SFG4042 V1

World Bank-financed Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project

Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project Social Assessment Report

Jiangxi PMO

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ABBREVIATIONS

FGD	-	Focus Group Discussion
M&E	-	Monitoring and Evaluation
MLS	-	Minimum Living Security
PMO	-	Project Management Office
RAP	-	Resettlement Action Plan
SA	-	Social Assessment

Units

Currency unit	=	Yuan (RMB)
US$1.00	=	RMB6.33
1 hectare	=	15 mu

1 Introduction

1.1 Background of the Project

China has a large population, in which agricultural population accounts for 50.32% (6th national census). However, safe drinking water is not available to a large population of China. The Chinese government proposed water resources reform and development as a priority in 2011 for the first time, and state leaders also lay particular stress on the importance of drinking water safety, especially in rural areas. Wastewater management is closely associated with drinking water safety, because if rural wastewater is not collected and treated effectively, the water environment will be polluted directly. For this reason, it is proposed in the 13th Five-year Plan (2016-2020) of China that the issues of rural drinking water safety and water pollution control are addressed by improving infrastructure and management.

The 13th Five-year Plan of Jiangxi Province proposes to build a strong modern agricultural province. Since drinking water safety and a healthy water environment are prerequisites to sustainable agriculture, the plan also proposes rural water supply and wastewater management as priorities, and province-level poverty alleviation measures. The plan proposes that tap water supply will cover about 90% of the province's agricultural population, county-level wastewater treatment rate will reach 85%, and substantial improvement in wastewater treatment (current water quality is below Class V or worse) in rural areas below the county level will be realized by 2020. In order to help fulfill this goal, the Jiangxi Provincial Government has applied for a loan with the World Bank to implement the Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project (hereinafter, the "Project").

7 counties (districts) have been identified for the Project based on: 1) the urgency of the realistic demand for urban and rural water supply and wastewater treatment; 2) the willingness of the local government to participate in the Project, and its commitment to constructing the Project, offering counterpart funds, conducting operation and maintenance at the operation stage, and providing financial subsidies for rural water price; and 3) the cooperative relationship with Jiangxi Water Resources Investment Group. These 7 counties (districts) are Yongxin County, Ji'an City; Linchuan District, Dongxiang District, Jinxi County and Nanfeng County, Fuzhou City; Xiushui County, Jiujiang City; and Leping City, Jingdezhen City. See Table 1-1.

Table 1-1 Summary of project counties (districts)

Province	Prefecture-level city	County / district
Jiangxi	Ji'an	Yongxin County
	Fuzhou	Linchuan District
		Dongxiang District
		Jinxi County
		Nanfeng County
	Jiujiang	Xiushui County
	Jingdezhen	Leping City (county level)

The project design is demand-oriented, and based on local medium- and long-term development plans to explore patterns and management mechanisms for integrated urban and rural water supply, and rural wastewater management. In the Project, engineering and non-engineering measures will be taken to improve local integrated urban and rural water supply capacity by constructing waterworks, reconstructing and extending water supply networks, etc., and to improve local rural wastewater treatment capacity by constructing wastewater treatment facilities and sewer

lines, etc.

1.2 SA tasks

This SA aims to learn different stakeholders' expectations and needs, and identify the Project's positive and negative impacts through fieldwork, thereby helping the owner take a series of measures to ensure the extensive and fair participation of stakeholders, and maximize the Project's benefits. Therefore, the main objectives of this SA are:

1) Identifying primary stakeholders, and learning their interests and needs through extensive participation;

2) Learning the Project's potential social impacts, including positive and negative impacts, and potential social risks;

3) Learning attitudes of women, poor population, etc. to the Project, and identifying the Project's impacts on them;

4) Strengthening public participation, giving advice on optimizing the project design, and establishing information disclosure and grievance redress mechanisms;

5) Developing social and gender action plans to evade project risks and realize the project objectives; and

6) Developing a participation plan for beneficiaries, so that urban and rural residents are aware of and participate in the Project as much as possible.

In addition, project awareness among the public will be increased and public participation promoted through project information communication, experience sharing, etc. during public consultation.

1.3 SA methods

The task force conducted fieldwork in the 7 counties (districts) with the support of the Jiangxi PMO (Jiangxi Water Resources Investment Group) and local PMOs from December 22, 2016 to May 29, 2017.

1) Organizational interview and data collection

Organizational interviews were conducted with the PMOs, owners and agencies concerned of the 7 counties (districts), and relevant basic data and literatures collected.

Figure 1-1 Data collection (upper left: Xiushui County; upper right: Nanfeng County; lower left: Dongxiang District; lower right: Leping City)

2) FGD

FGDs were held to learn local residents' needs for the Project, the Project's impacts on them, and their comments and suggestions.

Figure 1-2 FGD (left: Xiushui County; right: Leping City)

41 FGDs were held in the 7 counties (districts), with 574 participants in total, including 164 women, accounting for 28.6%; 82 vulnerable people, accounting for 14.3%; 123 old people, accounting for 21.4%, and 205 village committee and villager representatives, accounting for 35.7%. See Table 1-2.

Table 1-2 Summary of FGDs

County / district	Number of FGDs	Number of participants				
		Women	Old people	Vulnerable people	Village committee and villager reps.	Total
Xiushui County	7	28	21	14	35	**98**
Nanfeng County	4	16	12	8	20	**56**
Yongxin County	9	36	27	18	45	**126**
Linchuan District	1	4	3	2	5	**14**
Jinxi County	3	12	9	6	15	**42**
Dongxiang District	7	28	21	14	35	**98**
Leping City	10	40	30	20	50	**140**
Total	**41**	**164**	**123**	**82**	**205**	**574**

3) Key informant interview

Key informant interviews were conducted at the county (district), township (sub-district) and

village (community) levels to provide inputs into project design and implementation, including heads of county (district) agencies concerned, such as land and resources bureau, construction bureau, water resources bureau, women's federation, poverty reduction office, ethnic and religious affairs bureau, poverty reduction bureau, and water supply company, as well as village (community) officials.

Figure 1-3 Key informant interviews

184 key informants were interviewed in total, including 31 in Xiushui County, accounting for 16.8%; 23 in Nanfeng County, accounting for 12.5%; 30 in Yongxin County, accounting for 16.3%; 20 in Linchuan District, accounting for 10.9%; 26 in Jinxi County, accounting for 14.1%; 32 in Dongxiang District, accounting for 17.4%; and 22 in Leping City, accounting for 12.0%. See Table 1-3.

Table 1-3 Summary of key informant interviews

County / district	Village officials	Heads of government agencies	Total
Xiushui County	6	25	**31**
Nanfeng County	3	20	**23**
Yongxin County	9	21	**30**
Linchuan District	1	19	**20**
Jinxi County	3	23	**26**
Dongxiang District	6	26	**32**
Leping City	8	14	**22**
Total	**36**	**148**	**184**

4) Questionnaire survey

The task force conducted a questionnaire survey, with 340 copies distributed and 323 valid copies recovered, with a validity rate of 95.0%, including 38 copies in Xiushui County, 43 copies in Nanfeng County, 51 copies in Yongxin County, 72 copies in Jinxi County, 55 copies in Dongxiang District, 53 copies in Leping City and 11 copies in Linchuan District.

Figure 1-4 Questionnaire survey (*upper left: Xiushui County; upper right: Jinxi County; lower left: Dongxiang District; lower right: Leping City)*

See Table 1-4 for the distribution of the samples of the questionnaire survey.

Table 1-4 Distribution of samples

County / district	Number of copies	Percent (%)
Xiushui County	38	11.8
Nanfeng County	43	13.3
Yongxin County	51	15.8
Linchuan District	72	22.3
Jinxi County	55	17.0
Dongxiang District	53	16.4
Leping City	11	3.4
Total	323	100

The questionnaire database was established and analyzed using the IBM SPSS software. See Table 1-5.

Table 1-5 Basic information of valid samples

Indicator	Values
Gender	Male, 54.8%; female 45.2%
Age	18-28 years, 6.8%, 29-40 years, 26.3%, 41-65 years, 52.3%, 65 years or above, 14.6%
Urban/rural	Rural, 87.6%; urban, 12.4%
Household head	Yes, 45.2%; no, 54.8%
Educational level	Illiterate, 14.9%; primary school, 29.7%; junior high school, 38.7%; senior high school/secondary technical school, 13.3%; junior college or above, 3.4%
Occupation	Civil servant, 2.5%; worker of public institution, 0.9%; worker of enterprise,

	2.8%; self-employer, 15.2%; freelancer, 8.0%; unemployed, 0.3%; retiree, 1.5%; farmer, 56.7%; migrant worker, 8.4%; other, 3.7%

5) Field investigation

The task force conducted a field investigation on the sites of the proposed waterworks, pump stations and pipelines in the 7 counties (districts) for a more practical and objective understanding.

Figure 1-5 Field investigation

1.4 Key concerns

This SA has the following key concerns:

1) Identifying primary stakeholders, and learning their attitudes to and needs for the Project;

2) Identifying the Project's potential social impacts;

3) Analyzing the Project's impacts on poor population, especially their willingness and ability to pay;

4) Analyzing the Project's impacts on women and their needs for the Project;

5) Learning information disclosure and public participation, including the APs' awareness of, support for and participation in the Project;

6) Including social factors in the project design, and proposing measures to evade or reduce negative impacts; and

7) Developing a participation plan for beneficiaries, so that urban and rural residents are aware of and participate in the Project as much as possible.

2 Socioeconomic Profile of the Project Area

2.1 Definition of the project area

The project area includes Yongxin County, Ji'an City; Linchuan District, Dongxiang District, Jinxi County and Nanfeng County, Fuzhou City; Xiushui County, Jiujiang City; and Leping City, Jingdezhen City. See Figure 2-1.

Figure 2-1 Location map of the project counties (districts)

2.2 Socioeconomic profile

2.2.1 Geographic location

Jiangxi Province is located in southeastern China, between north latitude 24°7′-29°9′ and east longitude 114°02′-118°28′, close to central China, south of the middle and lower Yangtze River, bordering Zhejiang and Fujian Provinces on the east, Guangdong Province on the south, Hunan Province on the west, and Hubei and Anhui Provinces on the north, and close to central cities like Wuhan, Nanjing and Shanghai. Jiangxi has a land area of 166,900 km^2, and governs 11 prefecture-level cities, and 100 counties (county-level cities / districts). The provincial capital is

Nanchang.

The Project covers 7 counties (districts), namely Xiushui County, Nanfeng County, Yongxin County, Linchuan District, Jinxi County, Dongxiang District and Leping City.

Xiushui County is located in northwestern Jiangxi, at the junction of Jiangxi, Hubei and Hunan Provinces, with a land area of 4,505 km², being the county with the largest land area in Jiangxi.

Nanfeng County is located in eastern Jiangxi, and is a well-known orange producing area, boasting convenient traffic, and an advantaged geographic location.

Yongxin County is located in central western Jiangxi, between east longitude 113°50′-114°29′ and north latitude 26°47′-27°14′, with a land area of 2,195 km², 318 km away from Nanchang City and 99 km away from Ji'an City.

Linchuan District is located in eastern Jiangxi and the middle Fuhe River, between east longitude 116°04′-116°39′ and north latitude 27°31-28°14′.

Jinxi County is located in eastern Jiangxi and the middle Fuhe River, with a land area of 1,358 km².

Dongxiang District is located in northeastern Jiangxi, being the north gate of Fuzhou City, between east longitude 116°20′-116°51′ and north latitude 28°02′-28°30′, with a land area of 1,275 km².

Leping City is located in northeastern Jiangxi and the middle Le'an River, between east longitude 113°53′36″-117°32′40″ and north latitude 28°42′14″-29°13′14″, enjoying convenient traffic and boasting a beautiful landscape.

2.2.2 Economy

Among the 7 counties (districts), Linchuan District has the highest GDP of 34.16 billion yuan, and Yongxin County has the lowest GDP of 8.45 billion yuan. The average annual income of urban residents of the project area is higher than that of rural residents in the project area. The average annual income of urban residents of Linchuan District (30,530 yuan) and Leping City (26,785 yuan) is higher than the provincial average, and the average annual income of rural residents of Nanfeng County (17,147 yuan), Linchuan District (13,925 yuan), Jinxi County (11,582 yuan) and Leping City (12,729 yuan) is higher than the provincial average. Leping City has the highest fiscal revenue of 3.7 billion yuan, and Yongxin County has the lowest fiscal revenue of 1 billion yuan. Generally, the 7 counties (districts) are highly representative of local social and economic development. See Table 2-1.

Table 2-1 Summary of key economic and social indicators of the project counties / districts (2015)

Division	Land area (km^2)	Income of urban residents (yuan)	Income of rural residents (yuan)	GDP (00 million yuan)	Fiscal revenue (00 million yuan)	Percentage to provincial fiscal revenue (%)
Xiushui County	4504	22224	7599	130.2	23.2	0.8
Nanfeng County	1913	25513	**17147**	105.4	11.7	0.4
Yongxin County	2195	19517	7587	84.5	10.0	0.3
Linchuan District	2121	**30530**	**13925**	341.6	21.1	0.7
Jinxi County	1358	23914	**11582**	72.2	10.1	0.3
Dongxiang District	1267.5	19324.7	9495.2	97.9	14.7	0.5
Leping City	1980	**26785**	**12729**	265.1	37.0	1.2
Jiangxi Province	167,000	26500	11139	16723.8	3021.5	/

Source: county (district) statistical yearbooks or national economic and social development reports

2.2.3 Population

According to the Statistical Report 2015 on National Economic and Social Development of Jiangxi Province, at the end of 2015, Jiangxi Province had a registered population of 12.668 households with 45.656 million people, including a male population of 23.437 million, accounting for 51.3%; a female population of 22.219 million, accounting for 48.7%, a male-female ratio of 105.5:100, an agricultural population of 22.089 million, accounting for 48.4%; a nonagricultural population of 23.568 million, accounting for 51.6%, and a population density of 273.6/km^2.

At the end of 2015, Xiushui County had a registered population of 236,000 households with 871,000 people, including a male population of 455,000, accounting for 52.2%; a female population of 416,000, accounting for 47.8%, a male-female ratio of 109.4:100, an agricultural population of 769,000, accounting for 88.3%; a nonagricultural population of 102,000, accounting for 11.7%, and a population density of 193.3/km^2.

Nanfeng County had a registered population of 96,000 households with 313,000, including a male population of 165,000, accounting for 52.7%; a female population of 148,000, accounting for 47.3%, a male-female ratio of 111.5:100, an agricultural population of 253,000, accounting for 80.8%; a nonagricultural population of 60,000, accounting for 19.2%, and a population density of 163.6/km^2.

Yongxin County had a registered population of 527,800; an agricultural population of 289,000, accounting for 54.7%; a nonagricultural population of 239,000, accounting for 45.3%, and a population density of 240.5/km^2.

Linchuan District had a registered population of 1.211 million, including a male population of 646,000, accounting for 53.3%; a female population of 565,000, accounting for 46.7%, a male-female ratio of 114.3:100, an agricultural population of 709,000, accounting for 58.5%; a nonagricultural population of 502,000, accounting for 41.5%, and a population density of 570.9/km^2.

Jinxi County had a registered population of 301,000, including a male population of 156,000, accounting for 51.8%; a female population of 145,000, accounting for 48.2%, a male-female ratio of 107.6:100, an agricultural population of 191,000, accounting for 63.5%; a nonagricultural population of 110,000, accounting for 36.5%, and a population density of 221.6/km^2.

Dongxiang District had a registered population of 447,000, including a male population of 233,000, accounting for 52.1%; a female population of 214,000, accounting for 47.9%, a male-female ratio of 108.9:100, an agricultural population of 237,000, accounting for 53.0%; a nonagricultural population of 210,000, accounting for 47.0%, and a population density of 352.7/km^2.

Leping City had a registered population of 275,000 households with 932,000, including a male population of 499,000, accounting for 53.5%; a female population of 432,000, accounting for 46.5%, a male-female ratio of 115.5:100, an agricultural population of 618,000, accounting for 66.3%; a nonagricultural population of 314,000, accounting for 33.7%, and a population density of 470.7/km^2.

See Table 2-2.

Table 2-2 Summary of key population of the project counties / districts (2015)

Indicator	Jiangxi Province	Xiushui County	Nanfeng County	Yongxin County	Linchuan District	Jinxi County	Dongxiang District	Leping City
Number of households (0,000)	1266.9	23.6	9.6	18.86	40.7	10.3	15.3	27.5
Population (0,000)	4565.6	87.1	31.3	52.46	121.1	30.12	44.7	93.2
Males (0,000)	2343.7	45.5	16.5	27.50	64.6	15.6	23.3	49.9
Females (0,000)	2221,9	41.6	14.8	24.95	56.5	14.5	21.4	43.2
Population density (/km^2)	273.6	193.3	163.6	240.5	570.9	221.6	352.7	470.7
Agricultural population (0,000)	2208.9	76.9	25.3	43.21	70.9	19.19	23.7	61.8

2.2.4 Ethnic minorities

Jiangxi is a province in which minority residents are scattered in all counties, cities and districts. According to the 6th national census, there are 54 ethnic minorities in Jiangxi, with a total population of 152,000, accounting for 0.34% of Jiangxi's population. 13 ethnic minorities have a population of over 1,000, including She, Hui, Mongolian, Miao and Manchu. Jiangxi has 8 minority Xiangs, 82 minority administrative villages and over 400 minority village groups.

In recent years, the development of minority areas in Jiangxi has been accelerated under a new pattern in order to maintain social stability. The Regulations of Jiangxi Province for the Protection of Rights and Interests of Ethnic Minorities, and the Guidelines for Accelerating the Economic and Social Development of Minority Areas have been promulgated to provide legal support.

Among the 7 counties (districts), minority settlements are scattered in Nanfeng County, Jinxi County, Dongxiang District and Leping City, namely Jinxian She Village in Shishan Town, Nanfeng County; Lanjia She Group of Taiping Village and Chunjian Group of Heyuan Village in Xiaohuang Town, Jinxi County; Zhangyuanlanjia She Group of Shanbi Village, Dongxiang District; and Yaochong Yao Village in Leping City. In view of this, the task force identified minority impacts in the 7 counties (districts) carefully with the assistance of the local PMOs.

According to the survey: 1) The minority population in the project area is scattered, mostly being She, Hui, Mongolian, Miao and Manchu people entering the project area for marriage and work. **However, this minority population is very small, and they have no fixed community, no common language and no common culture, and show no difference from the mainstream ethnic group of Han in terms of social welfare, rights, protection, cultural customs and lifestyle**. In addition, local minority residents enjoy the same public services as the Han people.

2) The scattered minority settlements in 4 project counties (districts) (Jinxian She Village in Shishan Town, Nanfeng County; Lanjia She Group of Taiping Village and Chunjian Group of Heyuan Village in Xiaohuang Town, Jinxi County; Zhangyuanlanjia She Group of Shanbi Village, Dongxiang District; and Yaochong Yao Village in Leping City) are not within the project area.

3) No minority population will be affected by LA and HD for the Project. Minority residents will benefit from the Project indirectly other than directly, and the Project will have almost no negative impact on them.

Therefore, **no ethnic minority development plan will be developed for the Project**. See Table 2-3.

Table 2-3 Range of the project area in Nanfeng County, Jinxi County, Dongxiang District and Leping City

County / district	Subcomponent	Township	Villages / groups	
Nanfeng County	Shishan Town Water Supply	Shishan Town	Shishan, Xicun, Meixi, Guanzhuang, Guantang, Pingbu, Guanchao, Luoxi, Cuiyun, Baofang	**"Jinxian She Village" not in the range**
	Qiawan Town Water Supply	Qiawan Town	Qiawan, Shangdian, Jiangkeng, Changling, Xiping, Taoyuan, Jiajin	
	Laixi Xiang Water Supply	Laixi Xiang	Laixi, Yangmeikeng, Xishan, Jiulian	
Jinxi County	No.2 WWTP Pipeline Extension	Shuangtang Town	Market town, Duitang, Guanbian, Bolin, Zhuqiao, Wushi	**"Lanjia She Group of Taiping Village and Chunjian Group of Heyuan**
		Heshi Town	Chonglu, Xiaogong, Tiannan	
	Huangtong Xiang Water Supply	Huangtong Xiang	Hewan, Dunhou, Huangtong, Zengjia, Guanwang, Gaoqiao	
	Chenfangji Xiang Water Supply	Chenfangji Xiang, Liuli	Chenfang, Chenghu, Tufang, Gaoping, Xiqiao, Hefang, Tangxia, Huangyuan, Yinshan, Shangzhuang, Pingtang,	

		Xiang, Heshi Market Town	Tuoshan, Runhu, Dongyuan, Dujia, Liuli, Bei'an, Xintang, Pujie, Dageng, Qiling, Heshi, Hufang, Boyuan, Aotang, Hujie, Lianqiao, Tangxia, Gongjia, Chemen, Hangqiao, Pingshang, Chonglu		**Village" not in the range**
Leping City	Extension of Urban Pipelines to Nearby Townships	Jiedu Town	Zuishangqiao, Nanfang, Fangjiatan, Lihong, Bijia, Linli, Shangkengkou, Qianwu, Zhongjia, Zhongjiashan, Weili, Luodu, Pancun, Hubin, Dongfan, Jiangjia, Liwu, Qianwu		**"Yaochong Yao Village" not in the range**
		Hougang Town	Hutang, Panxi, Xingaoqiao, Xichong, Guanjiang, Yifang, Hengyuan Forest Farm, Jiangluo, Guankou, Chengjia		
		Legang Town	Tarui, Houfan, Xiazhu		
	Pipeline Extension of Xingfu Waterworks	Mingkou Town	Lankeng, Daicun, Shangsi, Wuyiqiao		
		Gaojia Town	Niaoshu, Cangtian, Dongjia Farm, Zhuangquan, Muli		
		Hongyan Town	Lijusi Branch Farm, Yangshangang Branch Farm, Xiaokeng Forest Farm, Tealeaf Branch Farm, Forestry Institute, Aquatic Farm, Hucun, Xiabu Segment, Gengxin Forest Farm, Hongluo, Wujia		
		Luci Xiang	Longkou		
	Pipeline Extension of Dongfanghong Waterworks	Luci Xiang	Xianao (Nanxia), Yangtaishan Branch Farm		
		Zhongbu Town	Huangtielu, Tongshan, Tongpo, Yejia, Fangshan, Shanglianzui, Zhongbu		
	Pipeline Extension of Zhenqiao Waterworks	Zhenqiao Town	Diaozhong, Kengpan, Kuqian, Jinshan, Dunshang, Yangfan, Baile, Shenxi, Kengkou, Caijia, Le'an, Xinle, Dajia, Sunjia, Zhenyuan, Tanghu, Xujia, Gutang		
		Legang Town	Kuichen, Yangjia, Zhangjia, Jiangwan, Qianjiang		
	Pipeline Extension of Wukou Waterworks	Wukou Town	Dayuan, Caijia, Shiming, Zhaixia		
	Pipeline Extension of Yongshan Waterworks	Yongshan Town	Yongshan, Lintou, Houtian, Donggang, Liucha, Zhujiachong, Chexi, Minkou, Licun, Shaotian, Hengtang, Guankou, Hengshan		
	Pipeline Extension of Lingang Waterworks	Lingang Town	Zhongbao, Xiabao, Silian, Xiashi		
	Pipeline Extension of Zhongbu Waterworks	Zhongbu Town	Liqiao, Dunjian, Shiping, Zhanghang, Tongjia, Youchashan, Wuqiu, Mengqiao, Wenshan, Gongshu, Nanjieshou, Hedong, Henan, Gaoqiao, Lehua Manganese Mine, beside Leyi Highway, Wantou		
	Pipeline Extension of Nangang Waterworks	Shiligang Town	Nangang, Fengyuan, Huyang, Sanfang, Baita, Jiaoyuan, Wangwu		
	Pipeline Extension for Linli Waterworks Reconstruction / Expansion	Lilin Town	Laowu, Qianbao, Biatu, Xinzhuang, Baitufeng Forest Farm, Chaijia, Maqiao, Puli, Gantang, Xincheng, Sunjie, Chenfan, Fuqian		
Dongxiang District	Urban Pipeline Extension	Bogan Xiang	Beizhuang	Dongmenli, Tangli, Hejia	**"Zhangyuanlanjia She Group of Shanbi Village" not in the range**
			Dabu	Raojia, Linjia, Dabu	
			Yousheng	Jiangjia, Dongteng Industrial Park	
			Bogan	Jieshanghujia, Panshanghujia	
			Liantang	Liantang, Hongjia, Zhantou	
			Xianji	Shanghaolijia, Baojia, Huangjia, Yisiqiao, Xianji, Shijiatang, Houyuan	
			Bicun	Bicun	
		Xiaohuang Town	Fenglin	Guantang, Xigangshang, Tangjia, Dengjia	
			Guangtang	Fanli, Guangchang, Guangtang	
			Xiaoheng	Kuxia, Fanshang	
			Lujia	Chagangshang, Shangzou, Lujia, Donglu, Xirao	
			Feiquan	Jiangxia	
			Shanbi	Chenli, Shangbi, Xiangxing, Xiaojiang, Yatang	
			Sunzhen	Xiangyuanli, Sunjiadun, Lingshang, Wujia, Shanglongmen, Xialongmen	
			Gudun	Shanggudun, Gudun, Pengjia	

