. Criteria for selection of beneficiary villages and households are designed to ensure the targeting.   | Yes                  |
| Gender sensitive  | Gender mainstreaming strategy has been designed for GIADP, M&E indicators for women's participation in planning, implementation and management of the project have been developed.   | Yes                  |
| Governance        | GIADP will be implemented through approaches at grassroots level by the establishment of VIGs. Project's planning will be conducted through the development of AWPBs in participatory manner.  | Yes                  |
| Innovation        | GIADP is designed with innovative approach. Strategy for capturing, documenting and scaling-up of innovations resulting from the project's implementation and management has been designed.  | Yes                  |
| Access            | One of the GIADP's objectives is to improve the access of rural poor men and women to community's productive assets, markets, information and technologies.  | Yes                  |
| Scaling-up        | One of the GIADP's objectives is to scale-up innovative approaches for rural livelihood enhancement. Strategy for scaling-up of innovations resulting from the project's implementation and management has been designed.  | Yes                  |
| Climate change    | Climate-related risks are analysed and measures to mitigate the impact of climate changes are designed, including the improvement and development of irrigation facilities in particular, awareness training for technical extension agents and farmers in response to climate change, adoption of new technologies including water-saving irrigation, development and introduction of drought resistant crop varieties, etc..                 | Yes                  |

### IV. Environmental and Social Review Note

#### A. Brief description of the Project

1. The International Fund for Agricultural Development (IFAD) fielded a fact finding mission to Guangxi Zhuang Autonomous Region (GZAR) of the People's Republic of China during January 16-26, 2010. The mission was to analyze the appropriateness of the newly-proposed counties/townships for the Guangxi Integrated Agricultural Development Project and to develop project activities to help assigning an appropriate set of expertise and tasks for the upcoming design mission. The project was initially named Guangxi Zuo-You River Watershed Rural Development Project and its concept was

approved by IFAD in June 2010. An IFAD design mission was fielded in August 2010 to develop the project proposal based on the report prepared by the Government, but the mission was terminated in its half-way at the instance of the Government. Since then some changes in terms of selection of project counties/townships and project activities were proposed by the Government. IFAD detailed design mission prepared the full document during March/April 2011. The design completion mission visited the project area during July 2011 and held discussion with the government and also with the respective county government and finalised the report. The proposed project, Guangxi Integrated Agricultural Development Project will be the first one under the IFAD COSOP (2010).

2. The project under discussion is a follow on project to the IFAD-funded, “WEST GUANGXI POVERTY-ALLEVIATION PROJECT”. Applying the agreed criteria and taking into account the government’s priorities, eight counties were selected for the implementation of the project: among them Longzhou, Leye, Duan are nationally classified poverty counties, and Bei Lui, Cenxi, Tengxian, Yongfu and Pingle are vulnerable ones. Within these counties, 44 townships are identified as project focus areas. The vulnerable rural population with an annual per capita income ranging between CNY1196 and CNY3000 accounts for about 53% of the total population. Thus, the project targets the poor and vulnerable rural population and both these groups account for 60 % of the total population in the project area.

3. Both modular and activity-wise approaches are applied in the project design and implementation. The modular approach allows greater flexibility in planning, costing, integration and implementation than the traditional approaches and thus allowing the project to respond more effectively to beneficiary needs, while maintaining the rigour required in committing resources and ensuring better internal and external controls of expenditures. A module is defined as a set of inter-related activities aimed at achieving specific objective that can be implemented independent of other modules, and can be easily replicated in other areas. A module includes all variable costs required for implementation of the activities concerned. Activities within a module are interrelated but independent of activities of other modules.

4. The main aspects of the project are to: i) improve the living and production conditions of the rural population by developing community infrastructure including irrigation facilities, village roads, and drinking water supply; ii) increase the cash incomes of farmers by developing niche and cash crops through diversifying agricultural activities in the project area; iii) support the rural poor, especially the women to expand their sources of incomes through the development of landrace animals that are experiencing a strong market demand; iv) improve the access of rural population both men and women to updated techniques and information by improving the township agro-extension service network and enhancing the capacity and effectiveness of extension service delivery; v) improve the service conditions and capacity of the technical training centres and the provision of essential equipment which are yet to have appropriate conditions to undertake their tasks; vi) strengthen the capacity of farmers by improving the members’ connection with value-added chain; vii) improve the rural environment and sanitation by reducing the dependence of rural households on firewood for cooking and introducing environment-friendly practices of animal and human excreta management, while promoting the development of rural renewable energy and reducing the drudgery of rural women; and viii) improve the sanitary conditions of rural habitat.