			Xiahu	Hubian, Qiaobian	
			Yanghu	Weijia, Zongyifang, Hujiazhuang, Hugangzui, Liyuan	
		Weishangqiao Town and Hongxing Farm	Houxi	Houxi, Wanggukeng, Tuqiao	
			Donggang	Dianqian, Xufang, Lintang	
			Youlutou	Youlutou	
			Chenjie	Tangxia, Dunshangchen, Zhujia	
			Hejia	Xiahe, Jiufang, Zhongyao, Guantang	
		Gangshangji Town and Hongxing Farm	Dongyuan	Shangyu, Xiayu, Dongyuan	
			Qiangui	Qiangui, Shanxiahou	
			Shuinan	Shuinan	
			Yuxi	Yuxi, Huangwan	
			Pingtang	Pingtangbu	
			Xinle	Xinle, Xiaojiazhuang	
			Duanxi	Guanjia	
			Qinghu	Qinghu	
			Hongqi	Hetang	
			Houbian	Lilangzhong, Houbian, Shangtang, Houjiafang	
			Zhengjia (Hongxing Farm)	Zhengjia, Xiachen, Tangxiachengjia	
			Shangli	Xialijia	
		Huwei Xiang	Yangguang	Xiazou, Shangzou, Fengshuxia, Jiejia	
			Chenqiao	Tangxiachengjia, Xiaxie	
			Chentang		
			Shiqiao		
		Dengjia Xiang	Dongjia	Dongjia	
			Junling	Junling	
			Hengyuan	Banqiao, Hengyuan, Xiachantang	
			Lingxia		
			Jifang		
			Guwei	Meifangzui, Guanqiao, Qian’an, Chantang	
			Dengjia	Dianbei	
			Songhu	Guwei, Weijia, Huangjia	
			Shangyang	Shangyang, Yangjia, Zhongyang	
		Xiaogang Town	Yaoshang	Yaoshang, Zhushanxia, Minyuan	
			Nanbian	Xinhefang, Nanbian, Taqian, Chenjia, Yangquanxi, Caojia	
			Zhangfang	Houdun, Qianfang, Daping	
			Pingli	Youlutou	

It can be seen that since the minority settlements in 4 project counties (districts) are not within the project area, the Project will have almost no negative impact on minority residents.

3 Public Participation Process

3.1 Stakeholder identification

Stakeholders refer to individuals or groups that can affect or be affected by the realization of the project objectives. Stakeholders can be divided into primary and secondary stakeholders. Primary stakeholders of the Project include: local residents, including direct beneficiaries and those affected negatively by the Project, and secondary stakeholders include the owners, design agency, construction agencies, supervising agencies and government agencies concerned.

3.1.1 Primary stakeholders

Primary stakeholders of the Project include direct beneficiaries and those affected negatively by the Project.

1) Direct beneficiaries: Direct beneficiaries of the Project are 2,992,357 urban and rural residents in the 534 villages or groups in 47 townships and one farm (Hongxing) in the 7 counties (districts) served by Integrated Rural and Urban Water Supply, and urban and rural residents within the range of Rural Wastewater Management (Zhajin Town, Xiushui County). See Table 3-1.

Table 3-1 Summary of direct beneficiary population

No.	Indicator	Total	Yongxin County	Linchuan District	Dongxiang District	Nanfeng County	Jinxi County	Leping City	Xiushui County
1	Direct beneficiary population	2992357	319684	326700	447900	247969	257795	859600	532709
	Female population	1497052	163740	171500	214067	127008	135342	402300	283095
	Poor population	40132	4889	1566	6968	2315	3994	14901	5499
	Urban population	1623426	180000	240000	287100	200000	150000	273800	292526
	Rural population	1347131	139684	86700	160800	47969	107795	564000	240183
2	Additional water supply capacity (m^3/d)	248000	50000	50000	40000	0	3000	55000	50000
	Urban (m^3/d)	240000	50000	50000	40000	0	0	50000	50000
	Rural (m^3/d)	8000	0	0	0	0	3000	5000	0

2) Those affected negatively by the Project: mainly including 343 households with 1,294 persons affected by permanent LA, and 554 households with 2,052 persons affected by temporary land occupation, also including local vulnerable groups

Table 3-2 Summary of population affected by LA

No.	Type of impact		Yongxin County	Linchuan District	Dongxiang District	Jinxi County	Nanfeng County	Xiushui County	Leping City	Subtotal
1	Permanent LA (mu)		108.8	79.18	91	4.4	0	2	0	285.38
	Where:	Cultivated land	0	0	91	4.4	0	2	0	97.4
2	Permanent occupation of state-owned land (mu)		0	1	0	0	0	0	0	1
3	Temporary land occupation (mu)	Collective	176.4	3	67.6	52	50.28	90.6	360.06	799.94
		State-owned	8.5	58.1	42.1	1.3	7.03	0	71.61	188.64
		Subtotal	184.9	61.1	109.7	53.3	57.31	90.6	431.67	988.58
4	Permanently affected	HH	17	275	42	3	0	6	0	343
		Person	74	973	197	15	0	35	0	1294
5	Temporarily affected	HH	138	2	52	80	39	158	85	554
		Person	599	6	169	326	99	574	279	2052

6	Remarks		Collective woodland acquired	Collective woodland acquired	Collective cultivated land acquired	4.4 mu of irrigated land, affecting 3 households with 15 persons, and 16 mu of non-contracted woodland acquired	50 mu of land acquired in 2012	10 mu of land acquired	Former site, expansion, involving no LA	

3.1.2 Secondary stakeholders

Secondary stakeholders include the owners, design agency, construction agencies, supervising agencies and government agencies concerned.

1) PMOs: The Jiangxi Project Leading Group has been established by the Jiangxi Provincial Water Resources Department, and the Jiangxi PMO established at Jiangxi Water Resources Investment Group for project leadership, management, implementation and supervision. Local project leading groups and PMOs have been established in the 7 counties (districts), responsible for local project implementation.

2) Owners: responsible for project construction, operation, maintenance and coordination

3) Government agencies concerned: including local land and resources bureaus, water resources bureaus, development and reform bureaus, environmental protection bureaus, women's federations, civil affairs bureaus, poverty reduction offices, township governments, village committees, etc.

In addition, secondary stakeholders also include the design agency, construction agencies, etc.

3.2 Public participation process

Since the beginning of project preparation 2016, the Jiangxi and local PMOs have organized a series of public participation and consultation activities. At the preparation stage, the feasibility study agency, SA agency, RAP preparation agency and environmental impact assessment agency conducted information disclosure, public participation and consultation.

1) Information disclosure

A) From the pre-identification stage in 2016, the local PMOs, township governments and village committees have disclosed project information and the village selection criteria by means of meeting, notice, brochure, banner, etc.

B) From June 2016, the local PMOs have disclosed project information to local residents, and collected their attitudes and comments.

C) From December 2016 to May 2017, the RAP preparation agency conducted a sampling socioeconomic survey, disclosed project information, and conducted consultation.

D) From December 2016 to May 2017, the task force conducted collected comments and suggestions on the Project from local residents by means of questionnaire survey, personal interview and FGD.

From 2016 to date, the Jiangxi and local PMOs have released the Project's latest information online many times. See Figure 3-1.

Figure 3-1 Project information disclosure

2) Field investigation

The task force conducted a field investigation on the sites of the proposed waterworks, pump stations and pipelines in the 7 counties (districts) for a more practical and objective understanding. It also learned local residents' economic and social conditions, ability and willingness to pay, key concerns, and expectations for resettlement and compensation, and communicated the relevant policies and preliminary resettlement programs.

Figure 3-2 Field investigation of the task force

3) FGD

In order to learn needs and suggestions of local residents (including urban and rural residents, women, and vulnerable groups), the task force held 41 FGDs in the 7 counties (districts), covering ability and willingness to pay, water use and difficulties, domestic wastewater treatment, etc., involving 574 participants in total, including 164 women, accounting for 28.6%; 82 vulnerable people, accounting for 14.3%; 123 old people, accounting for 21.4%, and 205 village committee and villager representatives, accounting for 35.7%.

Figure 3-3 FGD

4) Key informant interview

Key informant interviews were conducted at the county (district), township (sub-district) and village (community) levels to provide inputs into project design and implementation, including heads of county (district) agencies concerned, such as land and resources bureau, construction bureau, water resources bureau, women's federation, poverty reduction office, ethnic and religious affairs bureau, poverty reduction bureau, and water supply company, as well as village (community) officials. 184 key informants were interviewed in total, including 31 in Xiushui County, accounting for 16.8%; 23 in Nanfeng County, accounting for 12.5%; 30 in Yongxin County, accounting for 16.3%; 20 in Linchuan District, accounting for 10.9%; 26 in Jinxi County, accounting for 14.1%; 32 in Dongxiang District, accounting for 17.4%; and 22 in Leping City, accounting for 12.0%.

Figure 3-4 Key informant interviews

5) Questionnaire survey

The task force also conducted a questionnaire survey and personal interviews in the 7 counties

(districts).

Figure 3-5 Questionnaire survey

In the questionnaire survey, 340 copies were distributed and 323 valid copies recovered, with a validity rate of 95.0%, including 38 copies in Xiushui County, 43 copies in Nanfeng County, 51 copies in Yongxin County, 72 copies in Jinxi County, 55 copies in Dongxiang District, 53 copies in Leping City and 11 copies in Linchuan District.

Table 3-3 Summary of public participation activities

Type	Date	Venue	Key points	Participants
Information disclosure	2016	Affected villages	Information disclosure Survey on village selection	PMOs, township governments, village committees, APs
	Jun. 2016	Affected villages	Information disclosure, and collection of attitudes and comments	PMOs, owners, township and village officials, APs, feasibility study agency
	2016	Websites	Latest project information	PMOs, APs
Field investigation	Dec. 23, 2016 – Jan. 16, 2017 Mar. – May 2017	Affected villages	Sampling socioeconomic survey	PMOs, owners, RAP preparation agency
	Dec. 23, 2016 – Jan. 16, 2017 Mar. 5-29, 2017	Affected villages	Collecting local residents' comments and suggestions by field investigation, questionnaire, interview, etc.	PMOs, owners, SA agency
	Dec. 23, 2016 – Jan. 16, 2017 Mar. 5-29, 2017	Proposed sites	Consultation on project preparation, and collection of suggestions on project optimization	SA agency
Questionnaire survey	Dec. 23, 2016 – Jan. 16, 2017 Mar. 5-29, 2017	Affected villages, homes	340 copies distributed and 323 valid copies recovered (54.8 % male and 45.2 % female)	APs, SA agency
FGD	Dec. 23, 2016 – Jan. 16, 2017 Mar. 5-29, 2017	Affected villages	41 FGDs held with 574 participants in total, including 164 women, 82 vulnerable people, 123 old people and 205 village committee and villager representatives	APs, SA agency
Key informant interview	Dec. 23, 2016 – Jan. 16, 2017 Mar. 5-29, 2017	Agencies concerned, affected villages	184 key informants interviewed in total	Government officials, SA agency

See ***Appendixes 1 and 2*** for details of public participation activities.

3.3 Key findings of public participation

3.3.1 Integrated Rural and Urban Water Supply

1) Project awareness is low.

According to the survey, 84.5% of the respondents are aware of the Project, showing that local residents' awareness of the Project has risen somewhat. The main information source is the village committee, accounting for 48.8%; followed by others, accounting for 18.6%.

Through interviews and FGDs, the task force has found that project awareness among government officials has risen to some extent, but that among villagers or even village officials is still inadequate. Based on the questionnaire survey, indicating that project publicity and public participation should be further strengthened.

Figure 3-6 Personal interviews

2) Local residents use well and tap water mainly, and their satisfaction with tap water is low.

In daily life, 66.6% of the respondents use well water, 23.5% use tap water, 5.3% use river water, 1.9% use bottled water and 2.8% use other water.

Among those using tap water, only 27.9% are satisfied with the current situation of tap water use (6.4% very satisfied and 21.5% satisfied), 31.5% dissatisfied, 33.5% neither satisfied nor dissatisfied, and 7.1% not clear. Among the causes of dissatisfaction, bad water quality accounts for 51.9%, unstable supply for 38.0%, not clear for 5.8% and other for 4.3%.

Table 3-4 Sources of local domestic water

County (district) \ Indicator		Tap water	Well water	Lake / river water	Bottled water	Other
Xiushui County	Frequency	13	10	10	2	3
	Percent (%)	34.2	26.3	26.3	5.2	7.9
Nanfeng County	Frequency	15	24	4	/	/
	Percent (%)	34.9	55.8	9.3	/	/
Yongxin County	Frequency	11	31	2	5	2
	Percent (%)	21.6	60.8	3.9	9.8	3.9
Linchuan District	Frequency	6	2	/	/	3
	Percent (%)	54.5	18.2	/	/	27.3
Jinxi County	Frequency	13	57	1	/	1
	Percent (%)	18.1	79.2	1.4	/	1.4

Dongxiang District	**Frequency**	11	44	/	/	/
	Percent (%)	20.0	80.0	/	/	/
Leping City	**Frequency**	7	46	/	/	/
	Percent (%)	13.2	86.8	/	/	/

3) Local residents generally support the Project; self-owned water sources will be replaced by tap water gradually.

86.7% of the respondents support the Project. In villages not or not fully covered by tap water supply, villagers use well, spring, lake or river water in daily life mainly. In such villages, domestic wastewater is discharged directly into lakes or rivers, or permeates into groundwater without treatment, resulting in water pollution, and threatening the safety of drinking water, so villagers expect the Project to be implemented as early as possible.

Table 3-5 Local residents' support for the Project

Support for the Project					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Supporting	280	86.7	87.0	87.0
	Not supporting	20	6.2	6.2	93.2
	Not clear	22	6.8	6.8	100.0
	Total	322	99.7	100.0	
Missing	System	1	.3		
Total		323	100.0		

If tap water is available, 91.9% of the respondents will stop using well or other water, in which 78.9% will stop using within 5 years, and 30.9% within 1-2 years. Some respondents say that since tap water will be paid for, they will retain self-owned water sources as a supplement or temporary alternative (when tap water supply is insufficient or unavailable).

Local residents will use tap water for the following purposes: ①drinking and cooking, 54.1%, ②daily washing, 19.4%, ③cleaning, 15.3%, ④livestock and poultry, 6.8%, and ⑤other, 4.4%.

Table 3-6 Distribution of periods of disuse of backup water sources during project implementation

Sample size / Period	Sample size	Valid percent (%)	Cumulative percent (%)
1-2 years	100	30.9	30.9
2-3 years	47	14.6	45.5
4-5 years (%)	108	33.4	78.9
5 years or more (%)	42	13	91.9
Total	297	91.9	/

Note: The valid sample size is 323.

4) Needs for project participation

Local residents' participation in project construction, operation and maintenance is a main form of public participation during project implementation. It will enhance their environmental awareness, and increase their personal income.

According to the questionnaire survey, 73.7% of the respondents are willing to do jobs during project construction, operation and maintenance, such as material transport, repair and cleaning, and only 13.2% are unwilling. For those unwilling, some already have stable jobs with considerable

income, and some are too old to work. 13.2% of the respondents will decide if they will do such jobs as the case may be.

Interview 3-1: Mr. Rao, Donggang Village, Weishangqiao Town, Dongxiang District (42 years)

I'm willing to work if the worksite is close to the village. Most rural people can do such jobs. A reward is of course preferred.

3.3.2 Rural Wastewater Management

Based on communication with the local PMOs and owners, the only rural wastewater treatment facility under the Project identified to date is located in Zhajin Town, Xiushui County.

1) Local residents are highly enthusiastic about participating in project construction, and have a strong sense of responsibility.

92.1% of the respondents say that nearby residents are obligated to participate in the routine operation and maintenance of wastewater treatment systems after project completion. If a reward is offered, 86.8% of the respondents are willing to participate.

When asked "How will wastewater treatment systems be operated and maintained after completion?", 65.8% of the respondents think such systems should be operated and maintained by the village, 34.2% think such systems should be operated and maintained by a specialized company engaged by the government. Those choosing the former option think that local villagers are more familiar with village conditions, care more about village affairs, and can solve problems more quickly. Those choosing the latter option think that villagers lack expertise and skills for operation and maintenance.

Interview 3-2: Mr. Xie, Yangkeng Village, Shankou Town, Xiushui County (42 years)

The Project will treat our domestic wastewater centrally and make our village environment better. We will protect the environment actively after its completion.

2) Local residents are highly willing to change habits after project completion, and their potential environmental awareness becomes stronger.

When asked "Are you willing to change your habits after project completion?", 89.5% of the respondents are **very willing**, and 7.9% are willing, totaling 97.4%, while only 2.6% are somewhat unwilling.

If local residents are willing to change their habits, they will change in the following ways first: ①bathing often, 28.9%, ②using flush toilets, 63.2%, ③using less chemical detergents, 2.6%, and ④not throwing litter into ditches and sewers, 5.3%.

Table 3-7 Public perceptions of Rural Wastewater Management in Xiushui County

Perception		Percent (%)
Are local residents obligated to participate in wastewater treatment system operation and maintenance?	Yes	92.1
	No	5.3
	Not clear	2.6
If a certain reward is offered, are you willing to participate in system operation and maintenance?	Yes	86.8
	No	7.9
	Don't know	5.3
How will wastewater treatment	By village	65.8

	By specialized company	34.2
	Other	0
Are you willing to change your habits after project completion?	Very willing	89.5
	Willing	7.9
	Somewhat unwilling	2.6
If you are willing to change your habits, how?	Bathing often	28.9
	Using flush toilets	63.2
	Using less chemical detergents	2.6
	Not throwing litter into ditches and sewers	5.3

4 Current Situation of Domestic Water Use and Wastewater Treatment of Local Residents

4.1 Current situation of domestic water use of local residents

4.1.1 Different expectations for house connection to water supply

1) Different groups of a single village have different drinking water sources, and different levels of willingness for tap water house connection.

In some parts of the project area (e.g., Hengxi Village, Longyuankou Town, Yongxin County; Xunyi Village, Zhengcun Xiang, Xiushui County; Laixi Village, Laixi Town, Nanfeng County), different groups of a single village have different drinking water sources for historical reasons, and residents have significant differences in water quality perception. Village groups in which residents think water quality to be better are less willing for tap water house connection, while those in which residents think water quality to be worse are more willing for tap water house connection.

For example, Xunyi Village, Zhengcun Xiang, Xiushui County (with two village groups) affected by water supply pipeline extension is not covered by tap water supply yet. The water source of one group is well water (Group A), while that the other group spring water (Group B). There is a conventionally established covenant in water source allocation between them. Since the tank and delivery pipeline for spring water are funded and owned by Group B, villagers of Group A have no right to use it. However, well water is shared by both groups. Villagers of Group B usually use spring water, and would use well water only when spring water is in tight supply (serious drought). They are unwilling to use well water because it is of bad quality.

Interview 4-1: Mr. Li, Xunyi Village, Zhengcun Xiang, Xiushui County (50 years)

Well water is somewhat dirty, but we can do nothing about this. We are all willing to use tap water, but preferably not too expensive. Shouldn't the money be borne by the government?

Interview 4-2: Ms Liang, Xunyi Village, Zhengcun Xiang, Xiushui County (53 years)

We always use spring water from the mountain, and do not need tap water. If rainfall is insufficient, we will close the value to avoid any waste. The supply facility is funded by the whole group, and is shared among us for free. Our spring water is not shared with Group A. We use their well water only when we have no other choice.

Villagers of Group A are much more willing for house connection than those of Group B due to the differences in water source and quality. Villagers of Group A using poor quality well water are strongly willing, while those of Group B using high quality spring water are less willing. Villagers of Group A prefer lower or even no charges, and think that this money should be borne by the government.

On the other hand, some residents in Shishan Village, Shishan Town, Nanfeng County will move into a new area where infrastructure and public service facilities (water, electricity, roads, etc.) are already completed, so their willingness for house connection is weak. The water supply network in the new area is funded by local residents, averaging over 2,000 yuan per household.

2) Willingness for tap water house connection depends on well depth and service length.

Villagers who have dug deep wells (mostly put into use around 2000, 20m or more below the ground, costing about 6,000 yuan each) have weak willingness for tap water house connection

because the amount of well water can meet their daily demand, and water quality is better. Those who have dug shallow wells (5-10m below the ground, costing 500 yuan or less) have strong willingness due to unstable well water supply, especially in the dry season, and water quality is worse.

Interview 4-3: Ms Wang, Shishan Village, Shishan Town, Nanfeng County (46 years)

My family's well is shallow for construction and geological reasons, and sometimes water is unavailable.

Interview 4-4: Ms Hong, Zhoushang Village, Lilin Town, Leping City (40 years)

Tap water is of poor quality and often unavailable, so my family has to pump groundwater for cooking, drinking, etc. However, groundwater is also of poor quality, and drinking is now a problem. Moreover, my family is not entitled to social security.

3) Rural residents are less willing to pay water charges, and would follow others in tap water connection.