5. The project goal is to pilot successful innovative approaches to rural development and poverty reduction, which are replicable on a larger scale in other poor areas by government and other donors. Specific objective of the project is to increase revenues from agricultural production and farmers incomes. The project will demonstrate its success through the following indicators: (i) scaled-up innovative approaches for rural livelihood enhancement; ii) improved access of poor men and women to community assets, markets, information and technology; iii) improved household assets ownership; and iv) socially and economically empowered women and ethnic minorities.

6. The targeted project area consists of selected communities vulnerable to or already facing poverty in the hilly regions of GZAR. The project will focus on communities where poverty is more intense, but will also include vulnerable communities in the project area.

## **B. Major site characteristics**

7. Guangxi Zhuang Autonomous Region (GZAR) is located in the western part of China, facing Beibuwan Gulf in the south with a total length of 1,500 km of coast line and bordering Viet Nam on the southwest. Home of about 50 million people, the population of the ethnic minorities accounts for about



38%, whilst the Han Chinese account for the remaining 62% of Guangxi's population. About 64% of the population resides in rural areas. The GNI per capita stands at about USD 2,430 in 2009, which places Guangxi among the poorest of the 31 provinces and regions in China.

8. Located in a subtropical area with humid and monsoon climate, Guangxi has long and hot summer, and occasional cold winter, with distinct dry and rainy seasons. The annual average temperature ranges between 17°C - 23°C (62.6°F and 73.4°F), with a frost-free period exceeding 300 days in a year. The annual rainfall averages between 1,000mm to 2,800mm. Guangxi is surrounded by long and unbroken chains of mountains, with its central part constituting a land of gentle karsts hills and plains.

9. The project area has the common characteristics of a poverty region. For many generations, farmers have been relying on the limited area of farmland and holding of few numbers of animals. The main causes of poverty are: (i) small land holdings, averaging 0.07 ha per capita. (ii) very limited access to capital for starting income-generating activities; (ii) poor infrastructure, especially irrigation facilities and village roads; (iii) lack of access to markets and information; (iii) low capacity of farmers due to limited knowledge and scarce access to improved agricultural technology; (iv) natural calamities, such as droughts and floods, occurring almost annually etc.

10. The Project's strategic approach identifies eligible counties and townships for the project through analysis of available data and in-depth dialogue with representatives of Government. Targeting at village and household levels will further require defining participatory approaches during project implementation. Project implementation will focus on the poor and vulnerable households, including the integration of those households within the strategies for community wealth building thus finally targeting the whole community. Poor villages will be identified using the prevailing national poverty criteria.

### **C. Issues in Natural Resources Management**

11. GZAR's current **environmental issues** include: (i) soil erosion; (ii) inadequate waste management; (iii) surface and underground water pollution; (iv) need for the protection of forests and agricultural land; (v) inadequate arrangements for the management of fertilizers and toxic pesticides.

12. In the project area, personnel and economic development of both male and female stakeholders from vulnerable and poor families is limited by poor road infrastructure. To strengthen the community resilience to frequently occurring natural calamities, improving the access of rural poor to markets, information and technical services, and developing commercialized production of agriculture, the project interventions includes the following community infrastructure facilities: (i) improvement of irrigation facilities, mainly the lining of lateral and branch irrigation canals; (ii) construction of community supply facilities of safe drinking water; and (iii) paving of village roads with concrete and connecting "administrative" villages and their constituent "natural" (smaller and scattered) villages are regarded as effective measures for rural development and poverty reduction at current stage.

13. To increase the cash income of farmers, appropriate niche and cash crops are identified and supported under the project. The project interventions are mainly focusing on the capacity building and productivity improvement; aspects of improved agricultural practices are also considered for the maintenance or re-establishment of soil fertility and mitigation measures to soil erosion.