Local rural residents have been using self-owned water sources for a long time, and do not have the habit of paying for domestic water. The concept of "free water supply" is prevalent among them, reducing their willingness to pay for water. Due to the long-term use of self-owned water sources (wells, springs, etc.), local residents have developed their own habits, and such water sources are in good condition (though not necessarily meeting the safe drinking water standard) most of the time. The head of the Lilin Waterworks in Leping City says that water supply involves certain costs, and the non-collection of water charges will affect the waterworks' operation and development. A waterworks usually supplies water for free for a certain period at the beginning, such as for the first 81 tons, and would then collect water charges at 1.23 yuan/ton. He says that they would strengthen publicity to change villagers' perception that tap water is of poor quality and unsafe, and increase house connection rate.

In addition, local rural residents would consult with and follow other villagers for tap water house connection and water rate.

Interview 4-5: villager, Shangzhang Group of Chenfang Village, Chenfangji Xiang, Jinxi County

I cannot decide if tap water is connected or not alone, and this depends on all villagers. I'm willing to get connected as long as others are.

4) Concerns about water purchase and tap water quality coexist in areas with poor water quality.

In local villages where spring water is unavailable or unclean, residents would buy water from other villages, but such water is relatively expensive, and difficult to transport and store. Those buying water are mostly relatively richer villagers, while poorer villagers can only drink unclean spring water, and have stronger willingness for tap water house connection. However, in some villagers in the project area (e.g., Shankou Town, Xiushui County and Pingbu Village, Shishan Town, Nanfeng County), "tap water" has already been installed (privately funded waterworks that supply simply treated reservoir or river water), but villagers are dissatisfied with the quality and amount of such water, and have to install purifiers in their houses. Such water is often out of supply, especially during holidays, and has a smell of disinfectants, so villagers worry about its quality and safety.

Figure 4-1 Rusty tap and water purifier in a home in Pingbu Village, Nanfeng County

5) There is an urban-rural gap in tap water supply and payment.

Rural residents expect the same quality of tap water as urban residents, but they prefer lower water rates than urban residents, because they think that there is already an income gap between urban and rural residents, and cheaper tap water can benefit more rural residents. In China's urban-rural dualistic structure, rural residents have contributed tremendous human, material and financial resources to urban construction and development, so they think that it is time for urban areas to pay back to rural areas, which should be reflected in water rates. This is because rural residents' income is much lower than that of urban residents, and a lower water rate will reduce their expenditure and financial burden, and allow them to share economic and social development. On the other hand, the treatment of rural domestic wastewater and waste is not included in urban systems, so rural residents should not bear wastewater treatment charges included in the water rate, which is also an embodiment of social fairness and justness.

6) Willingness to use water depends on age, where young people are more willing than old people.

There is significant "age stratification" in willingness to use tap water among rural residents. Young people aged 35 years or below, especially those with children, generally welcome tap water supply, and prefer using tap water, because they long for urban life, most of them have the experience of working in town, and have felt the convenience of urban water supply, and those with children know the importance of safe drinking water for their children's health.

Middle-aged aged 36-60 years (their children are mostly adults) are mostly waiting and seeing. Most of them don't care about tap water connection for economic reasons mainly.

Old people aged above 60 years are mostly used to the current situation, and barely willing for tap water connection, especially in the context of serious rural population aging. In the 7 counties (districts), many rural residents are working outside to make a living, leaving children and old people at home, and some even are working outside with their children.

7) Poor residents are faced with difficulty in tap water connection and water charge payment.

Local poor households have varying levels of poverty, and can be divided into ordinary poor households, MLS households and five-guarantee households. Local rural residents think that more attention should be paid to the ability to pay water charges of poor households, because though water charges are acceptable for most households, tap water connection cost and subsequent

water charges may be considerable for local poor households. Many poor residents have expressed their unwillingness for tap water connection when hearing that they have to pay connection cost and subsequent water charges, because they cannot afford such expenses. In the local context of targeted poverty reduction, an important consideration under the Project is to develop preferential measures for them specially so that they can share the project benefits.

4.1.2 Varying water use scenarios of local residents

1) Non-local tenants and local villagers have an identity difference in using domestic water.

Long-term tenants who rent town or rural storefronts to do business would use more bottled water than local villagers. Local villagers can use spring water for drinking or well water as domestic water, while non-local tenants can only use well water on a compensated basis or are even prohibited from using spring water.

Interview 4-6: Mr. Han, Shishan Village, Shashi Town, Yongxin County (37 years)

This storefront is rented at quite a high price per annum. My family does not use well water in this village, and would buy several bottles of purified water every month. That's not quite expensive.

2) Existing pattern of mixed water use: "well water + river water" or "bottled water + well water + river water".

In some parts of the project area (Lilin Town, Leping City; Shishan Town, Nanfeng County; Longyuankou Town, Yongxin County; Daqiao Town, Xiushui County, etc.), local rural residents usually use well water + river water together in daily life, where well water is usually used for cooking, drinking, food washing, etc., while river water usually used for irrigation, clothes washing, house and courtyard cleaning, etc. Some local residents (e.g., Shankou Town, Xiushui County and Wenzhu Town, Yongxin County) use bottled water + well water + river water together, because they think that well water is not very clean, and would use bottled water for cooking and drinking. Local residents have their own clear logics of water use.

Interview 4-7: Ms Zou, Zhoushang Village, Lilin Town, Leping City (48 years)

Most well water here is of good quality, but water of my family's well is not good, so my family drinks bottled water, bought at 8 yuan per bottle, with 3-4 bottles used per month. Well water is used for clothes washing, chicken feeding, etc.

In Dongxiang District, rural domestic water includes well water and bottled water, where well water is used for clothes and food washing, toilet flushing, etc., while bottled water for direct drinking. Most residents are satisfied with the quality of their own well water, but some residents think that their well water is polluted by wastewater arising from solid waste scouring or septic tank drainage, and has excessive sulfur levels from a nearby copper works.

Interview 4-8: Ms Wang, Xialonggang Group of Zhangfang Village, Xiaogang Town,

Dongxiang District (33 years)

My family is not connected to tap water yet, and uses well water and bottled water. Well water was good in the past, but has been of poor quality since the copper works moved here, and is not good to our health. We expect the copper works to be relocated.

3) New pattern of mixed water use: "tap water + well water" or "tap water + well water + other water"

Among those who support tap water supply, most of them prefer continuing to use well water and other self-owned water sources (spring water, river water, etc.) during the transition period after tap water connection (see Table 3-3). This is an upgraded version of the existing pattern of mixed water use, where water for eating and drinking is now tap water instead of well water / spring water, while water for clothes washing, house cleaning, etc. is now well water / spring water instead of river water. For example, in Qiaoyang Village, Lilin Town, Leping City where tap water supply is available for a free trial period, residents are still using well water under the new pattern of mixed water use of "tap water + well water".

Interview 4-9: Ms Fan, Yangqiao Village, Lilin Town, Leping City (43 years)

Tap water was available in our village not long ago. We would drink tap water in daily life, but use well water for clothes washing, etc. Although tap water is now supplied for free, it will be charged in the future. For purposes not requiring high water quality, well water is okay.

4) Rural residents use "deep well water" at the cost of pumping electricity charges only.

Most wells used by local rural residents are electrically pumped, and they use "deep well water" by paying for electricity charges (about 0.6 yuan/kWh) only. Local rural residents think that such electricity charges are reasonable and acceptable, but tap water is relatively more expensive. This may affect their willingness to pay, and the fixation of the future water rate.

Interview 4-10: Ms Xu, Zhoushang Village, Lilin Town, Leping City (38 years)

We pay for electricity at about 0.6 yuan/kWh only and do not pay for water. That's quite cheap. If tap water is more expensive than well water, we will use less or no tap water.

4.1.3 Water use difficulties facing local residents

1) The amount of well water cannot meet daily water demand.

The use of well water in local rural areas is very prevalent, where well water is pumped manually or electrically. Most rural households have their own wells, rough 6-10 meters deep. If every household in the same village or group has a well, the same groundwater source is shared by multiple users, so that the amount of well water cannot meet daily water demand, which is especially true in the dry season. When well water is insufficient, some villagers have to carry spring

water back home, thereby increasing costs of water use and posing drinking water safety to risks, because spring water tanks are uncovered and have no purification facility, likely to result in water pollution.

Interview 4-11: Mr. Chen, Laixi Village, Laixi Town, Nanfeng County (35 years)

Some families in our village use manually pumped wells, and some use electrically pumped wells. Those using electrically pumped wells have to pay electricity charges. Almost every family has a well, and well water is sometimes not enough.

2) Well and spring water (including bottled water) is unsecure in quality and insufficient in quantity as a domestic water source.

The most common daily domestic water source of local rural residents is well water, and few households use bottled water or spring water. Bottled water and spring water is usually used for eating and drinking, while well water is mostly used for clothes and food washing. Drinking water is separated from domestic water, because well water is polluted by nearby non-enclosed septic tanks, so villagers think that well water is of bad quality and unhealthy.

Figure 4-2 Open and pressure wells in use in Dongxiang District and Nanfeng County

Villagers in Shishan Village, Shishan Town, Nanfeng County say that their main daily domestic water source is spring water. However, the quality of local spring water is unsecure and unstable, sometimes clear and sometimes turbid. Villagers generally think that high-quality and stable tap water is good as their regular domestic water source.

Interview 4-12: Ms Zhao, Shishan Village, Shishan Town, Nanfeng County (38 years)

My family uses spring water from the mountain. It tastes good and is of good quality most of the time. However, it is insufficient in the dry season.

3) The water quality of daily domestic water sources is substandard, threatening

drinking water safety.

Rural residents in the Yongxin County town and nearby areas are generally unwilling to use tap water, and wish to use bottled water, because supplied tap water is of bad quality, and may be actually river water or spring water. There is a mine near the water source, where wastewater may be discharged directly into the river, resulting in excessive heavy metals. In the long run, such water will affect physical health greatly. In addition, rural water supply pipelines are not specially maintained. As a result, many residents have been found to suffer from related diseases, mostly in the late stage. According to interviews in Shashi Town, Yongxin County, current tap water is from a nearby river, with a piggery beside, which would pollute the river, especially in summer. Villagers strongly insist that such river should not be used as the source of tap water.

Interview 4-13: Mr. Li, Luoxi Village, Shashi Town, Yongxin County (49 years)

There is a piggery here, which worsens the surrounding environment, and makes river water quality very bad. Sometimes, it throws pig bodies into the river.

In addition, for technical and financial reasons, most rural septic tanks are “soil pits” without brick lining and cement grouting. They worry that water from septic tanks may permeate through soil into well water, thereby affecting the quality of well water.

Interview 4-14: Mr. Li, Yongxin County (50 years)

In our rural areas, unlike cities, most tap water pipelines are not specially maintained, and water quality is not regularly tested. Water pollution is unknown to us. It is said that many people have been found to suffer from related diseases, mostly in the late stage.

Rural residents who use well water as domestic water think that well water is yellow in color, and some residents who use tap water are dissatisfied with its quality (odor and yellow turbidity) and supply (Shankou Town, Xiushui County). Most rural residents use shallow well water, and some even use river water. In general, residents expect highly of tap water quality improvement, and support the Project strongly.

Interview 4-15: villager, market town of Chenfangji Xiang, Jinxi County

My family uses tap water, but it looks yellow, contains some purities and sometimes emits odor. It is unsuitable for cooking. It is often out of supply, when we have to take water from other families’ wells, which is inconvenient.

Domestic waste littering is very serious in Dongxiang District, resulting in surface water pollution due to rain scouring. There is an non-enclosed septic tank in almost every family, causing

groundwater pollution due to permeation. For this reason, local residents are very concerned about drinking water safety.

Figure 4-3 Open canal in Dongxiang District

Linchuan District, a cradle of gifted scholars, is close to the urban area of Fuzhou City. The project area here is not covered by tap water supply yet, and is subject to serious groundwater pollution. In Lyufang Village, Shangdundu Town, some adults and children would go to the urban area for work or study in the daytime, and would return home at night. Although old people are not strongly eager for tap water, they still expect tap water supply as soon as possible in consideration of their children's health and the convenience of use.

Interview 4-16: Xu XX, Lyufang Village, Shangdundu Town, Linchuan District (68 years)

As you see, all those playing here are old people. We do not want tap water, and do not care much about water cleanliness. However, our children and grandchildren often return home, and expect to use convenient tap water.

4.1.4 Unclear perceptions of tap water among residents

1) There are still vague perceptions about the concept of "tap water".

Spring water used by local rural residents is often connected to houses via pipelines, and is also called "tap water" by local residents. However, this is not what people (especially urban residents) normally think of to be tap water. The task force has found that tap water supplied by the new waterworks constructed under the Project meets the national drinking water standard, and differs from "spring tap water" in a narrow sense perceived by local rural residents. However, due to inadequate publicity and public participation, local rural residents mistake tap water supplied under the Project for "spring tap water" used by them, and are thereby somewhat unwilling to support the Project.

This is reflected in the following: A) Old people who are relatively conservative about water use generally think that spring water is cleaner than tap water; B) Some local residents confuse tap water with water from other sources, and do not believe in the quality of tap water. Villagers in Shangzhang Village generally think that the big well dug last year in the village is a water supply

work, and that that's what "tap water" should be like; C) Most families have open-air wells, and water is pumped via pipelines into houses, so local residents regard this water as tap water, and think that their houses are already connected to tap water; and D) Most villagers lack trust in quality inspection reports.

Interview 4-17: Mr. Zheng, Meixi Village, Shishan Town, Nanfeng County (60 years)

Tap water? My family has tap water, too, which comes from the river over there via the water pipe. There is a purifying facility in the village.

2) Local residents have the stereotype of bad tap water quality, and are likely to be inimical to it.

Some local residents have a stereotype about tap water that it is added with chemicals during purification, and is therefore unclean. Such stereotype comes mainly from the dissemination of misleading information on TV, Web, etc., and rumors and panics arising from incidents like tap water pollution. In addition, some residents still think that new waterworks still use unclean water sources of former private waterworks.

Interview 4-18: Ms He, Zhoushang Village, Lilin Town, Leping City (44 years)

Is tap water added with chemicals as people say on TV? If so, I will not use it. Its quality is not assured, because it is always added with something, and not as reliable as well water.

3) Local residents still worry about the feasibility and maintenance of the Project.

Some residents are skeptical about the feasibility of the Project, because they think that the Project has such a large scale that it is unlikely to be completed quickly and household by household.

In addition, they also have doubt about the quality and maintenance of tap water pipelines, and worry that the Project cannot operate sustainably after its completion.

Interview 4-19: villager, Shangzhang Group of Chenfang Village, Chenfangji Xiang, Jinxi County

Using tap water seems convenient, but I have also heard from other villagers that the tap water facility would be damaged soon and left unrepaired. In this case, we will finally have to use well water.

4.1.5 Risks in the existing tap water management mechanism

1) Appeal, supervision and management mechanisms for drinking water use are unsound.

Residents can hardly find a suitable channel to file their appeals about water quality, supply, facility failure, etc., and receive effective feedback and response. This is attributed to inadequate supervision over drinking water use in the project area more or less. Some residents are just making do with domestic water, because they say that appeals are useless at all.

Interview 4-20: Mr. Chen, Laixi Village, Laixi Town, Nanfeng County (55 years)

Is there any problem with this tap water, just like being added with some filtering agent as

people say on TV? We have no way to file an appeal, and even the village committee is not responsible for this.

2) Government credibility is challenged locally.

Local residents generally think that tap water supply should be a duty of the government. However, due to consecutive tap water pollution events in recent years throughout the country, the public has developed the stereotype that tap water is unsafe. For this reason, local residents have little trust in tap water supply projects. The challenge to government credibility is reflected not only in the Project, but also in other projects, such as groundwater and well water pollution, and major diseases of nearby residents caused by chemical production projects in the industrial park of Leping City. Local residents think that the government should be held liable for this.

Interview 4-21: Mr. Zou, Zhoushang Village, Lilin Town, Leping City (39 years)

We expect the government to supply tap water of good quality to us. As TV reports, in some places, officials and entrepreneurs collude to supply tap water of bad quality to the public to seek profits. We don't care about water charges, but do care about water quality and quantity.

3) Outstanding issues of private waterworks affect local residents' trust in the Project.

There was a private waterworks (Yuquan Waterworks) in Shishan Village, Shishan Town, Nanfeng County. According to local residents, this waterworks is criticized by poor water quality, disorderly registration and unregulated charge collection. After reporting by local residents, the government has closed down this waterworks, and taken over water supply, but pipelines often burst and have to be repaired by the government. Such outstanding issues have affected local residents' trust in new projects. In addition, a small waterworks was built in Laixi Village, Laixi Xiang 7-8 years ago, but it has not been put into operation since its completion. Villagers think that this is a great waste of resources.

There was a private waterworks in Lilin Town, Leping City, which was closed down due to bad water quality. After its closedown, its supply network has been mostly damaged by villagers and is no longer usable. Such past events make villagers distrust water supply projects, and reduce their willingness to pay.

Interview 4-22: Head of the Lilin Waterworks, Lilin Town, Leping City

The outstanding issue from that waterworks is troublesome, not only reducing villagers' enthusiasm, but also making our work more difficult. As you can see, pipes exposed on the road are former pipes, and have been damaged by villagers. We are also working on this to change villagers' attitude to tap water supply.

4.2 Current situation of wastewater treatment of local residents

4.2.1Use of septic tanks and impact analysis

In Zhajin Town, Xiushui County, 97.4% of households have an indoor private toilet. Among those with an indoor private toilet, 81.6% have a septic tank for feces treatment. Among those with a septic tank, 48.4% have a septic tank below the ground out of the house, 41.9% have a septic tank below the house, and 9.7% have a septic tank below the toilet. Septic tanks below the house are not tightly sealed, contain many pathogenic bacteria, emit harmful gases, and are adverse people's health. 79.4% of residents think it necessary to alter the indoor wastewater pipeline to drain dung

water.

57.9% of the respondents think that the public septic tank in the village / community will have adverse impacts, 31.6% think that it will not, and 10.5% are not clear. Among those who think that the public septic tank will have adverse impacts, 26.4% choose dung water overflow due to the lack of cleanup 26.4%, 26.4% choose strong odor, 22.2% choose giving rise to mosquitoes and flies, and spreading diseases, 11.1% choose polluting rivers, and 13.9% choose polluting groundwater. When asked how to alter the septic tank, 80.6% choose unified construction by a construction agency engaged by the village committee, 5.6% choose self-construction with supplied materials, and 13.9% choose self-construction with supplied funds.

Table 4-1 Use of septic tanks and impact analysis

Perception		Percent (%)
What is your family's toilet?	Indoor private toilet	97.4
	Outdoor private toilet	2.6
	Public toilet	0
If it is a private toilet, does it have a septic tank?	Yes	81.6
	No	18.4
	Not clear	0
Where is the septic tank?	Below the ground out of the house	9.7
	Below the house	41.9
	Below the toilet	48.4
Is it necessary to alter the indoor wastewater pipeline to drain dung water?	Necessary	79.4
	Not quite necessary or unnecessary	20.6
Will the public septic tank affect residents negatively?	Yes	57.9
	No	31.6
	Not clear	10.5
Which negative impacts are there?	Dung water overflow due to the lack of cleanup	26.4
	Strong odor	26.4
	Giving rise to mosquitoes and flies, and spreading diseases	22.2
	polluting rivers	11.1
	polluting groundwater	13.9
How to alter the septic tank?	Unified construction by a construction agency engaged by the village committee	80.6
	Self-construction with supplied materials	5.6
	Self-construction with supplied funds	13.9%

4.2.2 Domestic wastewater treatment and impact analysis

As to domestic wastewater treatment, 39.5% choose pouring out of the door; 13.2% choose pouring into the toilet, and 47.4% choose draining into the river through ditch or pipe collection. As to who disposes of domestic wastewater often, 71.1% of the respondents choose young woman, 21.1% choose old woman, and 7.9% choose young man. As to satisfaction with local wastewater treatment, 7.9% of the respondents are satisfied, 34.2% neither satisfied nor dissatisfied, and 57.9% dissatisfied or very dissatisfied. As for difficulty in wastewater treatment, 39.3% of the respondents choose lack of sound wastewater treatment system, 27.0% choose low public environmental awareness, 21.3% choose lack of effective regulation, and 12.4% choose inadequate publicity.

Figure 4-4 Unregulated wastewater discharge

As to domestic wastewater impact, 37.6% choose emitting bad odor and affecting life, 34.1% choose giving rise to mosquitoes and flies, and affecting health, 17.6% choose polluting soil and waters, 8.2% choose affecting crop growth, and 2.4% don't know. As to the necessity to collect and treat domestic wastewater, 86.8% choose very necessary or necessary, and 13.1% choose not quite necessary or unnecessary.

In interviews, local residents expressed their dissatisfaction with local sanitary conditions, especially with domestic wastewater treatment. This shows that local residents have strong demand for wastewater treatment projects.

Table 4-2 Domestic wastewater treatment and impact analysis

Perception		Percent (%)
How is domestic wastewater disposed of?	Pouring out of the door	39.5
	Pouring into the toilet	13.2
	Draining into the river through ditch or pipe collection	47.4
Which member of your family disposes of domestic wastewater most often?	Young woman	71.1
	Young man	7.9
	Old woman	21.1
	Old man	0
	Child	0
Are you satisfied with the current situation of wastewater treatment?	Satisfied	7.9
	Neither, nor	34.2
	Dissatisfied	47.4
	Very dissatisfied	10.5
Which difficulties are there in wastewater treatment?	Lack of sound wastewater treatment system	39.3
	Low public environmental awareness	27.0
	Lack of effective regulation	21.3
	Inadequate publicity	12.4
What negative impacts does the current situation of wastewater treatment have?	Emitting bad odor and affecting life	37.6
	Giving rise to mosquitoes and flies, and affecting health	34.1
	Polluting soil and waters	17.6
	Affecting crop growth	8.2
	Don't know	2.4
Is it necessary to collect and treat domestic wastewater?	Very necessary	44.7
	Necessary	42.1
	Not quite necessary	7.9
	Unnecessary	5.2

4.2.3 Key findings in local domestic wastewater treatment

1) Domestic wastewater is discharged without regulation.

Domestic wastewater is mostly poured directly out of the door without special treatment. Wastewater can be seen to flow over, emit odor, and give rise to mosquitoes and flies, which will affect local residents' physical health and well-being, and worsen the local living environment in the long run.

Interview 4-23: Mr. Zhou, Zhajin Village, Zhajin Town, Xiushui County (54 years)

Pouring wastewater out of the door will have little impact, because everyone does this and this has been done for many years. This has become a rural practice.

Wastewater is often drained by villagers directly into rivers without treatment, leading to river pollution and safety concerns.

Figure 4-5 River pollution arising from unregulated waste disposal

2) Self-built wastewater drainage facilities are substation without centralized collection and treatment.

Septic tank outlets and some domestic wastewater sewers are very likely to be blocked, resulting in difficulty in wastewater discharge. Pipelines to which they are connected are often uncovered and open, and emit strong odor. In addition, such pipelines do not have any wastewater treatment terminal, and simply drain wastewater to low-lying pits and ponds, thereby possibly affecting nearby vegetable fields.

Interview 4-24: Ms Li, Tianxi Village, Zhajin Town, Xiushui County (47 years)

My family has a septic tank, just out of the house. It has no odor or overflow, except in summer. There is no special facility for feces and wastewater treatment in the village, and we just drain them into the river or let them flow into soil naturally.

In Zhajin Town, environmental pollution is reflected mainly in wastewater treatment, where drain ditches are mostly open, and wastewater often permeates to roadsides and fields, expanding the range of pollution. Once such ditches are blocked, wastewater will overflow into roadsides and fields. In general, there is no regular sewer network in most villages, making it possible to treat domestic wastewater effectively.

Interview 4-25: Ms Zhang, self-employer, Zhajin Town, Xiushui County (36 years)

Our village is very dirty, with much wastewater and solid waste, mostly in drain ditches. They would be flushed away only when there is a heavy rain. They make water odorous, and give rise to mosquitoes and flies in summer.

3) Villagers are very eager for centralized domestic wastewater treatment.

Villagers think that the unregulated discharge of domestic wastewater will cause environmental pollution, and affect roads and the living environment significantly, as can be reflected in the fact that 75.9% of the respondents are willing for sewer line connection. In view of frequent blocking, villagers are strongly willing for centralized domestic wastewater collection and treatment.

Table 4-3 Local residents' willingness for sewer line connection

Willingness for sewer line connection					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Willing	85	26.3	75.9	75.9
	Unwilling	23	7.1	20.5	96.4
	Don't know	4	1.2	3.6	100.0
	Total	112	34.7	100.0	
Missing	System	211	65.3		
Total		323	100.0		

Interview 4-26: Mr. Chen, Daqiao Village, Daqiao Town, Xiushui County (43 years)

It does not matter to pour wastewater on the ground, because it will dry soon and can reduce dust. Sometimes, we pour wastewater into the sewer, which is smelly in summer.

4) Willingness to pay relates to amount paid, distance from the urban area and educational level.

A) Among the 54 samples who are willing to pay wastewater treatment charges, 70.4% are willing to pay 100 yuan or less, and 22.22% willing to pay willing to pay 101-300 yuan, totaling 92.6%; 3.7% are willing to pay 301-500 yuan, 1.9% willing to pay 501-800 yuan, and 1.9% willing to pay over 1,000 yuan, totaling 7.6%. It can be seen that amount paid is inversely proportional to willing to pay. B) Willingness for wastewater treatment facility construction is inversely proportional to distance from the urban area, because those living close to the urban area think that their land may be acquired in the future and is more valuable, and wastewater treatment facility construction will affect land price to some extent. C) Willingness for wastewater treatment facility construction is somewhat directly proportional to educational level, because villagers with higher educational levels can realize the severity of wastewater pollution, and support wastewater treatment facility

construction more strongly.

Table 4-4 Amounts of extra water charges willing to be paid by educational level

Amount willing to be paid					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	>1,000 yuan	1	.3	1.9	1.9
	501-800 yuan	1	.3	1.9	3.7
	301-500 yuan	2	.6	3.7	7.4
	101-300 yuan	12	3.7	22.2	29.6
	100 yuan or less	38	11.8	70.4	100.0
	Total	54	16.7	100.0	
Missing	System	269	83.3		
Total		323	100.0		

5) Township- and village-level public finance can hardly bear wastewater treatment expenses.

All rural residents know what sewers are very dirty and odorous, and may be blocked by wastewater and solid waste, which is very adverse to the living environment and their physical health. However, there is no fund at the township and village levels for regular wastewater treatment. Therefore, support from government agencies at all levels, international organizations and social organizations is required for the Project.

Interview 4-27: Head of Xiyan Village, Zhajin Town, Xiushui County

The operation and maintenance of wastewater treatment facilities needs heavy investment, and it is impractical to let our village bear such expenses alone. However, some villagers think that the village committee has money for this.

5 Social Impact Analysis

5.1 Positive impacts

It can be found from the questionnaire survey that the positive impacts of the Project as perceived by residents in the 7 counties (districts) mainly include: A) improving the living environment, 26.1%; B) reducing drinking water pollution, 31.0%; C) reducing diseases, 23.7%; D) reducing wastewater impacts on crops, 7.8%; E) offering job opportunities, 4.8%; and F) promoting economic development, 6.0%; other, 0.6%.

Table 5-1 Perceptions of positive impacts of the Project

Perception	Positive impact of the Project						
	Improving the living environment	Reducing drinking water pollution	Reducing diseases	Reducing wastewater impacts on crops	Offering job opportunities	Promoting economic development	Other
Sample size	84	100	77	25	16	19	2
Percent (%)	26.1	31.0	23.7	7.8	4.8	6.0	0.6

1) Improving water supply infrastructure and meeting residents' water demand

With the growth of the urban population of the 7 counties (districts), urban water demand will rise dramatically, so urban water supply capacity must keep up. However, some existing local waterworks have old, aged and small-capacity equipment that can hardly meet local urban and rural residents' water demand. In addition, some villages are not covered or fully covered by tap water supply, and are still using well water, lake water or river water. Villagers in these villages have a strong need for clean water supply. The Project will improve water supply infrastructure, and supply high-quality, stable and clean water.

Interview 5-1: Ms Deng, market town, Dengjia Xiang, Dongxiang District (54 years)

Almost everyone approves of tap water supply, as long as it is of good quality, supplied stably and reasonably priced, because everyone prefers clean domestic water. Although we live in rural areas, we all want good health. You should give more publicity on the disadvantages of unclean water.

2) Promoting local economic development and increasing job opportunities

The Project will improve the environment of the project area greatly, attract investment, and promote local economic development. The Project will also promote the intensive utilization of water resources, and provide solid infrastructure for developing local tourism resources, thereby offering more job opportunities to local residents.

In addition, some unskilled jobs will be generated during project construction and operation, such as material transport and catering services for the construction staff at the construction stage, and the operation and maintenance of wastewater treatment systems at the operation stage. Through consultation with the PMOs and owners, the construction agencies will make such jobs first available to surplus labor in and around the project area, especially women, old people, poor people and other vulnerable groups.

3) Improving local water quality to ensure drinking water safety and reduce waterborne diseases

In some villages, domestic wastewater is discharged into private septic tanks or directly without

treatment. Since septic tanks are based on natural permeation, wastewater has polluted groundwater to some extent. In addition, since some septic tanks are uncovered, wastewater may be washed away by rains in the rainy season, so that septic tanks are actually not functioning. Wastewater overflow is likely to give rise to mosquitoes, flies and bacteria, thereby resulting in related diseases, such as cold, fever and gastrointestinal distress. The Project will further ensure hygienic and safe water use for local residents, improve their physical health, and reduce waterborne diseases, especially for poor population who are more likely to get ill due to lower living standards. In addition, the Project will reduce water pollution by domestic wastewater.

Figure 5-1 Open canal and blind ditch for wastewater discharge

4) Improving rural wastewater collection and treatment systems, the living environment, and residents' environmental awareness

Villages in Xiushui County lack wastewater collection and treatment facilities, where domestic wastewater is discharged into private septic tanks or directly without treatment, polluting the surrounding environment. The Project will improve rural wastewater collection and treatment systems, and local environmental infrastructure, and put an end of disorderly domestic wastewater discharge and associated problems.

With the progress of economic and social development, people are increasingly sensitive to the environment, and their environmental awareness keeps improving, which is reflected in their demand for safe and hygienic water sources. In addition, residents who have been affected greatly by domestic wastewater and solid waste have a clear understanding of environmental improvement.

5.2 Potential risks

1) Impacts of permanent LA and temporary land occupation

The new waterworks constructed under the Project will involve permanent LA in tea forests in Long'an Village, Caifeng Xiang, Yongxin County, orange and tea forests in Linchuan District, irrigated land in Dongxiang District, etc., affecting 343 households with 1,294 persons in total. LA will reduce land-based income, and affect some local residents' livelihoods.

Some local farmland will be occupied temporarily during pipeline construction, affecting 554 households with 2,052 persons and some ground attachments, which will be compensated for. In view of this, the households affected by permanent LA and temporary land occupation, and their impacts should be identified as early as possible, such impacts notified to the APs in advance, and compensation paid to them in full according to the prevailing policies.

Table 5-2 Statistics of population affected by permanent LA and temporary land occupation

No.	Type of impact		Yongxin County	Linchuan District	Dongxiang District	Jinxi County	Nanfeng County	Xiushui County	Leping City	Subtotal
1	Permanent LA (mu)		108.8	79.18	91	4.4	0	2	0	285.38
	Where:	Cultivated land	0	0	91	4.4	0	2	0	97.4
2	Permanent occupation of state-owned land (mu)		0	1	0	0	0	0	0	1
3	Temporary land occupation (mu)	Collective	176.4	3	67.6	52	50.28	90.6	360.06	799.94
		State-owned	8.5	58.1	42.1	1.3	7.03	0	71.61	188.64
		Subtotal	184.9	61.1	109.7	53.3	57.31	90.6	431.67	988.58
4	Permanently affected	HH	17	275	42	3	0	6	0	343
		Person	74	973	197	15	0	35	0	1294
5	Temporarily affected	HH	138	2	52	80	39	158	85	554
		Person	599	6	169	326	99	574	279	2052
6	Remarks		Collective woodland acquired	Collective woodland acquired	Collective cultivated land acquired	4.4 mu of irrigated land, affecting 3 households with 15 persons, and 16 mu of non-contracted woodland acquired	50 mu of land acquired in 2012	10 mu of land acquired	Former site, expansion, involving no LA	

In addition, road excavation during construction will affect the daily traffic of some urban and rural residents, and pipeline construction or extension will affect some public infrastructure, such as natural gas pipelines (Dongxiang District, Yongxin County), communication cables (Nanfeng County, Yongxin County), and high-speed railways (Dongxiang District).

Figure 5-2 Left: pipeline construction in Dongxiang District; right: pipeline excavation in Leping City

2) Resettlement of employees of affected private waterworks

After the completion of the new waterworks in the 7 counties (districts), some existing private

small waterworks will be purchased (by Runquan Water Supply Co., Ltd.) or closed down, and their existing employees will be resettled.

The existing waterworks in 6 townships (Zhajin Town, Xiushui County; Shishan Town, Qiawan Town Nanfeng County; and Bogan Xiang, Xiaohuang, Gangshangji Towns, Dongxiang District) are all private waterworks, with 36 employees in total, who are all temporary contract employees.

After closedown, the affected employees will be resettled on a voluntary basis in the following modes: 1) Inform every employee of the relevant water plants will be shut down, employee placement and other information, at least 3 months in advance; 2) Proprietors will grant one-time cash compensation to them, and they will find other jobs themselves; 3) Employees willing to work at new waterworks will be employed after training; and 4) Unskilled jobs at the construction and operation stages will be first made available to them.

Table 5-3 Statistics of affected small waterworks and employees

Indicator / County (district) / township		Private waterworks		
		Name	Existing workforce	Proposed resettlement measures
Xiushui County	Zhajin Town	Jinda Waterworks	10	Cash compensation + employment training + contractual employment
Nanfeng County	Shishan Town	Shishan Waterworks	3	
	Qiawan Town	Qiawan Waterworks	3	
Dongxiang District	Bogan Xiang	Huimin Waterworks	4	
	Xiaohuang Town	Xiaohuang Waterworks	4	
	Gangshangji Town	Shengwang Waterworks	12	
Total		6	36	/

3) Comments on the routing of raw water and extended pipelines to be collected from nearby residents and utility companies

A) Residents worry that farmland may be affected. In Yongxin County, the raw water pipeline has a total length of 21.5km, and involves temporary land occupation in Group 3 of Hengxi Village near the hydropower station. Villagers do not allow pipelines to run through their farmland in order not to affect farming.

Interview 5-2: Mr. Chen, Hengxi Village, Longyuankou Town, Yongxin County (52 years)

The pipeline cannot run through my field, because it may affect my harvest, and cattle may collapse into the field. Please lay it along the river.

B) Comments should be collected from utility companies. In Dongxiang District, the design route of the raw water pipeline runs through some national projects, such as high-speed railway and west-to-east natural gas transmission. Construction may be impeded if the design route is not approved by the relevant utility companies. The raw water pipeline from the Hefang Reservoir to the Chengdong Waterworks runs through National Highway 230 under construction, but will affect the high-speed railway and west-to-east natural gas transmission pipeline near the Fuzhou East Railway Station to some extent. In addition, Linchuan District is a cradle of gifted scholars, and has many cultural heritage sites, which should be evaded during pipeline construction.

4) Potential environmental impacts at the construction and operation stages

Noise, flying dust and tail gas produced by construction machinery and vehicles, and domestic wastewater and waste discharged during construction may affect nearby villages' lives and production to some extent. The potential negative impacts of the Project as contemplated by local

residents are: ①flying dust and tail gas during construction within 20m along water supply pipelines, 27.5%; ②water loss and soil erosion due to construction, 11.6%; ③discharge of construction and domestic wastewater, 18.6%; ④noise from construction machinery and vehicles, 20.1%; ⑤discharge of construction and domestic waste, 18.1%; ⑥other, 4.0%.

Table 5-4 Perceptions of negative impacts of the Project

Perception	Potential negative impacts during construction					
	Flying dust and tail gas during construction	Water loss and soil erosion due to construction	Discharge of construction and domestic wastewater	Noise from construction machinery and vehicles	Discharge of construction and domestic waste	Other
Sample size	89	37	60	65	59	13
Percent (%)	27.5	11.6	18.6	20.1	18.1	4.0

In addition, local residents think that the potential impacts of the Project after completion also include secondary pollution from sludge, 20.2%, increased expenses, 43.3%; partial land loss, 1.0%; no negative impact, 24.9%; and other 0.5%.

Table 5-5 Perceptions of potential impacts of the Project after completion

Perception	Potential negative impacts after completion				
	Secondary pollution from sludge	Increased expenses	Partial land loss	No negative impact	Other
Sample size	65	140	36	80	2
Percent (%)	20.2	43.3	11.0	24.9	0.5

5) Past pipeline bursting in some areas may bring potential resistance to pipeline construction.

A) Some villagers think that water supply pipelines should not be too close to their houses in order not to affect the foundation and house stability, and not be too far away from their houses so that bursting will not threaten their safety. For example, the water supply pipeline in Xiushui County is designed to run from the Dongjin Reservoir along roads, but the existing pipeline once burst due to the lack of maintenance, and formed a big puddle, where a child drowned, and a nearby house was shattered due to strong impact. For this reason, resistance from villagers may be encountered if pipelines are laid close to living areas.

On the other hand, villagers worry that if pipelines are laid in fields, they and their cattle may collapse during farming, so they expect pipelines to be laid away from fields or deeper into fields. For example, a natural gas pipeline from the Longyuankou Reservoir to the proposed site in Yongxin County may be laid along the natural gas pipeline to avoid further LA and reduce resistance from villagers.

B) Some villagers think that sewers should not be too close to their houses so that odor will not affect them, and sewers should be preferably not run through their houses, but be laid along roads. In addition, some villagers may impede construction when sewer construction is close to their houses.

6) Disputes arising from tap water connection cost higher than expectation and irrational collection of water charges

A) There is doubt about the repeated payment of house connection cost. The task force has learned that the former house connection cost levied by private waterworks is 400 yuan per household (260 yuan per household in some places). After the closedown of private waterworks, tap

water is no longer supplied, and the house connection cost has not been refunded. It is learned from the interview with the head of the Lilin Waterworks that there will be two options for the Project: First, the house connection cost is 900 yuan per household, and will not be paid by any household that once paid 400 yuan per household; second, the house connection cost is not levied, but each household has to pay 20 yuan in water charges per month. Villagers generally think that the house connection cost is high, and expects it to be lower.

Interview 5-3: Mr. Wu, Zhoushang Village, Lilin Town, Leping City (51 years)

Well water has been used for more than 10 years, and is of good quality. There was tap water in the village several years ago, but was of bad quality. I paid the house connection cost, and I think I don't have to pay 900 yuan this time. That's too much.

B) There are irrational factors in water charge collection. Villagers think that the water rate in the county town is too high, and are not clear if it contains wastewater treatment charges. They think that they don't have to pay wastewater treatment charges (0.8 yuan/m^3), because there is no wastewater treatment facility in most rural areas. In addition, there is no preferential policy for local MLS households, five-guarantee households and other vulnerable groups yet.

Interview 5-4: villager, market town of Chenfangji Xiang, Jinxi County

The water rate here it too high, and we don't know that it contains. My family is an MLS family, but has to pay water charges at the same rate. I cannot afford tap water.

C) Villagers are still dissatisfied with design water sources. Some local residents are dissatisfied with proposed tap water sources. For example, in Chenfangji Xiang, the local reservoir is proposed as the water source, but local residents think that the reservoir has been used for fish culture and seriously polluted.

Interview 5-5: villager, Shangzhang Group of Chenfang Village, Chenfangji Xiang, Jinxi County

That reservoir is used for fish culture, and has been polluted by chicken and pig feces. As you can see, the water is green and unclear, and even not as good as well water.

7) Impact on power generation

The Leping and Xiushui Subprojects will take water from existing reservoirs, such as the Communism, Dakouwu and Dongjin Reservoirs. Although this will have a minor impact on the reservoir function and environment, the Leping Subproject will reduce the discharge of the Chexi River by 0.365×108 m^3 per annum directly, and the generating capacity of the downstream Chongshan, Gutian and Guxi hydropower stations by 260,000 kWh. In addition, the Xiushui Subproject will also reduce the generating capacity of the Dongjin Reservoir.

Therefore, the coordination of interests between water supply companies and hydropower stations is also an important factor in project implementation. For example, in order to ensure water supply for the Subproject, 1） Xiushui County Water Company has entered into an agreement with Dongjin Power Generation Co., Ltd. to grant compensation for reduced generating capacity at 0.07 yuan/m^3. 2) In Leping City, compensation is paid to the hydropower station annually based on water consumption. In April 2015, Leping Runquan Water Supply Company, the Leping Municipal Water

Resources Bureau, and the hydropower station entered into a tripartite agreement, where compensation of 193,200 yuan would be paid by the Leping Municipal Government to the Leping Municipal Water Resources Bureau, and then to the hydropower station annually from January 2011 to December 2014, totaling 772,800 yuan, and by the Leping Municipal Government to the Leping Municipal Water Resources Bureau, and then to the hydropower station annually after 2014 until water rate adjustment; after water rate adjustment, compensation would be paid by Leping Runquan Water Supply Company.

Table 5-6 Analyais of impacts of water supply and drainage subcomponents at the operation stage

County / district	Subcomponent	Reservoir	Impact analysis
Leping City	Urban waterworks expansion	Communism Reservoir	Reducing the discharge of the Chexi River by 0.365×108 m^3 per annum directly, and the generating capacity of the downstream Chongshan, Gutian and Guxi hydropower stations by 260,000 kWh
Xiushui County	Urban waterworks expansion	Dongjin Reservoir	Reducing the generating capacity of the Dongjin Reservoir

8) Potential social risks arising from the inflow of migrant workers during construction

During construction, labor from other provinces, cities and counties will enter the 7 counties (districts) to meet the qualification and construction requirements. It is expected that about 250 external laborers and 770 local laborers will be recruited. The inflow of migrant workers will lead to social and health risks, such as the dissemination of epidemic and infectious diseases (e.g., AIDS, influenza), and conflict with local social and cultural customs (including religious believes, festivals, etc.).

Table 5- 7 Summary of construction labor composition and types of work

Indicator / County / district	Migrant workers	Main types of work	Local workers	Main types of work	Total
Xiushui	40	Project management, financial management, contract management, machinery operation, etc.	90	Earth transport, material transport, pipeline laying and excavation, construction, cooking, cleaning, etc.	130
Nanfeng	30	Project management, financial management, contract management, machinery operation, etc.	60	Construction, pipeline laying and excavation, material transport, cooking, cleaning, etc.	90
Yongxin	35	Project management, financial management, contract management, machinery operation, etc.	80	Earth transport, material transport, pipeline laying and excavation, construction, cooking, cleaning, etc.	115
Linchuan	35	Project management, financial management, contract management, machinery operation, etc.	75	Earth transport, material transport, pipeline laying and excavation, construction, material transport, cooking, cleaning, etc.	110
Jinxi	25	Project management, financial management, contract management, machinery operation, etc.	60	Earth transport, material transport, pipeline laying and excavation, construction, material transport, cooking, cleaning, etc.	85
Dongxiang	30	Project management, financial management,	60	Pipeline laying and excavation, construction, material transport,	90

		contract management, machinery operation, etc.		cooking, cleaning, etc.	
Leping	55	Project management, financial management, contract management, machinery operation, etc.	95	Earth transport, material transport, pipeline laying and excavation, construction, material transport, cooking, cleaning, etc.	150
Total	250	/	770	/	1020

5.3 Suggestions on stable project operation

1) Practice flexible management mechanisms to meet stakeholders' needs.

For the two groups of Xunyi Village in Xiushui County, different house connection options may be applied, such as direct tap water connection for Group A to supply safe and stable tap water, and the connection of both spring and tap water for Group B, and the water rate may be reduced to some extent to improve their willingness to house connection. The affected employees of the private waterworks will be reemployed on a voluntary basis, granted cash compensation, and provided with operation and maintenance jobs with priority. In the fixation of the water rate, the urban and rural income gap should be considered.

Due to long-term habits, non-tap water sources, such as well water and spring water, have become local residents' main domestic water sources. It is difficult to make them switch to tap water in a short time, but the mixed use of well water, spring water and tap water may be applied so that they can use water at their own option, and the government can also make them switch to safe and stable tap water gradually through publicity. For water sources threatened by nearby or upstream mines or piggeries, impacts should be investigated by independent third parties.

2) Use appropriate construction methods to avoid construction impediment.

Water supply pipelines should be laid in flat terrains, and away from living areas where possible to reduce resistance to construction. Materials used should be supervised more effectively to ensure construction quality, and a pipeline maintenance mechanism established to avoid bursting and other damages. The households affected by permanent LA and temporary land occupation, and their impacts should be identified as early as possible, such impacts notified to the APs in advance, and compensation paid to them in full according to the prevailing policies.

3) Strengthen publicity to guide villagers to treat the Project properly.

In view of the insufficient and unstable supply of well and spring water, the advantages of tap water supply should be communicated to local rural residents to make them switch to tap water voluntarily. For vague perceptions about the concept of "tap water", effective explanations should be made to correct their perceptions, thereby promoting integrated urban and rural water supply. Drinking water appeal, supervision and management mechanisms should be established to involve local residents.

4) Conduct planning and construction based on villagers' needs.

Self-built wastewater drainage facilities should be reconstructed to meet wastewater discharge demand. Uncovered open canals that are easy to clean but likely to contain solid waste and emit odor should be improved to be semi-covered and semi-uncovered, or fully covered (the cover is removable). During the design and construction of wastewater treatment plants, such self-built wastewater drainage facilities should be utilized where possible. Villagers think that pouring domestic wastewater out of the door can reduce dust, indicating that the rural environment is dry and dusty. In view of this, roads can be sprinkled regularly for humidification. In addition, local residents prefer sewer construction than wastewater treatment facility construction, so integrated

treatment facilities that include the function of a septic tank may be constructed.

5) Take advantage of all resources to improve villagers' wastewater treatment awareness and willingness.

Domestic wastewater discharge is frequent and unregulated in daily life. In view of this, publicity on domestic wastewater treatment for villagers should be strengthened to communicate negative impacts of improper discharge on the village environment, public health, etc., and a supervision and punishment mechanism established to improve villagers' environmental awareness.