14. Landrace animals are experiencing a strong market demand in the country, therefore the development of landrace animals can be strengthened to support the rural poor and esp. women to extend their income sources. However, the environmentally sound integration of animal husbandry will be respected in order to avoid surface and underground water pollution.

### **D. Potential social and environmental impacts and risks**

15. Social impacts will be positive due to supporting and affirmative actions included in the design for the poor and vulnerable groups; these include community infrastructure improvement, agricultural production and marketing support, personal development training activities to improve access of the poor to community assets, markets, information and technology, and to improve households' asset ownership. The project implementation will promote women's active participation in the project activities, thus enhancing women's incremental revenues which gradually will empower them to take over a decisive role in family and community.

16. Project activities are focusing on the needs and benefits of the rural poor and vulnerable households. Community-level activities will reflect the needs of the poor and vulnerable households through participatory planning. The poor and vulnerable groups will be given priority. In the village implementing groups (VIG) with some 5-7 farmer representatives drawn from different household well-being categories including category B and C of the farmer representatives, women representation will be no less than 50%.

17. Most of the project interventions focus on capacity building and improving productivity, few activities concern the construction of mini-scale infrastructure. In the implementation of all components, the project will adopt an environmentally-sensitive approach so that no project activity causes any adverse environmental impacts but improves the quality of the environment.

18. Environmental improvement will be a part of the project activities. In this respect, the Rural Environment Improvement Component will improve the rural environment and sanitation by reducing the dependence of rural households on firewood for cooking and introducing environmental-friendly practices of animal and human waste management, promote the development of rural renewable energy and reducing the burden of rural women, and improve the sanitary conditions of rural habitats such as sewer construction, wastewater septic tanks, separate garbage collection, construction of drainage ditches, building of inner-village tracks.

19. Technical support will provide guidance to ensure that all initiatives contribute to environmental conservation and avoid the use of practices that may cause potential damage to the environment.

20. An activity that may potentially have negative impact on the environment is the construction of community infrastructure such as village roads, canal lining, and drinking water supply systems. Since the construction of safe drinking water supply system mainly concerns the collection, purification and distribution of water to the household, potential negative impact on the environment, if any, would be on excavating new ditches for laying the pipelines. At headwork, land slopes will be protected from sliding and erosion. In case of canal lining, only existing earthen canals are taken up for lining and this doesn't cause any adverse environmental impact. The pavement of village roads with concrete is carried out mainly on the existing earthen and gravel roads; therefore there is no adverse impact. As pre-cautionary measures, all executing agencies and the contractors will be trained in aspects dealing with environment protection. The respective county project manager is also responsible for paying attention to the measures required for environment protection during the project implementation.

21. The activity of extended and improved animal husbandry practices requires more fodder production and this will be supplied through the use of marginal land for grass production, thus minimizing grazing. Number of livestock modules is only a few and not more than 320 and these are not likely to cause any adverse impact. More over stall-feeding is advised.

22. With improved drinking water supply system, waste water production will increase correspondingly and it may lead to pollution. By use of biogas digesters, sewer and septic tank system, wastewater is treated to some extent based on the Chinese rural wastewater treatment guidelines and pollution can be controlled and reduced. Therefore, combination of water supply and wastewater treatment system can actually reduce the wastewater pollution significantly.

23. In the "Agricultural Production and Marketing Support Project" there are no major concerns with regard to negative environmental impacts due to the fact that no major investments are made in infrastructure. Rather, the potential environmental impact of the Project is expected to be positive, in that several Project interventions aim at improving environmental conditions through provision of support for, among others: (a) organic farming and certification of these farms to access certain market niches; (b) training on Good Agricultural Practices (GAP); (c) promotion of organic production of vegetables (using organic fertilizers, etc); and (d) environmental education has been considered under the Training activities of the farmers cooperatives sub-component.

24. The project is located in the hilly with good vegetative cover. Irrigation and upland development will improve the productivity of crop land. This is expected to open the way to releasing marginal annually-cropped land to ecologically and economically sustainable use, for instance, perennial cash crops. All road construction will be carried out in conformity with Chinese national standards. The proposed water sources for drinking-water meet Chinese standards and will be of better quality than present sources. Thus the proposed project is expected to have positive environmental effects.