Better-educated villagers should be mobilized to give publicity on the necessity of wastewater treatment, and serve as village contacts for wastewater treatment, thereby improving the willingness of worse-educated villagers for wastewater treatment. River pollution control should be strengthened as soon as possible to protect rivers. The importance of tap water quality for children's physical health should also be included in publicity to improve the potential willingness for tap water house connection.

6) Strengthen management to improve working intensity and efficiency.

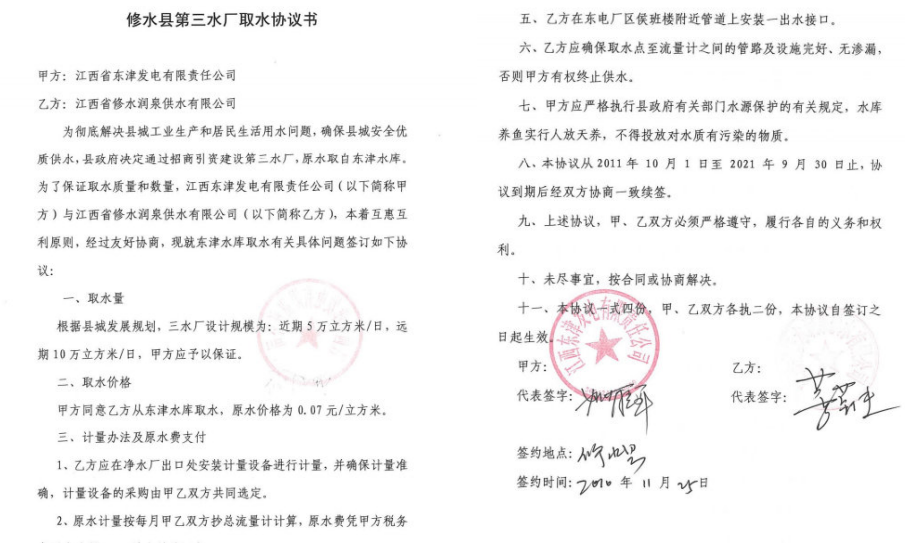
A retrospective analysis of causes of failure of past projects should be made, and the analysis results summed up and disclosed to collect comments and suggestions. A wastewater treatment rate acceptable to all parties should be fixed through extension participation, and wastewater treatment charges should be shared appropriately by the government and villagers. The significance of collection of wastewater treatment charges should be explained to villagers, and the transparent disclosure of government fiscal revenue and expenditure strengthened as an aid. Local governments should pay more attention to the Project, and give more publicity through multiple channels to mobilize villagers.

7) Strengthen policy publicity to improve villagers' sense of ownership.

"Safe and stable supply" should be highlighted in the publicity on integrated urban and rural water supply to improve villagers' sense of ownership, and involve them in village development. Publicity on the Project and successful cases of Bank-financed projects should be strengthened to enhance villagers' confidence in the Project.

8) Handle the impact of reservoir water supply on power generation properly.

The Leping and Xiushui Subprojects will take water from existing reservoirs, such as the Communism, Dakouwu and Dongjin Reservoirs, thereby reducing the generating capacity of the downstream hydropower stations directly. Therefore, the coordination of interests between water supply companies and hydropower stations is also an important factor in project implementation. For example, in order to ensure water supply for the Subproject, 1） In Xiushui County, Xiushui County Water Company has entered into an agreement with Dongjin Power Generation Co., Ltd. to grant compensation for reduced generating capacity at 0.07 yuan/m^3, See Figure 5-3.2) In Leping City, compensation is paid to the hydropower station annually based on water consumption. In April 2015, Leping Runquan Water Supply Company, the Leping Municipal Water Resources Bureau, and the hydropower station entered into a tripartite agreement, where compensation of 193,200 yuan would be paid by the Leping Municipal Government to the Leping Municipal Water Resources Bureau, and then to the hydropower station annually from January 2011 to December 2014, totaling 772,800 yuan, and by the Leping Municipal Government to the Leping Municipal Water Resources Bureau, and then to the hydropower station annually after 2014 until water rate adjustment; after water rate adjustment, compensation would be paid by Leping Runquan Water Supply Company. See Figure 5-4.



修水县第三水厂取水协议书

甲方：江西省东津发电有限责任公司

乙方：江西省修水润泉供水有限公司

为彻底解决县城工业生产和居民生活用水问题，确保县城安全优质供水，县政府决定通过招商引资建设第三水厂，原水取自东津水库。为了保证取水质量和数量，江西东津发电有限责任公司（以下简称甲方）与江西省修水润泉供水有限公司（以下简称乙方），本着互惠互利原则，经过友好协商，现就东津水库取水有关具体问题签订如下协议：

一、取水量

根据县城发展规划，三水厂设计规模为：近期5万立方米/日，远期10万立方米/日，甲方应予以保证。

二、取水价格

甲方同意乙方从东津水库取水，原水价格为0.07元/立方米。

三、计量办法及原水费支付

1、乙方应在净水厂出口处安装计量设备进行计量，并确保计量准确，计量设备的采购由甲乙双方共同选定。

2、原水计量按每月甲乙双方抄总流量计计算，原水费凭甲方税务

五、乙方在东电厂区侯班楼附近管道上安装一出水接口。

六、乙方应确保取水点至流量计之间的管路及设施完好、无渗漏，否则甲方有权终止供水。

七、甲方应严格执行县政府有关部门水源保护的有关规定，水库养鱼实行人放天养，不得投放对水质有污染的物质。

八、本协议从2011年10月1日至2021年9月30日止，协议到期后经双方协商一致续签。

九、上述协议，甲、乙双方必须严格遵守，履行各自的义务和权利。

十、未尽事宜，按合同或协商解决。

十一、本协议一式四份，甲、乙双方各执二份，本协议自签订之日起生效。

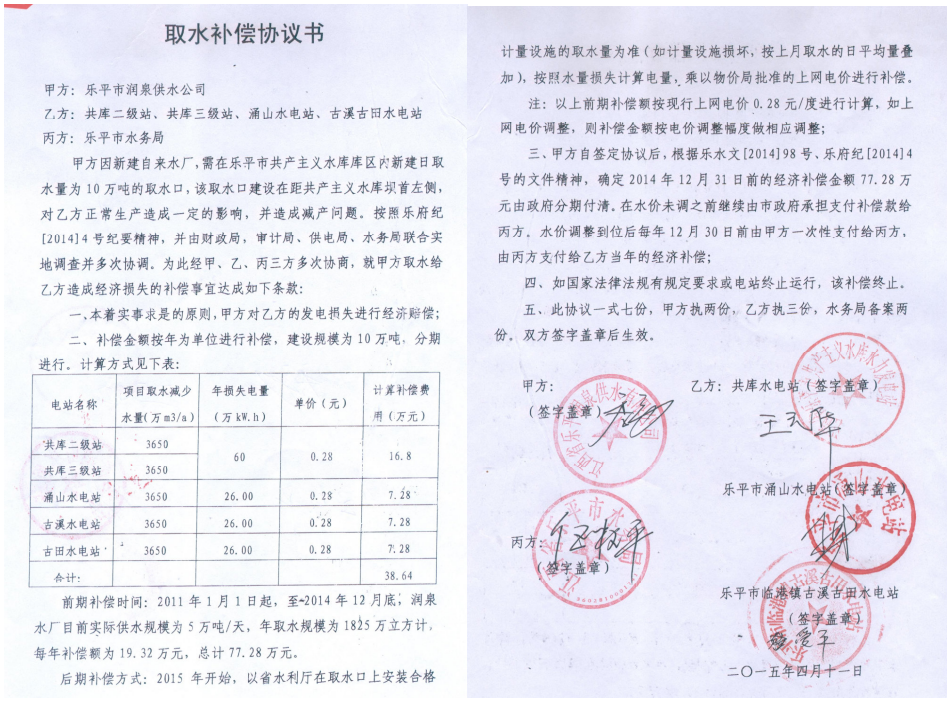
甲方：　　乙方：

代表签字：　　代表签字：

签约地点：修水

签约时间：2011年11月25日

Figure 5-3 Water intake agreement between the Xiushui No.3 WWTP and the Dongjin Hydropower Station



取水补偿协议书

甲方：乐平市润泉供水公司

乙方：共库二级站、共库三级站、涌山水电站、古溪古田水电站

丙方：乐平市水务局

甲方因新建自来水厂，需在乐平市共产主义水库库区内新建日取水量为10万吨的取水口，该取水口建设在距共产主义水库坝首左侧，对乙方正常生产造成一定的影响，并造成减产问题。按照乐府纪[2014]4号纪要精神，并由财政局、审计局、供电局、水务局联合实地调查并多次协调。为此经甲、乙、丙三方多次协商，就甲方取水给乙方造成经济损失的补偿事宜达成如下条款：

一、本着实事求是的原则，甲方对乙方的发电损失进行经济赔偿；

二、补偿金额按年为单位进行补偿，建设规模为10万吨，分期进行，计算方式见下表：

电站名称	项目取水减少水量(万m3/a)	年损失电量（万kW.h）	单价（元）	计算补偿费用（万元）
共库二级站	3650	60	0.28	16.8
共库三级站	3650			
涌山水电站	3650	26.00	0.28	7.28
古溪水电站	3650	26.00	0.28	7.28
古田水电站	3650	26.00	0.28	7.28
合计：				38.64

前期补偿时间：2011年1月1日起，至2014年12月底，润泉水厂目前实际供水规模为5万吨/天，年取水规模为1825万立方计，每年补偿额为19.32万元，总计77.28万元。

后期补偿方式：2015年开始，以省水利厅在取水口上安装合格

计量设施的取水量为准（如计量设施损坏，按上月取水的日平均量叠加），按照水量损失计算电量，乘以物价局批准的上网电价进行补偿。

注：以上前期补偿额按现行上网电价0.28元/度进行计算，如上网电价调整，则补偿金额按电价调整幅度做相应调整；

三、甲方自签定协议后，根据乐水文[2014]98号、乐府纪[2014]4号的文件精神，确定2014年12月31日前的经济补偿金额77.28万元由政府分期付清。在水价未调之前继续由市政府承担支付补偿款给丙方。水价调整到位后每年12月30日前由甲方一次性支付给丙方，由丙方支付给乙方当年的经济补偿；

四、如国家法律法规有规定要求或电站终止运行，该补偿终止。

五、此协议一式七份，甲方执两份，乙方执三份，水务局备案两份。双方签字盖章后生效。

甲方：（签字盖章）

乙方：共库水电站（签字盖章）

乐平市涌山水电站（签字盖章）

丙方：（签字盖章）

乐平市临港镇古溪古田水电站（签字盖章）

二〇一五年四月十一日

Figure 5- 4 Water supply compensation agreement of Leping City

9) Strengthen the management of migrant workers, and prevent AIDS and other social risks

During construction, labor from other provinces, cities and counties will enter the 7 counties (districts). The inflow of migrant workers will lead to social and health risks. Publicity on safety and health should be strengthened to prevent such risks, including:

- Strengthen publicity and education on public health and AIDS prevention, and include education on public health and AIDS prevention in construction contracts for effective performance;
- Conduct education and publicity on AIDS prevention and social intercourse skills for local laborers;
- Establish a physical checkup mechanism for construction staff;

- Conduct diversified publicity on AIDS prevention (brochure, poster, album, etc.)
- Conduct publicity on local social and cultural customs to reduce potential conflicts.

In addition, in order to promote the extensive participation of beneficiaries in construction, local labor (including women) will also be recruited:

- Not less than 35% of workers should be local laborers, including women and the poor;
- Make unskilled jobs first available to vulnerable groups (including women);
- Grant pays not less than the local minimum wage standard; grant a certain subsidy for environmental supervision jobs;
- Offer employment training to local laborers.

6 Poverty Analysis

6.1 Current Poverty Situation

6.1.1 Jiangxi Province

During the 12th Five-year Plan period, Jiangxi's poor population dropped from 4.38 million in 2011 to 2.04 million in 2015 by 2.34 million, and poverty incidence dropped from 12.6% to 5.7%. In the meantime, farmers' income in poor areas grew dramatically. In these 5 years, 346,000 rural residents in Jiangxi moved from mountain areas, geological disaster-hit areas, reservoir areas and key rural polluted areas to urban areas, industrial parks, central towns and central villages.

At the end of 2015, Jiangxi had 25 key counties for development-oriented poverty alleviation, 2900 key poor villages with 33,304 groups (including 12,443 key poor groups), and a poor population of 2 million.

Jiangxi's poor population has the following features: First, it remains large, and has a high proportion of MLS households; second, causes of poverty are diversified, especially illness and disability; third, the poor population is scattered yet relatively centralized; and fourth, county economies are weak, and infrastructure is backward. Among Jiangxi's registered poor households, 57.1%, 11.6%, 4.5% and 3.3% are impoverished due to illness, disability, education and disaster, and 20.5%, 16.5% and 12.3% due to fund shortage, labor shortage and skill shortage.

6.1.2 Project area

6.1.2.1 Distribution of poor population

The 7 project counties (districts) have 328 poor villages, and 45,906 poor households with 135,353 persons, with a poverty incidence of 2.9%. The two project counties with the highest poverty incidences are Yongxin and Xiushui Counties (6.5% and 6.2% respectively), while Linchuan District has the lowest poverty incidence of 1% only.

Dongxiang District: In 2016, this district had 3,109 poor households with 6,968 persons, including 1,007 ordinary poor households with 2,601 persons, 1,336 MLS households with 3,474 persons and 766 five-guarantee households with 893 persons. This district has 6 province-level poor villages with 13 severely poor groups and 25 moderately poor groups, with a poverty incidence of 1.6%.

Jinxi County: In 2016, this county had 2,373 registered poor households with 5,232 persons, with a poverty incidence of 1.6%, including 279 ordinary poor households with 742 persons, accounting for 11.38% and 14.18% respectively, and 1,402 MLS households poor households with 3,694 persons, accounting for 29.54% and 15.22% respectively.

Leping City: This city has 8,601 registered poor population with 14,901 persons, with a poverty incidence of 1.6%, including 6 province-level poor villages and 54 city-level poor villages.

Linchuan District: In 2016, this district had 10 poor villages (based on annual per capita disposable income of less than 4,000 yuan), and 5,377 poor households with 12,998 persons, with a poverty incidence of 1%.

Nanfeng County: In 2016, this county had 12 poor villages, and 2,394 poor households with 7,137 persons, with a poverty incidence of 3%.

Xiushui County: This county is the only state-level key county for development-oriented poverty alleviation of Jiujiang City, with a large poor population and a high poverty incidence. In 2016, this county had 91 poor villages and 14,551 poor households with 53,841 persons, with a poverty incidence of 6.2%.

Yongxin County: This county is very poor in general. In 2016, this county had 9,501 poor

households with 34,276 persons, with a poverty incidence of 13.78%, and 106 province-level poor villages, accounting for 44.5% of all villages of this county. There are many dilapidated rural houses in this county, and most rural households have low self-development capacity and weak resistance to market risks. See Table 6-1.

Table 6-1 Distribution of local poor population

Division	Poor villages	Poor households	Poor population	Poverty incidence
Dongxiang District	38	3109	6968	1.6%
Jinxi County	17	2373	5232	1.6%
Leping City	54	8601	14901	1.6%
Linchuan District	10	5377	12998	1%
Nanfeng County	12	2394	7137	3%
Xiushui County	91	14551	53841	6.2%
Yongxin County	106	9501	34276	6.5%
Total (project area)	328	45906	135353	2.9%

Source: county (district) poverty reduction summaries and plans

Figure 6-1 Dilapidated rural houses

6.1.2.2 MLS overview

At the end of 2015, Jiangxi had 2.672 million registered MLS subjects, including 976,000 urban ones and 1.696 million rural ones, and MLS benefits totaling 3.39 billion yuan were paid to urban MLS subjects, averaging 290 yuan per month, and MLS benefits totaling 3.36 billion yuan were paid to rural MLS subjects, averaging 165 yuan per month.

The project area has 109,459 MLS households with 216,796 persons in total, accounting for 8.1% of Jiangxi's MLS population, including 72,405 rural MLS households with 140,148 persons, and 37,054 urban MLS households with 76,648 persons. Among the 7 project counties (districts), the proportions of low-income rural population to agricultural population of Jinxi County, Leping City, Linchuan District and Xiushui County are greater than 4%, much higher than those of Dongxiang District, Nanfeng County and Yongxin County, in which those of Jinxi County, Linchuan District and Xiushui County are higher than the average of the project area of 4.3%, that of Leping City is largely equal to the average of the project area, but all lower than the provincial average of 6.8%. Among the 7 project counties (districts), the proportions of low-income urban population to nonagricultural population of Dongxiang District, Leping City, Xiushui County and Yongxin County are higher than the provincial average of 4.9%, and also higher than the average of the project area. See Table 6-2.

Table 6-2 Local MLS

Division	Rural MLS			Urban MLS		
	HHs	Population	Percentage to agricultural population (%)	HHs	Population	Percentage to nonagricultural population (%)
Dongxiang District	8493	11062	3.4%	5167	8999	8.6%
Jinxi County	8194	9393	4.9%	2781	3725	3.4%
Leping City	7867	26749	4.3%	5073	17249	5.5%
Linchuan District	24490	33627	4.7%	13455	24053	4.8%
Nanfeng County	4546	8096	3.3%	5150	2796	4.1%
Xiushui County	9265	34821	4.5%	2834	10487	10.2%
Yongxin County	9404	16400	3.9%	2594	9339	10.1%
Total (project area)	72405	140148	4.3%	37054	76648	5%
Jiangxi Province	462125	1696000	6.8%	265940	976000	4.9%

Source: Statistical Bulletin 2015 on National Economic and Social Development of Jiangxi Province, county / district statistics; Annual Government Information Disclosure Report 2015 of Jinxi County; information disclosure platform of the Yongxin County Government

According to the Notice of the Jiangxi Provincial Government on Issuing the 2016 Opinions on Livelihood Improvement Arrangements (JPG [2016] No.8), the per capita monthly urban MLS benefit is now 320 yuan, and the per capita monthly rural MLS benefit195 yuan in the 7 counties (districts).

6.2 Causes of poverty

Although the project 7 counties (districts) are widespread, their causes of poverty are similar.

1) The project area is underdeveloped for historical and geographic reasons. For example, the per capita farmers' net income of Leping City in 2015 was 12,729 yuan, equivalent to the national average, and rural areas were backward in economic and social development, with an urbanization rate of 35%, lower than the national average by 21 percentage points.

2) Rural infrastructure is backward, affecting rural productivity and farmers' income. This is reflected in backward transport, such as poor conditions of national and provincial trunk highways, the absence of high-speed railway, poor pavements of village roads, insufficient power supply capacity, weak river management, and unsafe drinking water.

3) Most rural households have low self-development capacity and weak risk resistance. This is reflected in impoverishment due to illness, disasters, fund shortage, labor shortage and skill shortage. For example, among 3,109 poor households in Dongxiang District, 1,749 households with 4,128 persons are impoverished due to illness, 39 households with 73 persons due to disasters, 2,833 households with 6,389 persons due to labor shortage, 81 households with 147 persons due to low self-development capacity, 763 households with 1,657 persons due to disability, 50 households with 97 persons due to education, two households with 3 persons due to water shortage, and 79 households with 207 persons due to skill shortage.

4) Basic public services are insufficient. General high and primary schools are short of teaching staff, medical conditions are poor, and the agricultural technique extension system is unsound.

5) Most poor villages are remote and short of natural resources, and their poverty is aggravated by the unavailability of information, natural disasters and the unsound rural MLS system.

5) Financial support is insufficient. According to the 12th Five-year Plan, the poverty alleviation fund for each poor village is 100,000 yuan per annum only, which is very limited.

6) Industry driving is insufficient. Except the orange industry in Nanfeng County, the other 6 counties (districts) do not have any developed characteristics industry. This is especially true in Yongxin County.

6.3 Local poverty alleviation measures

In general, local poverty alleviation measures mainly include the following:

1) Industrial development: Industries suited to local conditions should be developed to promote local poverty alleviation. Great support should be offered to poor villages and households for industrial development, employment and business startup to increase income. Poor households should be supported to develop characteristic crop cultivation, stockbreeding, processing, photovoltaic power generation, e-commerce, rural tourism, etc. For example, Yongxin County has a history of sericulture of over 40 years, which has become its pillar industry. A high-quality sericulture base will be established during the 13th Five-year Plan period to cover covering 28,480 rural households with 105,240 persons, including 15,210 poor households with 49,580 persons, in 150 villages in 23 townships.

2) Employment: First, vocational and practical agricultural skills training will be offered extensively. Second, employment and reemployment should be promoted through multiple channels, and local industrial enterprises encouraged to recruit poor laborers with priority. Finally, support for business startup should be strengthened, including free training and policy guidance.

3) Health: This measure aims to reduce impoverishment or re-impoverishment due to illness, improve medical service capacity and level, and prevent and control diseases. For example, 100 village clinics will be improved at an investment of 10 million yuan in Leping City during the 13th Five-year Plan period. In addition, door-to-door medical services will be offered to rural residents, especially for lonely old people, disabled people, etc.

4) Ecological conservation: First, ecological rehabilitation in poor areas should be strengthened to reduce rural non-point-source pollution. Second, a sound ecological compensation mechanism should be established for poor villages to promote water and soil conservation. Third, innovative modes of ecological building and compensation use should be explored to build ecological demonstration areas and a new countryside, and realize both economic development and ecological improvement.

5) Infrastructure construction: First, resource development and ecological conservation in poor areas will be strengthened, and support provided to small water resources works in poor villages. Second, infrastructure construction should be promoted with financial support, such as safe drinking water, rural road, drought combating, and rural water system integration works.

6) Social security: A) Improve social relief level, including MLS, medical, insurance, educational, charity and temporary relief. B) Improve rural basic endowment insurance level to ensure that old rural poor population is supported. C) Establish a sound care service system for children, women, old people and disabled people, including relevant social organizations.

7) Social assistance: A) Fixed support: Task forces composed of officials will be assigned to poor villages for full coverage. B) Paired support: CPC members and officials will be organized to support designated poor households. C) Enterprise support: Enterprises will be mobilized to support local poor households by means of industrial development, employment, donation, etc. See Table 6-3.

Table 6-3 Summary of one-to-one support by non-public enterprises in Leping City

No.	Poor village	County (district) level		City level	
		Supporting entity	Person in charge	Supporting entity	Person in charge
1	Zhangmuli Village, Gaojia Town, Leping City	Leping Qingye Chamber of Commerce	Wang Feng	Hongma Private High School	Wang Feng, executive member of the city industry and commerce association
2	Wujia Village, Hongyan Town, Leping City	Jiangxi Tianxin Pharmaceutical Co., Ltd.	Guo Jun	Jiangxi Wumu Logistics Co., Ltd.	Xu Xifan, member of the city industry and commerce association
3	Mule Village, Lingang Town, Leping City	Shuoguo Co., Ltd.	Ye Shuoguo	Baocilin Ceramics Co., Ltd.	Tan Xiaobao, member of the city industry and commerce association
4	Longkou Village, Luci Xiang, Leping City	Leping Industrial Trading Chamber of Commerce	Zou Guohai	Pengfei Building Ceramics Co., Ltd.	Ouyang Qi, Vice Chairman of the city industry and commerce association
5	Baita Village, Shiligang Town, Leping City	Jiangxi Jinxi Cement Co., Ltd.	Ye Lin	Jiangxi Jinxi Cement Co., Ltd.	Ye Qing, Vice Chairman of the provincial and city industry and commerce associations
6	Yangfan Village, Zhongbu Town, Leping City	Jiangxi Zhongyuan Modern Agricultural Investment Co., Ltd.	Wang Jianxing	Non-staple food and general merchandise supply chamber of the city industry and commerce association	Zou Heshui, executive member of the city industry and commerce association

6.4 Poor population's needs for the Project

It can be seen that the Project will affect and serve a large poor population. Only if the special needs of poor people are met, their suggestions accepted, and the Project's potential negative impacts on them evaded can they truly benefit from the Project. The task force identified their needs during the fieldwork, and has proposed suggestions accordingly.

1) Demand for employment: 73.1% of the MLS respondents are willing to get employed under the Project. Unskilled jobs generated at the construction and operation stages of the Project will be first made available to them.

Interview 6-1: Li XX, Donggang Village, Weishangqiao Town, Dongxiang District

I am a disabled person entitled to MLS. I can take care of myself and do simple housework, but can hardly work outside to earn money. I'm very glad to do simple jobs offered by the Project, as long as they accept me.

2) Demand for lower water rate: It can be seen from the ability to pay analysis of poor people **(see Section 7.2.2 "Ability to pay analysis")** that the proportion of their water charges to household expenditure is much higher than that of ordinary households. Extra water charges or wastewater treatment charges collected after project completion may increase their financial burden, and further aggravate their poverty. Most poor residents expect that a preferential policy be enacted for low-income households to reduce their financial burden.

Interview 6-2: Cheng XX, MLS household, Zhoushang Village, Lilin Town, Leping City

My family has financial difficulty, and relies heavily on the MLS benefit offered by the government, which is very limited. Water charges will make my family more financially difficult, and some preference for MLS households is expected. Of course, I know that the totally free use of tap water is impossible.

3) Demand for water use and water conservation for poor population: Poor people are often characterized by low educational levels and low social status. Their needs are often ignored in social activities. Publicity and training on water use and conservation should be offered giving consideration to their characteristics to promote their participation.

6.5 Impacts of the Project on poor population

The Project will involve LA, where relatively poor villages and people are often disadvantaged in using compensation, benefiting from the Project and adapting to new lifestyle, so their poverty may be aggravated. The collection of water charges and wastewater treatment charges after project completion will increase the financial burden of poor households to some extent.

In view of this, the following measures have been planned to avoid further impoverishment and ensure that poor population benefits equally from the Project:

1) Offering direct and indirect job opportunities to increase income

Job opportunities generated directly by the Project: Some temporary or permanent jobs will be generated at the construction and operation stages, such as material transport, excavation, earth filling and bricklaying, which will be first made available to local poor people and other vulnerable groups to increase their income.

Job opportunities generated indirectly by the Project: Rural tourism development is an effective way of poverty alleviation in Jiangxi, promoting the development of secondary and tertiary industries. The Project will create a good environment for tourism development, and attract more visitors to the project area, thereby generating more job opportunities indirectly, such as catering, accommodation and cleaning.

2) Improving the living environment to reduce medical expenses

Poor people are often likely to get ill due to poor living conditions and backward infrastructure, and be impoverished by medical expenses. The Project will improve local water supply and drainage facilities, and reduce domestic wastewater pollution, thereby reducing the incidence of waterborne diseases and poor households' medical expenses.

3) Promoting local economic development

The Project will improve the environment of the project area greatly, attract investment, and promote local economic development, thereby offering more job opportunities to local residents. This will promote tourism development in the 7 counties (districts), thereby promoting the development of associated industries, such as catering, accommodation and tour guidance, and the employment of local residents, such as hotel and restaurant service, cleaning, cooking, and driving. This will bring more job opportunities to local residents, especially vulnerable groups, and increase their income.

4) Promoting social fairness

The Project will improve rural water supply in the 7 counties (districts) practically, and allow

local residents to share economic and social development. The project will not only benefit a poor population of over 100,000 in the project area, and but also benefit a larger poor population in nearby areas.

7 Willingness and Ability to Pay

7.1 Willingness to pay

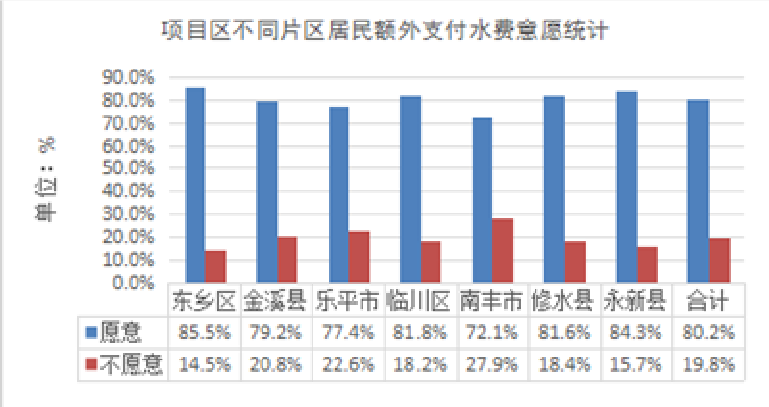
In the Project, except that Xiushui County involves wastewater treatment charges, expenses arising from the Project are water charges mainly. This chapter covers willingness to pay wastewater treatment charges in Xiushui County and willingness to pay water charges in the 7 counties (districts) mainly.

The data for willingness to pay model analysis is from the questionnaire survey. 323 valid copies of the questionnaire were recovered in total, including 38 copies in Xiushui County, 43 copies in Nanfeng County, 51 copies in Yongxin County, 72 copies in Jinxi County, 55 copies in Dongxiang District, 53 copies in Leping City and 11 copies in Linchuan District.

7.1.1 Willingness to pay water charges

7.1.1.1 Willingness to pay

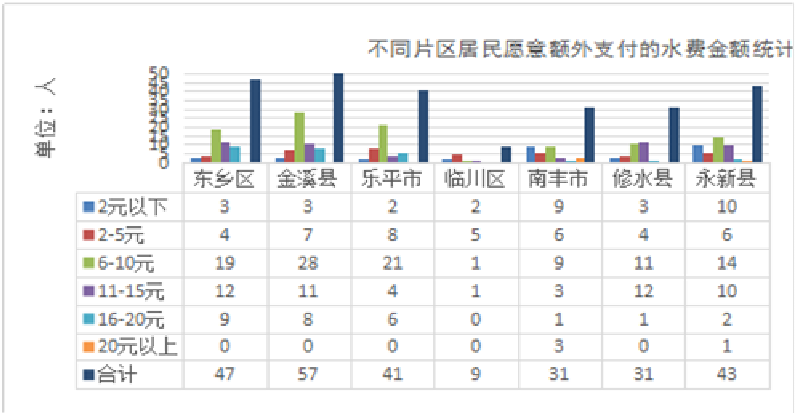
Among the 323 respondents, 80.2% are willing to pay extract water charges per month, mostly within the range of 6-10 yuan. Among the 7 project counties (districts), those willing to pay extract water charges per month account for 85.5% in Dongxiang District, 79.2% in Jinxi County, 77.4% in Leping City, 81.8% in Linchuan District, 72.1% in Nanfeng County, 81.6% in Xiushui County and 84.3% in Yongxin County. See Figure 7-1.



	东乡区	金溪县	乐平市	临川区	南丰市	修水县	永新县	合计
愿意	85.5%	79.2%	77.4%	81.8%	72.1%	81.6%	84.3%	80.2%
不愿意	14.5%	20.8%	22.6%	18.2%	27.9%	18.4%	15.7%	19.8%

Figure 7-1 Willingness to pay extra water charges by project county (district)

The range of extra water charges to be paid per month is 6-10 yuan for Dongxiang District, Jinxi County, Leping City and Yongxin County, 2-5 yuan for Linchuan District, below 2 yuan and 6-10 yuan for Nanfeng County, and 11-15 yuan for Xiushui County. See Figure 7-2.



	东乡区	金溪县	乐平市	临川区	南丰市	修水县	永新县
2元以下	3	3	2	2	9	3	10
2-5元	4	7	8	5	6	4	6
6-10元	19	28	21	1	9	11	14
11-15元	12	11	4	1	3	12	10
16-20元	9	8	6	0	1	1	2
20元以上	0	0	0	0	3	0	1
合计	47	57	41	9	31	31	43

Figure 7-2 Amounts of extra water charges willing to be paid by project county (district) (monthly)

7.1.1.2 Household income and willingness to pay

Household income may affect willingness to pay extra water charges, but not greatly. For the respondents with household income of 10,000 yuan or less, willingness to pay extra water charges is directly proportional to monthly household income[1]. See Figure 7-3.

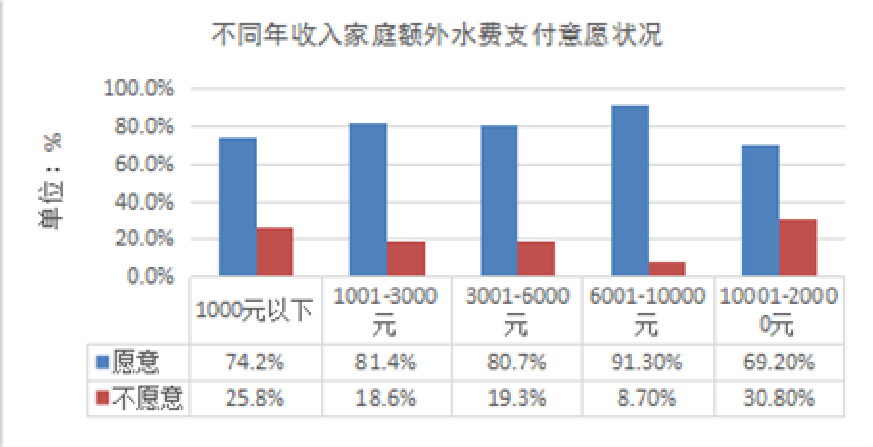


Figure 7-3 Willingness to pay extra water charges by household income

7.1.1.3 Educational level and willingness to pay

Respondents of different educational levels are all willing to pay extra water charges. Specifically, the primary school group has the highest willingness to pay of 85.3%, followed by the junior high school group (80%), and the junior college or above group has the lowest willingness to pay of 70% only. See Figure 7-4.

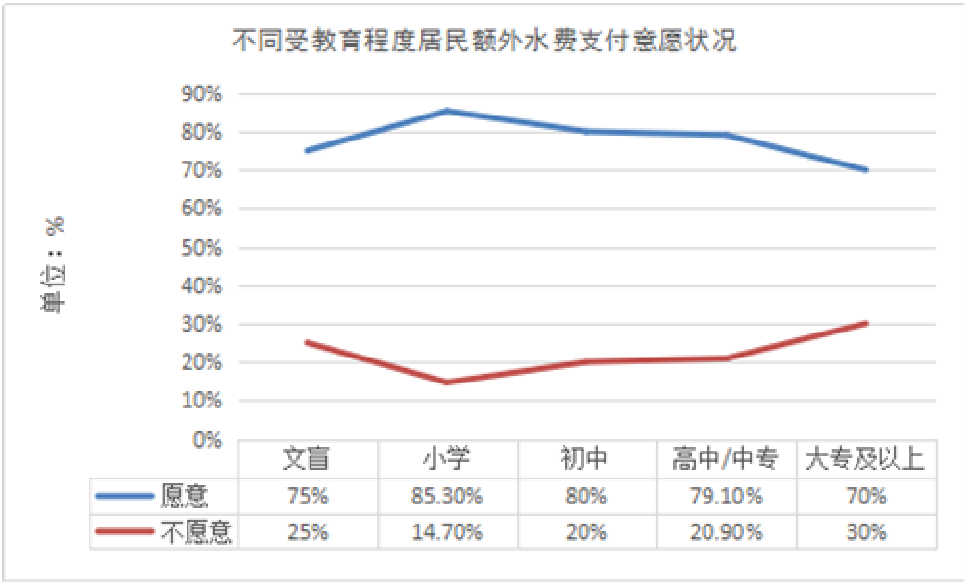


Figure 7-4 Willingness to pay extra water charges by educational level

[1] However, in the household income group of 10,001-20,000 yuan, residents willing to pay extra water charges account for the lowest proportion, even lower than the household income group of 1,000 yuan or less. This may be due to the small sample size of this group, and is not of statistical significance.

Respondents of different educational levels are mostly willing to pay extra water charges of 6-10 yuan, and the proportions of those willing to pay 20 yuan or more are the lowest in their respective groups. Those willing to pay 6-10 yuan account for 44.4%, followed by 2-5 yuan (19.4%). Among the primary school, junior high school and senior high school / secondary technical school groups, those willing to pay 6-10 yuan account for 35.8%, 44% and 38.2% respectively, followed by 11-15 yuan, accounting for 21%, 21% and 20.6% respectively. In the junior college or above group, those willing to pay 16-20 yuan account for 42.9%, followed by 2-5 yuan, accounting for 28.6%. See Table 7-1.

Table 7-1 Amounts of extra water charges willing to be paid by educational level

Amount	Illiterate		Primary school		Junior high school		Senior high school / secondary technical school		Junior college or above	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Below 2 yuan	3	8.3%	11	13.6%	12	12%	6	17.6%	0	0%
2-5 yuan	7	19.4%	14	17.3%	13	13%	4	11.8%	2	28.6%
6-10 yuan	16	44.4%	29	35.8%	44	44%	13	38.2%	1	14.3%
11-15 yuan	6	16.7%	17	21%	21	21%	7	20.6%	1	14.3%
16-20 yuan	3	8.3%	9	11.1%	9	9%	3	8.8%	3	42.9%
20 yuan or more	1	2.8%	1	1.2%	1	1%	1	2.9%	0	0%
Total	36	100%	81	100%	100	100%	34	100%	7	100%

7.1.1.4 Occupation and willingness to pay

Residents of different occupations also differ in willingness to pay extra water charges. Those more willing to extra water charges are workers of public institutions and retirees, all being 100%, followed by civil servants and freelancers, all above 80%. Farmers willing to pay extra water charges account for 80%, and migrant workers have the lowest willingness to pay, because they do not live at home most of the year, but even so, migrant workers willing to pay extra water charges account for 70.4%. See Figure 7-5.

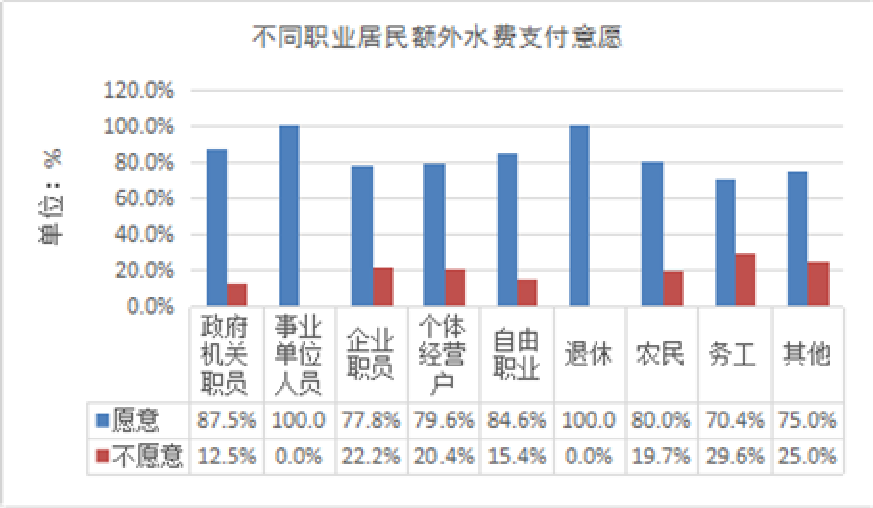
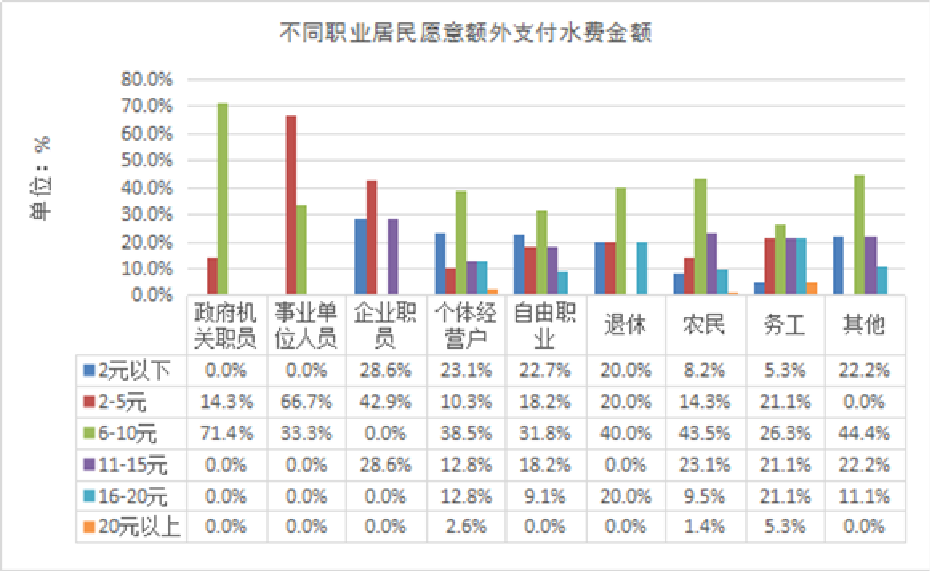


Figure 7-5 Willingness to pay extra water charges by occupation

Residents of different occupations also differ in amount of extra water charges willing to be paid. Civil servants, self-employers, freelancers, retirees and migrant workers are mostly willing to pay 6-10 yuan, while workers of public institutions and enterprise employees are mostly willing to pay 2-5 yuan. See Figure 7-6.



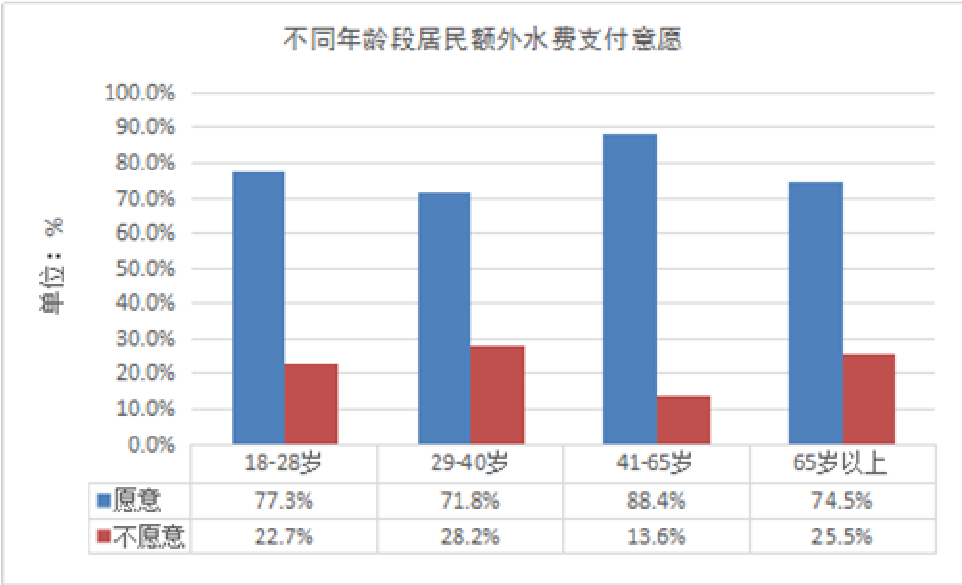
	政府机关职员	事业单位人员	企业职员	个体经营户	自由职业	退休	农民	务工	其他
2元以下	0.0%	0.0%	28.6%	23.1%	22.7%	20.0%	8.2%	5.3%	22.2%
2-5元	14.3%	66.7%	42.9%	10.3%	18.2%	20.0%	14.3%	21.1%	0.0%
6-10元	71.4%	33.3%	0.0%	38.5%	31.8%	40.0%	43.5%	26.3%	44.4%
11-15元	0.0%	0.0%	28.6%	12.8%	18.2%	0.0%	23.1%	21.1%	22.2%
16-20元	0.0%	0.0%	0.0%	12.8%	9.1%	20.0%	9.5%	21.1%	11.1%
20元以上	0.0%	0.0%	0.0%	2.6%	0.0%	0.0%	1.4%	5.3%	0.0%

Figure 7-6 Willingness to pay extra water charges by occupation (month)

Generally, willingness to pay and amount of extra payment do not correlate with occupation. The data here is for reference only.

7.1.1.5 Age and willingness to pay

Age also affects willingness to pay extra water charges to some extent. Residents aged 41-65 years (middle-aged) have the highest willingness to pay extra water charges, accounting for 88.4%; followed by those aged 18-28 years (adolescence), accounting for 77.3%. Those aged 29-40 years (mature youth) have the lowest willingness to pay, accounting for 71.8% only. 74.5% of those aged 65 years or above (old) are willing to pay. However, overall willingness to pay is above 70%. See Figure 7-7.



	18-28岁	29-40岁	41-65岁	65岁以上
愿意	77.3%	71.8%	88.4%	74.5%
不愿意	22.7%	28.2%	13.6%	25.5%

Figure 7-7 Willingness to pay extra water charges by age group

With the increase of age, from 18-28 years to 29-40 years and then to 41-65 years, the amount of extra water charges paid is rising, but there is a downward trend when it comes to 65 years or

above. See Table 7-2.

Table 7-2 Amounts of extra water charges willing to be paid by age group (monthly)

Amount	18-28 years		29-40 years		41-65 years		65 years or above	
	N	Percent	N	Percent	N	Percent	N	Percent
Below 2 yuan	6	35.3%	8	13.1%	13	8.9%	5	14.3%
2-5 yuan	5	29.4%	9	14.8%	22	15.1%	4	11.4%
6-10 yuan	0	0%	21	34.4%	67	45.9%	15	42.9%
11-15 yuan	3	17.6%	16	25.2%	28	19.2%	6	17.1%
15-20 yuan	3	17.6%	7	11.5%	13	8.9%	4	11.4%
20 yuan or more	0	0%	0	0%	3	2.1%	1	2.9%
Total	17	100%	61	100%	146	100%	35	100%

Interview 7-1: Xu XX, Group 2 of Lyufang Village, Shangdundu Town, Linchuan District (65+ years)

I don't care much about money, as long as water is good. The price of 2 yuan/ton is acceptable. Many diseases relate to drinking water. There are many cancer and calculus patients in our village. I'm so old, so it is inconvenient for me to use well water.

Interview 7-2: Chen XX, Yingbin Garden, Jinxi County (18-28 years)

I'm willing to pay water charges for high-quality water. It does not matter to adults, but it does matter to children. My child is less than one year old, and has weak body resistance. We buy bottled water for my child, but this is not a long-term measure. That's too expensive after all. We are very willing to use high-quality tap water.

7.1.1.6 Gender and willingness to pay

143 males are willing to pay extra water charges, accounting for 80.8%, higher than the proportion of 79.5% among females. See Figure 7-8.