## E. Environmental category

25. The environmental analysis conducted on various project interventions has determined that the Project would not have any negative environmental impact. But it would have a positive impact on environment because of the implementation of biogas system modules and village sanitation improvement modules. In addition, environmental education has also been included under the training programmes such as proper use of fertilizer, garbage separation and collection, wastewater treatment, etc.

26. On the basis of above mentioned features of the project and according to IFAD's Administrative Procedures for Environmental and Social Assessment in the Project Cycle (EB 2009/96/R.7) the Project could be classified as **Category B**.

## F. Recommended features to improve natural resource management and mitigate environmental concerns

27. Measures included in the design to eliminate or reduce potential adverse environmental and social impacts, and to make better use of opportunities are presented in Table below.

| Project Interventions                                      | Environmental Impact  |   | Measures included to mitigate negative impacts in the Project Design   |
|--|---|---|--|
|  | Positive impact   | Negative Impact   |  |
| 1. Irrigation improvement: lining of existing canals       | Conveyance losses of water minimised;<br>Irrigation schedule streamlined or turn system introduced;<br>Reduction in labour for O&M.<br>Equitable distribution ensured.                              | Soil erosion during construction  | The implementing agencies will ensure that construction period minimised and safe measures to minimise soil erosion ensured.   |
| 2. Safe drinking water supply: construction of new schemes | Supply of quality water for domestic uses;<br>Drudgery of women in collecting water from far points minimised;<br>Considerable control of diseases due to quality water supply;                     | Soil erosion at headwork sites and along excavation for pipelines during construction;<br>Possible pollution due to increased disposal of waste water;<br>Increased demand for water; | Awareness training provided to the beneficiaries and contractors regard to safe guard procedures for minimising soil erosion;<br>Waste water to the extent possible integrated with existing biogas systems at household level and awareness training to beneficiaries regarding disposal of waste water   |
| 3. Village roads: Pavement of existing village roads       | Frequent damages and resulting soil erosion averted and minimised;<br>Road shoulders well-protected;  | Soil erosion during construction;<br>Landslides;<br>Changes of water courses during construction;<br>Possible felling of trees as land clearance                                      | Construction period minimised;<br>Only existing road alignments are improved and there are no land clearance or felling of trees or other vegetation;<br>No water courses diverted;<br>Prior to commencing construction detailed environmental assessment is undertaken to ensure that all risks averted;<br>Protection of slopes and vegetation along road alignment. |
| 4. Production of annual and perennial cash crops:          | Tree crops provide green cover;<br>Soil erosion hazards minimised   | Increased use of chemical fertilisers for crop production and polluting downstream water bodies   | Training of beneficiaries on environmental-friendly production practices;<br>Promotion of organic farming and use of bio-fertilisers and pesticides;   |
| 5. Livestock: poultry and goat-farming                     |   | Increased animal wastes;<br>Impact on rangelands and over-grazing;  | Animal wastes integrated with biogas system at household level;<br>Farmers encouraged to use stall-feeding and minimise over-grazing of grasslands and rangelands;   |
| 9. Biogas system construction                              | Animal and human wastes effectively used and pollution minimised;<br>Slurries used as organic fertilisers;<br>Considerable reduction of methane<br>Reduction in collection of firewood for cooking; | No adverse impact   | Training beneficiaries in operations and maintenance;<br>Encouraging biogas slurries as organic fertilisers.   |
| 10. Village  | Rural environment improved;   | No adverse impact   | Training beneficiaries in operations and   |

|  |   |   |  |
|--|---|---|--|
| sanitation improvement                                     | Safe disposal of organic and inorganic wastes   |   | maintenance;   |
| 1. Irrigation improvement: lining of existing canals       | Conveyance losses of water minimised;<br>Irrigation schedule streamlined or turn system introduced;<br>Reduction in labour for O&M.<br>Equitable distribution ensured.          | Soil erosion during construction  | The implementing agencies will ensure that construction period minimised and safe measures to minimise soil erosion ensured.   |
| 2. Safe drinking water supply: construction of new schemes | Supply of quality water for domestic uses;<br>Drudgery of women in collecting water from far points minimised;<br>Considerable control of diseases due to quality water supply; | Soil erosion at headwork sites and along excavation for pipelines during construction;<br>Possible pollution due to increased disposal of waste water;<br>Increased demand for water; | Awareness training provided to the beneficiaries and contractors regard to safe guard procedures for minimising soil erosion;<br>Waste water to the extent possible integrated with existing biogas systems at household level and awareness training to beneficiaries regarding disposal of waste water   |
| 3. Village roads: Pavement of existing village roads       | Frequent damages and resulting soil erosion averted and minimised;<br>Road shoulders well-protected;  | Soil erosion during construction;<br>Land slides;<br>Changes of water courses during construction;<br>Possible felling of trees as land clearance                                     | Construction period minimised;<br>Only existing road alignments are improved and there are no land clearance or felling of trees or other vegetation;<br>No water courses diverted;<br>Prior to commencing construction detailed environmental assessment is undertaken to ensure that all risks averted;<br>Protection of slopes and vegetation along road alignment. |

### G. Monitoring aspects

28. Participatory environmental monitoring will be ensured specifically at village level as environment and natural resource management is an integral part of their strategic plans for development. In these plans, stakeholders will develop their own vision on environmental and social issues of their community, besides the production aspects, and will define appropriate indicators for self-monitoring. The Project will provide necessary training in this respect.

29. The Project will carry out during its implementation several systematizations for knowledge management; it is foreseen that at least one of the studies will deal with social and environmental impacts of project interventions. Particularly it is proposed that an analysis is made of number and type of environmental and social concerns included by stakeholders in strategic plans of the project.

### H. Record of consultations

30. Several consultations on social and environmental issues were held during the Project Design Mission with male and female members from the target group, potential target communities and officials at the county and provincial level. Results of these consultations have been incorporated in the Reports of the Design Completion Mission

### **ANNEX 13. CONTENTS OF THE PROJECT LIFE FILE**

1. Project inception note
  2. MOU of inception mission
  3. Detail design mission reports
  4. MOU of detail design mission
  5. Design completion mission reports
  6. Responses to the suggestions of RRN and CPMT minutes
  7. MOU of design completion mission
1. **People**           The country programme management team for the GIADP include the following:
- (a) Sana F.K Jatta, CPM, APR
  - (b) Mohamed Bouselham, Loans Officer, CFS;
  - (c) Sylvie Martin, Legal Counsel, LEG;
  - (d) Ladislao Rubio (LAC);
  - (e) Thomas Rath (APR);
  - (f) Cheikh Sourang (PTA);
  - (g) Sun Yinhong, CPO, China ICO.
2. **Project generated knowledge**           The following project design related documents are available in the Programme Life File:
- A** Project Concept Note
  - B** MOU of inception mission
  - C** MOU of detail design mission
  - D** Project Detailed Design Report (including 8 Working Papers)
  - E** QER Reviewers Recommendation Note and CPMT minutes
  - F** QE Panel Report
  - G** Responses to the suggestions of RRN and CPMT minutes
  - H** MOU of design completion mission
  - I** Project Design Completion mission report (including 13 Annexes)
  - J** The Working Papers, prepared by the project detailed design mission, including the following:
    - (a) Working Paper 1: Community Infrastructure Improvement
    - (b) Working Paper 2: Sustainable Agricultural Development
    - (c) Working Paper 3: Household-based Agro-Forestry Development

- (d) Working Paper 4: Gender and Social Development
- (e) Working Paper 5: Environmental and Social Review Note
- (f) Working Paper 6: Project Costs and Financing
- (g) Working Paper 7: Project Economic and Financial Analysis
- (h) Working Paper 9: Root and Tuber Crops
- (i) Working Paper 10: Procurement Plan (2012-2013).

3. **Knowledge base** Other relevant documents include:

- (a) Results-Based Country Strategic Opportunities Programme (RB-COSOP) for China 2011-2015;
- (b) Baseline survey to be prepared during the further design stages
- (c) Draft Country Programme Review (2010/2011).

4. A summary of some of these and other relevant key files for GIADP that were prepared or compiled during the design phase of the project are included in the working papers or placed on the project life file on XDESK.