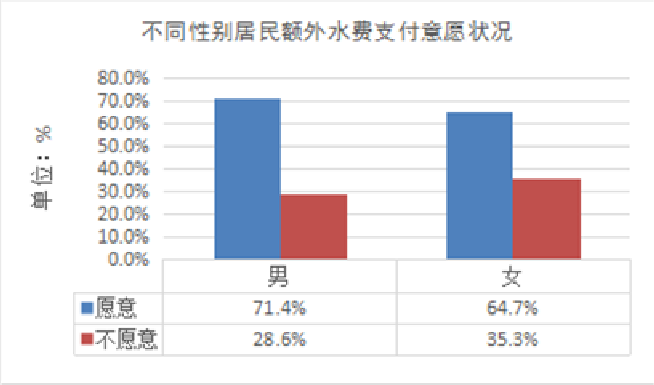


Figure 7-8 Willingness to pay extra water charges by gender

The range of extra amount willing to be paid with the highest proportion is 6-10 yuan,

regardless of gender. See Table 7-3.

Table 7-3 Amounts of extra water charges willing to be paid by gender (monthly)

Amount	Male		Female	
	N	Percent	N	Percent
Below 2 yuan	20	14%	12	10.3%
2-5 yuan	25	17.5%	15	12.9%
6-10 yuan	49	34.3%	54	46.6%
11-15 yuan	33	23.1%	20	17.2%
16-20 yuan	12	8.4%	15	12.9%
20 yuan or more	4	2.8%	0	0%
Total	143	100%	116	100%

Interview 7-3: Mr. Ye, Yejia Group of Longnan Village, Shashi Town, Yongxin County

I'm willing to pay water charges, but not too much. Water is a necessity. I'm willing to pay an extra amount of about 10 yuan per month, but this depends on water quality.

Interview 7-4: Ms Liu, Zhangfang Village, Xiaogang Town, Dongxiang District

I'm willing to pay a bit more for good water, about 5 yuan per month. My family pays over 10 yuan per month for water. As you know, it is not easy to earn money in our rural areas. Many people here just use free well water, but I think that tap water is convenient.

7.1.2 Willingness to pay wastewater treatment charges

Among the 7 project counties (districts), only Xiushui County has a wastewater treatment work. The willingness to pay wastewater treatment charges of residents in Xiushui County is analyzed separately here, with 38 samples in total.

7.1.2.1 Xiushui County

Among the 38 samples, 26 are willing to pay wastewater treatment charges, accounting for 68.4%; and 12 are unwilling to pay wastewater treatment charges, accounting for 31.6%. All those willing to pay wastewater treatment charges are only willing to pay 20 yuan or less. See Figure 7-9.

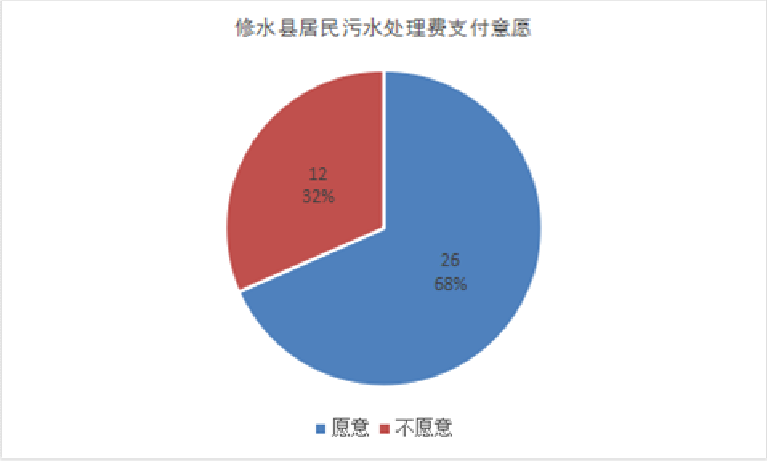


Figure 7-9 Willingness to pay wastewater treatment charges of residents in Xiushui County

Since all residents willing to pay wastewater treatment charges are only willing to pay 20 yuan or less, the amount willing to be paid has no obvious relationship with household income, educational level, occupation, age and gender.

Interview 7-5: Liang XX, Zhoujiazhuang Village, Xigang Town, Xiushui County

I support wastewater treatment, but am somewhat unwilling to pay for it. It should be the responsibility of the government, and should not be borne by us. We earn very little but have to pay many items.

Interview 7-6: Huang XX, Aoshang Village, Gangkou Town, Xiushui County

As the government has the mind to do this, it is acceptable to pay a bit money for this, but not more than 20 yuan per month, of course the less the better. Although we will benefit from it, it will take time for us to accept it. Moreover, this is an achievement of the government, and we should benefit from this.

7.1.2.2 Household income and willingness to pay

The willingness to pay wastewater treatment charges of residents in Xiushui County is directly proportion to household income. See Table 7-4.

Table 7-4 Willingness to pay wastewater treatment charges of residents in Xiushui County by household income

Willingness to pay	1,000 yuan or less		1,001-3,000 yuan		3,001-6,000 yuan		6,001-10,000 yuan		10,001-20,000 yuan	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Willing	2	66.7%	12	60%	9	75%	1	100%	2	100%
Unwilling	1	33.3%	8	40%	3	25%	0	0%	0	0%
Total	3	100%	20	100%	12	100%	1	100%	2	100%

7.1.2.3 Educational level and ability to pay

The willingness to pay wastewater treatment charges of residents in Xiushui County is inversely proportion to educational level. See Table 7-5.

Table 7-5 Willingness to pay wastewater treatment charges of residents in Xiushui County by educational level

Willingness to pay	Illiterate		Primary school		Junior high school		Senior high school / secondary technical school		Junior college or above	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Willing	1	100%	9	75%	12	70%	4	66.7%	0	0%
Unwilling	0	0%	3	25%	5	29.4%	2	33.3%	1	100%
Total	1	100%	12	100%	17	100%	6	100%	1	100%

7.1.2.4 Occupation and willingness to pay

Residents of different occupations differ in willingness to pay wastewater treatment charges, but there is no correlation. Self-employers and retirees have the highest willingness to pay wastewater treatment charges, being 100%; followed by farmers (80%) and others (66.7%);

freelancers and civil servants have the lowest willingness to pay, being 60% and 50% respectively. See Table 7-6.

Table 7-6 Willingness to pay wastewater treatment charges of residents in Xiushui County by occupation

Willingness to pay	Civil servant		Worker of public institution		Self-employer		Freelancer		Retiree		Farmer		Migrant worker		Other	
	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent	N	Percent
Willing	2	50%	0	0%	1	100%	3	60%	2	100%	16	80%	0	0%	2	66.7%
Unwilling	2	50%	1	100%	0	0%	2	40%	0	0%	4	20%	1	100%	1	33.3%
Total	4	100%	1	100%	1	100%	5	100%	2	100%	20	100%	1	100%	3	100%

Interview 7-7: Chen XX, Daqiao Village, Daqiao Town, Xiushui County

My whole family is working outside, and would return home only if there is something important. Since we stay at home for short periods, we do not rely on wastewater treatment, and are of course unwilling to pay for this.

7.1.2.5 Age and willingness to pay

Age is directly proportional to willingness to pay. In the group of 29-40 years, 54.5% of the respondents are willing to pay wastewater treatment charges; in the group of 41-65 years, this proportion is 72.7%; in the group of 65 years or above, this proportion is 80%. See Figure 7-10.

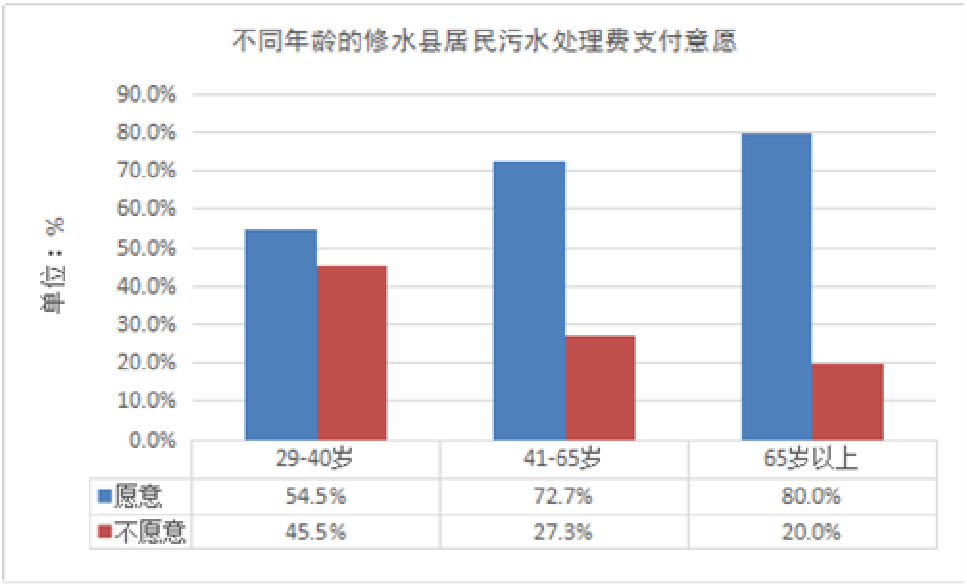


Figure 7-10 Willingness to pay wastewater treatment charges of residents in Xiushui County by age group

7.1.2.6 Gender and willingness to pay

Males are more willing to pay wastewater treatment charges than females. 71.4% of the male respondents are willing to pay wastewater treatment charges, while this proportion is 64.7% among the females. See Figure 7-11.

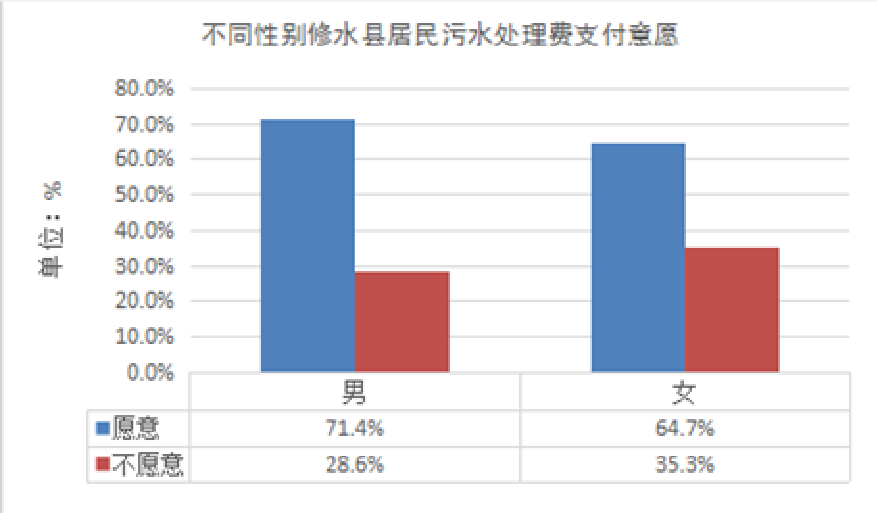


Figure 7-11 Willingness to pay wastewater treatment charges of residents in Xiushui County by gender

7.2 Ability to pay

The Study Report on Urban Water Shortage 1995 issued by the Ministry of Construction thinks a proportion of 2.5-3% of domestic water expenses to household income is appropriate for our country's urban residents. The Bank thinks that a proportion of 3-5% is feasible. In view of the socioeconomic profile of the 7 counties (districts), the reasonable level is fixed at 3% in this report.

7.2.1 Current situation of payment

Among the 7 counties (districts), water rates[2] are fixed in two modes: 1) For townships and villages serviced by township waterworks, water rates are fixed by price control and related competent authorities; 2) For villages serviced by self-built water supply works, water rates are fixed by village committees based on villager comments.

In ability to pay calculation, if the proportion of water charges to annual household income based on the highest water rate in the 7 counties (districts) is lower than the reasonable level of 3%, it is deemed that local water rates are affordable. For example, in Yongxin County, water rate is 1 yuan/ton in the Gaoqiaolou market town and 2 yuan/ton in the Huaizhong market town, so 2 yuan/ton is used for calculation. See Table 7-7.

Table 7-7 Summary of local domestic water charges

County (district)	Domestic water price (yuan/ton)		
	Tap water rate	Wastewater treatment charges	Actual water rate
Dongxiang District	1.5	0	1.5
Jinxi County	1.8	0	1.8
Leping City	1.5	0	1.5
Linchuan District	1.5	0	1.5
Nanfeng County	1.1	0	1.1
Xiushui County	1.6	0	1.6
Yongxin County	2	0	2

Source: Feasibility Study Report, fieldwork

[2] In this chapter, water charges include water charges and wastewater treatment charges.

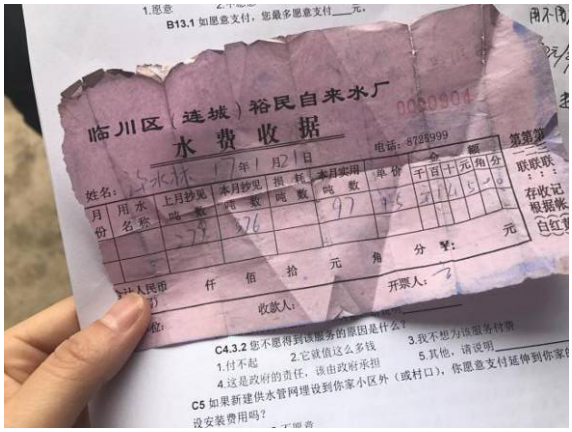


Figure 7-12 Receipts of water charges in Linchuan District

7.2.2 Ability to pay analysis

The average monthly household water consumptions of the 7 counties (districts) are as follows: Dongxiang District 11.2 tons, Jinxi County 10.3 tons, Leping City 11.2 tons, Linchuan District 10 tons, Nanfeng County 10.8 tons, Xiushui County 10.5 tons and Yongxin County 10.4 tons. The proportions of water charges to annual income for urban households are 0.3%, 0.3%, 0.2%, 0.2%, 0.2%, 0.25% and 0.4% respectively, and those for rural households 0.6%, 0.6%, 0.3%, 0.4%, 0.2%, 0.72% and 0.9% respectively. It can be seen that the above proportions are much lower than the reasonable level of 3%, indicating that existing water rates in the project area are affordable for local households. See Table 7-8.

For MLS households, average annual household income is calculated based on the per capita monthly MLS benefits of the 7 counties (districts) here. According to the Notice of the Jiangxi Provincial Government on Issuing the 2016 Opinions on Livelihood Improvement Arrangements (JPG [2016] No.8), the per capita monthly urban MLS benefit is now 320 yuan, and the per capita monthly rural MLS benefit195 yuan in the 7 counties (districts). Based on calculation, the proportions of water charges to annual income for urban MLS households are 1.3%, 1.8%, 1.1%, 1.6%, 1%, 1.4% and 0.2% respectively, and those for rural MLS households 2.3%, 3%, 1.9%, 2.6%, 1.7%, 2.3% and 2.9% respectively. It can be seen that even the proportions of MLS households are also lower than the reasonable level, indicating that existing water rates in the project area are affordable for local MLS households[3].

Table 7-8 Ability to pay analysis of local ordinary and MLS residents[4]

County (district)			Monthly water consumption (ton)	Annual water consumption(ton)	Annual water charges	Per capita annual income (yuan)	Average population per household	Average annual household income	Percentage of water charges to annual household income (%)
Dongxiang District	Urban	Ordinary	11.2	134	201	19324.7	3.8	73433	0.3%
		MLS	11.2	134	201	3840	3.8	14592	1.3%
	Rural	Ordinary	11.2	134	201	9495.2	3.8	36081	0.6%
		MLS	11.2	134	201	2340	3.8	8892	2.3%

[3] According to organizational interviews, there is no preferential policy on water charges for MLS households in the 7 counties (districts).

[4] In the table, annual water consumption = monthly water consumption × 12; annual water charges = annual water consumption × water rate; average annual household income =per capita annual income × average population per household; percentage of annual water charges to annual household income = annual water charges / average annual household income; MLS households per capita annual income = MLS standard ×12

Jinxi County	**Urban**	**Ordinary**	10.3	124	223.2	23914	3.1	23914	0.3%
		MLS	10.3	124	223.2	3840	3.1	3840	1.8%
	Rural	**Ordinary**	10.3	124	223.2	11582	3.1	11582	0.6%
		MLS	10.3	124	223.2	2340	3.1	2340	3%
Leping City	**Urban**	**Ordinary**	11.2	134.2	201.3	26785	4.6	123211	0.2%
		MLS	11.2	134.2	201.3	3840	4.6	17664	1.1%
	Rural	**Ordinary**	11.2	134.2	201.3	12729	4.6	58553.4	0.3%
		MLS	11.2	134.2	201.3	2340	4.6	10764	1.9%
Linchuan District	**Urban**	**Ordinary**	10	120	180	30530	3	91590	0.2%
		MLS	10	120	180	3840	3	11520	1.6%
	Rural	**Ordinary**	10	120	180	13925	3	41775	0.4%
		MLS	10	120	180	2340	3	7020	2.6%
Nanfeng County	**Urban**	**Ordinary**	10.8	130	143	25513	3.5	25513	0.2%
		MLS	10.8	130	143	3840	3.5	3840	1%
	Rural	**Ordinary**	10.8	130	143	17147	3.5	17147	0.2%
		MLS	10.8	130	143	2340	3.5	2340	1.7%
Xiushui County	**Urban**	**Ordinary**	10.5	126.5	202.4	22224	3.7	82228.8	0.25%
		MLS	10.5	126.5	202.4	3840	3.7	14208	1.4%
	Rural	**Ordinary**	10.5	126.5	202.4	7599	3.7	28116.3	0.72%
		MLS	10.5	126.5	202.4	2340	3.7	8658	2.3%
Yongxin County	**Urban**	**Ordinary**	10.4	125	250	19517	3.6	70261.2	0.4%
		MLS	10.4	125	250	3840	3.6	13824	0.2%
	Rural	**Ordinary**	10.4	125	250	7587	3.6	27313.2	0.9%
		MLS	10.4	125	250	2340	3.6	8424	2.9%

Source: 1) questionnaire survey; 2) statistical yearbooks; 3) Water Resources Bulletin 2014 of Jiangxi Province

It can be seen that:

1) In view of the economic development and income growth of the 7 counties (districts) in the next few years, water charges are affordable for local residents. However, since no wastewater treatment charge is levied on rural residents in the 7 counties (districts) rural residents (for urban residents, wastewater treatment charges are included in water charges), it is still unknown if water charges inclusive of wastewater treatment charges are affordable for local residents.

2) The collection of water charges will affect poor people more severely than ordinary residents, and bring pressure to their livelihoods.

3) Preferential policies for low-income households will help reduce their financial burden.

4) The governments and owners of the 7 counties (districts) should promulgate preferential policies for vulnerable groups as soon as possible to reduce their financial burden and ensure that they benefit from the Project.

8 Social Gender Analysis

8.1 Local female population

At the end of 2015, Jiangxi had a resident population of 45.656 million, an increase of 234,700 or 5.2%from 2014, including 23.437 million males and 22.219 million females, with a gender ration of 105.5.

The 7 project counties (districts) have a population of 4.611 million, including 2.173 million females, accounting for 47.1%, with a gender ratio of 112.2, higher than the provincial average by 6.6. Among the 7 project counties (districts), Jinxi County has the highest proportion of female population of 48.1%, and Leping City has the lowest proportion of 46.4%; Leping City has the highest gender ratio of 115.7, and Jinxi County has the lowest ratio of 107.8. See Table 8-1.

Table 8-1 Basic information of local women (2015)

Division	HHs (0,000)	Population (0,000)	Males (0,000)	Females (0,000)	Percentage of females	Gender ratio (female = 100)
Jiangxi Province	1266.9	4565.6	2343.7	2221.9	48.7%	105.5
Project area	142.1	461.1	243.8	217.3	47.1%	112.2
Dongxiang District	11.5	43.8	23.1	20.7	47.3%	111.4
Jinxi County	10.3	31.8	16.5	15.3	48.1%	107.8
Leping City	27.5	93.2	50	43.2	46.4%	115.7
Linchuan District	40.7	121.1	64.6	56.5	46.7%	114.3
Nanfeng County	9.9	31.6	16.6	15	47.5%	110.7
Xiushui County	23.6	87.1	45.5	41.6	47.8%	109.4
Yongxin County	18.6	52.5	27.5	25	47.6%	110

Source: Statistical Yearbook 2015 of Jiangxi Province, Data of the 6th National Census of Jiangxi Province, Data of the 6th National Census of Dongxiang District, Statistical Yearbook 2016 of Leping City, Statistical Yearbook 2016 of Linchuan District, Statistical Yearbook 2014 of Nanfeng County, Statistical Yearbook 2016 of Xiushui County, Statistical Yearbook 2015 of Yongxin County

8.2 Current situation of local women

To learn local women's development, the task force conducted a questionnaire survey, with 146 female respondents, accounting for 45.2% of all samples.

1) Age structure

Among the respondents, those aged 41-65 years account for 52.3%, being 50.8% and 54.1% for males and females respectively. Among the females, those aged 41-65 years are the most, followed by those aged 29-40 years, and those aged 18-28 years are the least. See Figure 8-1.

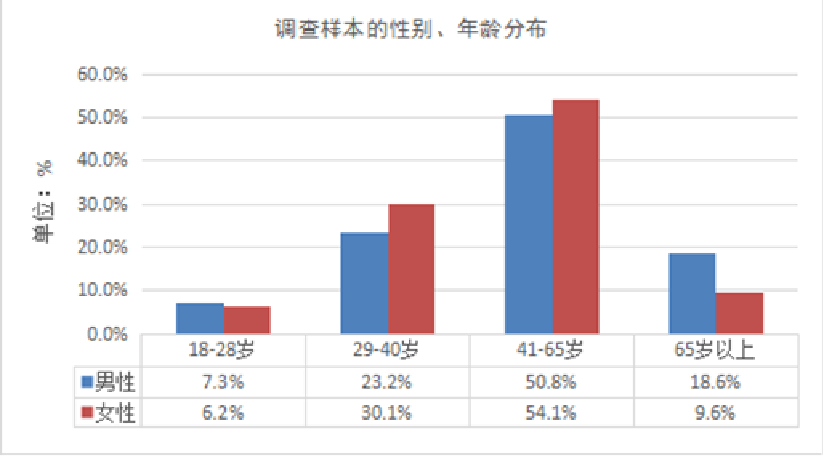


Figure 8-1 Distribution of respondents by gender / age

2) Educational level

64.4% and 72.3% of the female and male respondents have received primary school or junior high school education respectively. 3.4% of the females have received junior college or above education, higher than that of the males of 2.8%; 15.8% of the males have received senior high school / secondary technical school education, higher than that of the females of 10.3%; 21.9% of the females are illiterate, higher than that of the males of 9%. It can be seen that there are significant differences in educational level between the males and females, and the overall educational level of the females is slightly lower than that of the males. See Table 8-2.

Table 8-2 Distribution of samples by gender and educational level

Educational level	Male		Female		Total	
	Population	Percent	Population	Percent	Population	Percent
Junior college or above	5	2.8%	5	3.4%	10	3.1%
Senior high school / secondary technical school	28	15.8%	15	10.3%	43	13.3%
Junior high school	74	41.8%	51	34.9%	125	38.7%
Primary school	54	30.5%	43	29.5%	97	30%
Illiterate	16	9%	32	21.9%	48	14.9%
Total	177	100%	144	100%	323	100%

3) Occupation

More than half of the male and female respondents are farmers, showing no significant gender difference. Among the females, the proportions of workers of public institutions, employees of state-owned enterprises, self-employers, freelancers, retirees and migrant workers are lower than those of the males, showing an obvious division of labor by gender, where males deal with external affairs, while females with internal affairs mainly. According to interviews, women do farm work and housework mainly, and even those employed work at nearby enterprises or in the slack season. Men usually enjoy higher family status than women. See Table 8-3.

Table 8-3 Distribution of samples by gender and occupation

Occupation	Male		Female		Total	
	Population	Percent	Population	Percent	Population	Percent
Civil servant	4	2.3%	4	2.7%	8	2.5%
Worker of public institution	2	1.1%	1	0.7%	3	0.9%
Employee of state-owned enterprise	6	3.4%	3	2.1%	9	2.8%
Self-employer	28	15.8%	21	14.4%	49	15.2%
Freelancer	16	9%	10	6.8%	26	8%
Retiree	3	1.7%	2	1.4%	5	1.5%
Farmer	101	57.1%	83	56.8%	184	57%
Migrant worker	15	8.5%	12	8.2%	27	8.4%
Other	2	1.1%	10	6.8%	12	3.7%
Total	177	100%	145	100%	323	100%

Note: “Other” mainly includes old people aged 65 years or above and students.

4) Social status

A) The traditional gender-based division of labor remains.

72.9% of the respondents’ families are headed by men, while only 11% headed by women. See Figure 8-2.

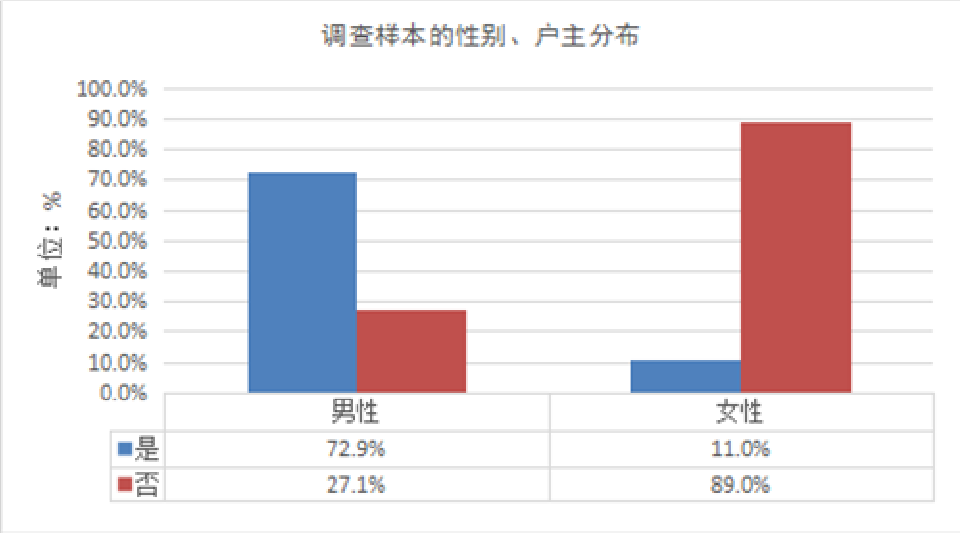


Figure 8-2 Distribution of samples by gender / household head

When asked “Which member of your family will attend meetings related to the Project?”, 58.9% of the respondents choose man, only 15.1% choose woman, and 26% choose whoever is free. See Figure 8-3.

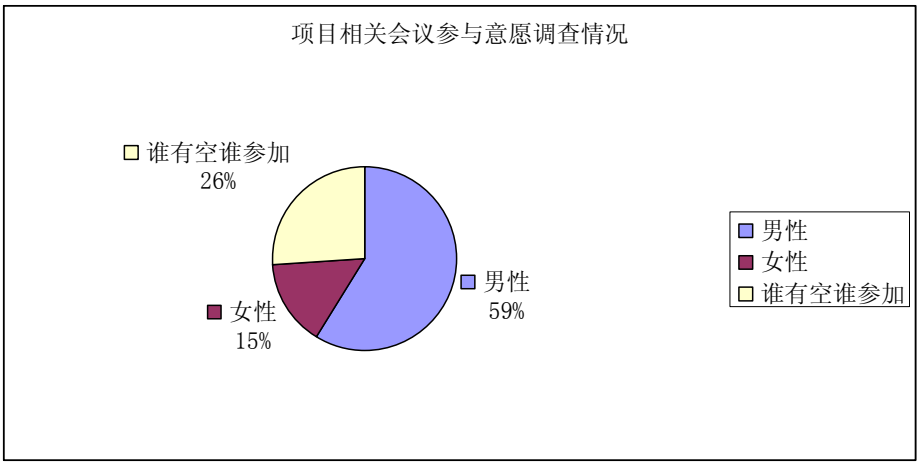


Figure 8-3 Willingness to attend meetings related to the Project

Interview 8-1: Wei XX, Nongminjie Village, Dengjia Xiang, Dongxiang District

Village committee meetings are mostly attended by my husband or father-in-law. I have never been there, and don’t want to be there, because all attendees are men.

It can be seen that:

- Local women’s social status is lower than that of men;
- Women’s overall educational level is low and lower than that of men;
- Women’s participation level in and influence over public affairs are weaker than those of men.

2) Local women’s social status has improved, and the proportion of women participating in political affairs is increasing.

However, in recent years, through active efforts of government agencies, women's federations and public welfare organizations (or international organizations), local women have more opportunities to participate in public affairs, and enjoy public services and supporting policies.

In the 7 project counties (districts), women's social status is improving gradually, and the number of women participating in political affairs is increasing. To promote women's participation in decision-making and management, local women's federations have enacted and improved relevant policies. Measures have been taken to increase the percentage of women in people's congress and political consultative conference members at all levels. There is at least one female official in the leadership of each government at or above the county level, and the number of female officials in leadership of the departments under township governments is increasing gradually. The percentage of female members in corporate boards of directors and supervisors, and management levels, and female deputies in workers' and teachers' congresses is increasing gradually. All village committees have female members, over 5% of village heads are women, and about 50% of staff members of community committees are women.

Women's economic participation has been activated. Local governments and social organizations have created favorable conditions for women's employment, offered public welfare jobs to women, and taken such measures as policy support, tax exemption, loan discounting, social insurance subsidization, training subsidization, small-amount loan and follow-up guidance to support women's business startup and reemployment. In addition, local women's federations motivate women to excel in building morals and creating wealth.

More and more public activities oriented to women in the project area will certainly provide women with more opportunities to participate in public affairs, improve their ability to participate in social activities, increase their technical, social and material capital, and make it possible to increase their income, and elevate their family and social status.

8.3 Gender difference analysis

At the preparation stage, the Jiangxi and local PMOs, design agency, and task force learned local women's needs and suggestions by means of FGD, interview, etc.

1) Women's demand for wastewater treatment is stronger.

There is a clear gender-based division of labor in the project area. Women are the main force of domestic water use and wastewater disposal. When asked "Which member of your family disposes of domestic wastewater most often?", 71.1% of the respondents choose young woman, 21.1% choose old woman, totaling 92.2%, and only 7.9% choose man (old woman: 0%). See Figure 8-4.

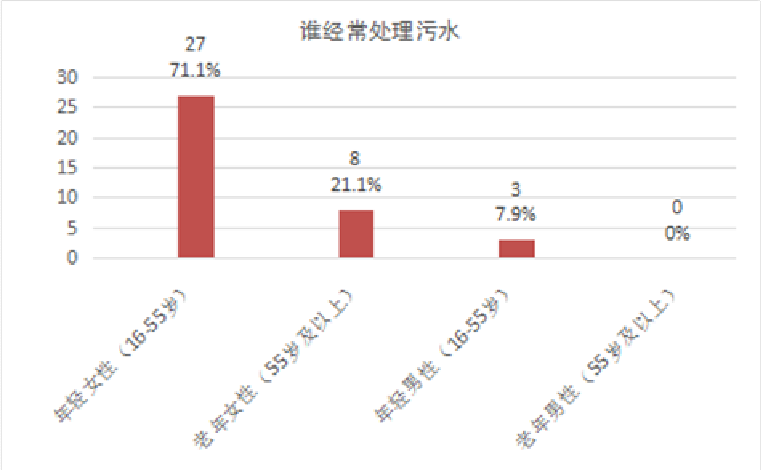


Figure 8-4 Distribution of samples in Xiushui County by gender and role in wastewater treatment

2) Women's support for tap water supply is slightly weaker than that of men.

Since women do more housework, the Project will affect women much more than men in terms of tap water supply. 83.6% of the female respondents support the Project, where the support rate in Linchuan District is the highest, being 100%. However, women in the other 6 project counties (districts) support the Project less strongly than men, because free self-owned water sources exist there, and they think that tap water will increase their financial burden. However, men support the Project more strongly because they are better educated and work outside, and have deeper experiences of the safety and convenience of tap water. See Table 8-4.

Table 8-4 Project awareness of samples by gender

County (district)	Gender	Supporting		Not supporting		Don't care	
		Population	Percent	Population	Percent	Population	Percent
Dongxiang District	Male	26	96.3%	0	0%	1	3.7%
	Female	23	82.1%	0	0%	5	17.9%
Jinxi County	Male	33	91.7%	0	0%	3	8.3%
	Female	30	83.3%	1	2.8%	5	13.9%
Leping City	Male	26	92.9%	1	3.6%	1	3.6%
	Female	20	80%	1	4%	4	16%
Linchuan District	Male	4	57.1%	1	14.3%	2	28.6%
	Female	4	100%	0	0%	0	0%
Nanfeng County	Male	27	90%	0	0%	3	10%
	Female	11	84.6%	0	0%	2	15.4%
Xiushui County	Male	20	95.2%	0	0%	1	4.8%
	Female	14	82.4%	1	5.9%	2	11.8%
Yongxin County	Male	25	89.3%	0	0%	3	10.7%
	Female	20	87%	0	0%	3	13%
Total	Male	161	91%	2	1.1%	14	7.9%
	Female	122	83.6%	3	2.1%	21	14.4%

3) Women expect more employment and income growth opportunities from the Project.

Some unskilled jobs will be generated at the construction and operation stages. Such jobs are mostly close to living areas, and are therefore expected by local women. 66.4% of the female respondents are willing to get employed under the Project, ranging from 84.6% (Nanfeng County) to 25% (Linchuan District). See Table 8-5.

Table 8-5 Expectations for employment of samples

County (district)	Gender	Willing		Unwilling		Don't know	
		Population	Percent	Population	Percent	Population	Percent
Dongxiang District	Male	22	81.5%	3	11.1%	2	7.4%
	Female	16	57.1%	4	14.3%	8	28.6%
Jinxi County	Male	32	88.9%	1	2.8%	3	8.3%
	Female	27	75%	6	16.7%	3	8.3%
Leping City	Male	23	82.1%	1	3.6%	4	14.3%
	Female	16	64%	0	0%	9	36%
Linchuan District	Male	3	42.9%	3	42.9%	1	14.3%
	Female	1	25%	2	50%	1	25%
Nanfeng County	Male	26	86.7%	1	3.3%	3	10%
	Female	11	84.6%	0	0%	2	15.4%
Xiushui	Male	17	81%	4	19%	0	0%

County	Female	11	64.7%	4	23.5%	2	11.8%
Yongxin County	Male	19	67.9%	6	21.4%	3	10.7%
	Female	15	65.2%	7	30.4%	1	4.3%
Total	Male	142	80.2%	19	21.4%	3	10.7%
	Female	97	66.4%	23	15.8%	26	17.8%

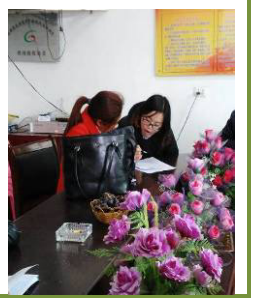
Source: fieldwork

Interview 8-2: women's FGD in Meixi Village, Shishan Town, Nanfeng County

We are willing to do jobs generated by the Project. We are poorly educated, and would do farm work and housework at ordinary times. We cannot work outside like men, because we have to take care of old people and children at home, but we want to earn some money in this way.

Interview 8-3: women's head of Laixi Village, Laixi Town, Nanfeng County

In our village, almost all farm work and housework is done by women, mostly middle-aged or old women. Young men are mostly working in the county town. However, farming is tiring and not profitable, so many women stay at home to take care of children and old people. If the Project could offer some jobs, the employment problem of women in our village will be solved to some extent.



4) Women have strong demand for public participation.

It can be seen from above that local women's social status is still lower than that of men, and participate in such public activities as compensation receipt, environmental education, health publicity, water conservation and wastewater treatment training, and community meetings at a low level. Local women are generally willing to participate in such activities, and expect that greater attention be paid to their needs and interests in such activities.

8.4 Impacts of the Project on women

8.4.1 Positive impacts

1) Increasing women's job opportunities and income

Some unskilled jobs generated at the construction and operation stages will be first made available to women, poor people and other vulnerable groups. In addition, the Project will improve the rural living environment, thereby promoting local tourism development and generating related jobs, such as hotel and restaurant service, cleaning, and tour guidance.

2) Encouraging women's participation, and promoting women's development

The Bank always encourages the participation of women, and pays attention to the protection of women's rights and interests. During project implementation, a maintenance tam for integrated urban and rural water supply will be established in each affected village, in which not less than 30% of members will be women, thereby further involving women in the Project, and creating more development opportunities to them. In addition, special skills training and health publicity activities will be conducted for women to improve their environmental and health awareness, and promote their long-term development. The survey shows that the female respondents are highly willing to participate in such public activities.

3) Reducing women's labor intensity

The Project will eliminate women's need to take water from wells, mountain springs or rivers, or buy bottled water, thereby reducing their labor intensity. On the other hand, the Project will make

wastewater disposal more convenient for women.

4) Reducing waterborne diseases

Local women are the main force of housework, and often use tap water and dispose of domestic wastewater. The exposure to substandard tap water or wastewater will increase their probability of suffering from waterborne diseases.

The Project will help improve the local water environment, and reduce women's exposure to substandard tap water or wastewater, thereby reducing waterborne diseases and potential medical expenses, and improving women's physical health. 46.4% of the female respondents think that the Project will reduce diseases.

8.4.2 Negative impacts

Although the Project will benefit women in some aspects, if social gender sensitivity is insufficient at the design, construction and operation stages, women's needs may be neglected or their benefits from the Project reduced. The main risks include:

1) Women's participation level in the Project is low, and their needs are likely to be ignored.

Local women's social status is still lower than that of men. Most major family decisions are made by men, and most participants in public affairs are still men. Thus, women's needs and suggestions are likely to be ignored at the design, construction and operation stages.

2) Women's rights in receiving compensation and getting employed can hardly be protected.

In compensation distribution, some women cannot sign to receive compensation because they are not household heads. Therefore, they are likely to be passive in using compensation.

At the construction and operation stages, female laborers are likely to be treated unfairly, such as recruitment, reward and labor protection.

Interview 8-4: Head of Luoxi Village, Shashi Town, Yongxin County

In our rural areas, family affairs are mostly decided by men, and village meetings are mostly attended by men, because women cannot make decisions.

3) Women's agricultural income is reduced due to LA.

LA under the Project may affect women's living standard directly because land-based income will be reduced, and farm products have to be bought from the market. If land-appropriated women cannot find suitable jobs, their income will be reduced, and their financial burden increased.

4) Increased water and wastewater treatment charges will increase women's financial burden.

After project completion, rural residents will be faced with water charges, wastewater treatment charges and house connection costs, thereby increasing the expenditure of local residents, including women.

In addition, some jobs offered by the Project are temporary, and female laborers will have to find other jobs after project completion, resulting in short-term income fluctuation.

The Gender Action Plan and Social Action Plan of the Project have been developed in consultation with the PMOs, IAs, local women's federations and other agencies concerned. See Table 9-1 in Chapter 9.

9 Social Action Plan and Implementation

9.1 Social Action Plan

For the potential negative impacts of the Project, the task force has developed the Social Action Plan based on the fieldwork and through consultation with stakeholders.

1) Reducing LA risks

A) Develop a detailed RAP; B) Pay special attention to the income restoration of vulnerable groups in the RAP.

2) Avoiding construction impacts on local residents

A) Lay pipelines along flat terrains, and avoid living areas where possible; B) Strengthen the supervision over material sources to ensure construction quality, and establish a pipeline maintenance mechanism to avoid bursting; C) Conduct publicity before construction, and carry out construction in segments to minimize impacts on nearby stores; D) Take measures to control noise; E) Sprinkle access roads regularly to prevent flying dust; F) Set up non-horning signs in densely populated areas, and avoid overnight construction where possible.

3) Guiding villagers to treat the Project properly, and reducing the damage to interior decoration

A) Strengthen publicity on the Project to guide villagers to use tap water and treatment facilities voluntarily; B) Optimize the design of water supply and sewer pipelines in consultation with villagers to minimize the damage to interior decoration; C) For any inevitable damage, conduct functional restoration or offer compensation properly.

4) Establishing a maintenance mechanism to avoid subsequent risks

A) Appoint staff for system operation and maintenance, and offer professional training during 18-month trial operation; B) Keep the staff stable and assign responsibilities clearly; C) Establish appeal and supervision mechanisms, and contact points above the village level, and involve villagers in project supervision.

5) Conducting option comparison to reduce the financial burden of village collectives

A) Conduct option comparison in consideration of operation and maintenance costs; B) Exempt or reduce system operation and maintenance costs for village collectives based on their financial affordability.

6) Exempting or reducing charges for vulnerable groups

A) Develop preferential policies on water charges and wastewater treatment charges for poor population; B) Hold a public hearing when adjusting water and wastewater treatment rates.

7) Addressing the impact on power generation properly

A) Coordinate interests between water supply companies and hydropower stations, and offer rational compensation; B) Develop compensation measures based on practical conditions to make up losses arising from water supply.

8) Expanding publicity and education to prevent social risks

A) Strengthen publicity and education on public health and AIDS prevention; B) Include education on public health and AIDS prevention in construction contracts for effective performance; C) Establish a physical checkup mechanism for construction staff (i.e., setting up temporary infirmaries and utilizing local medical resources); D) Conduct diversified publicity on AIDS prevention (brochure, poster, album, etc.); E) Conduct publicity on local social and cultural customs to reduce potential conflicts.

The Gender Action Plan and Social Action Plan of the Project have been developed in

consultation with the PMOs, IAs, local women's federations and other agencies concerned. See Table 9-1.

Table 9-1Social Action Plan and Gender Action Plan

Risk	Measures or actions	Actors	Time	Funding	Monitoring indicators
1. Insufficient project awareness and participation	a) Strengthen publicity on the Project to guide villagers to use tap water and treatment facilities voluntarily; b) Strengthen project information disclosure; c) Optimize the design of water supply and sewer pipelines in consultation with villagers; d) For any inevitable damage, conduct functional restoration or offer compensation properly; e) Set villagers with good water conservation and environmental awareness as examples.	PMOs, design agency, township governments, village committees, villagers	Preparation, construction, operation	Project budget, government finance	a) Project publicity materials, publicity frequency and sign-in form of participants; b) Time, location and participants of publicity; c) Grievances about interior decoration damage and handling; d) Number of villagers recognized
2. LA risks	a) Develop a detailed RAP; b) Pay special attention to the income restoration of vulnerable groups in the RAP.	PMOs, owner, RAP preparation agency, external M&E agency	Preparation, construction	Project budget	a) RAP
3. Construction risks	a) Lay pipelines along flat terrains, and avoid living areas where possible; b) Avoid the busy season of farming; c) Conduct publicity before construction, and carry out construction in segments; d) Take measures to control noise; e) Sprinkle access roads regularly to prevent flying dust; f) Set up non-horning signs in densely populated areas, and avoid overnight construction where possible; g) Strengthen the supervision over material sources to ensure construction quality, and establish a pipeline maintenance mechanism.	PMOs, contractor	Preparation, construction	Budget of the Environmental Management Plan	a) Pipeline routing and distance from living areas; b) Construction time and disbursement of compensation; c) Modes and frequency of publicity; d) Grievances about environmental pollution and handling; e) Inclusion of construction safety management in construction contracts, and safety awareness publicity and education; f) Number of signs and repaired public facilities; g) Material quality and maintenance mechanism
4. Maintenance staff and training, and option comparison	a) Appoint staff for system operation and maintenance, and offer professional training; b) Keep the staff stable and assign responsibilities clearly; c) Establish appeal and supervision mechanisms, and contact points above the village level; d) Conduct option comparison in consideration of operation and maintenance costs.	PMOs, owner, village committees, villagers	Preparation, construction, operation	Project budget, township and village finance	a) Time and scope of training; b) Stability of operation and maintenance staff; c) Establishment of appeal and supervision mechanisms, and contact points above the village level; d) Project design
5. Ability to pay of vulnerable groups	a) Develop preferential policies on water charges and wastewater treatment charges for poor population; b) Hold a public hearing when adjusting water and wastewater treatment rates.	Water supply companies, civil affairs bureaus	Operation	Government finance	a) Number of persons covered by preferential policies, and amount exempted; b) Time, location and participants of the public hearing
6. Women's participation	a) Not less than 40% of participants in public participation activities at the preparation stage should be women;	Design agency, contractor, PMOs,	Construction, operation	Project budget, government	a) Number of public participation activities, number of female participants, and minutes;

	b) Not less than 30% of members of village maintenance teams should be women; c) Compensation should be received after signature by a couple; d) Each project agency (PMOs, water supply companies, sewerage companies, etc.) should have at least two female members; e) Conduct project publicity at times and locations, and in forms suitable for women; f) Tailor publicity to women's cognition; g) Give publicity and training on water conservation and tap water use to women.	county / district agencies concerned, township governments, village committees, local women, poor people		finance	b) Number and proportion of female members, feedback and suggestions; c) Signature of women; d) Number of female members in project agencies; e) Time, location and mode of publicity and training
7. Job opportunities for vulnerable groups	a) Make unskilled jobs first available to women and other vulnerable groups. b) Ensure equal pay to equal work.	PMOs, contractor, labor and social security bureau, village committees, local women	Construction	Contractor budget	a) Number of vulnerable people doing unskilled jobs at the construction stage; b) Number of vulnerable people doing public welfare jobs at the operation stage
8. Women's employment in IAs	a) Recruit some female members for PMOs for the convenience of women-related work; b) Employ a certain number of female workers for water supply companies, such as meter readers and coordinators, running maintenance staff, toll collector, etc. c) Offer training for women's recruitment and employment.	PMOs, contractor, labor and social security bureau, village committees, local women	Construction	Contractor budget	a) Number of vulnerable people doing unskilled jobs at the construction stage; b) Number of vulnerable people doing public welfare jobs at the operation stage; c) Location, scope and frequency of female employees
9. Impact on power generation	a) Coordinate interests between water supply companies and hydropower stations, and offer rational compensation; b) Develop compensation measures based on practical conditions to make up losses arising from water supply.	Owners, PMOs, water supply companies, power generation companies	Construction	Project budget, profit of water supply company	a) Compensation measures between water supply companies and hydropower stations; b) Annual amount of compensation and payment
10. Social risks	a) Strengthen publicity and education on public health and AIDS prevention; b) Include education on public health and AIDS prevention in construction contracts for effective performance; c) Establish a physical checkup mechanism for construction staff (i.e., setting up temporary infirmaries and utilizing local medical resources); d) Conduct diversified publicity on AIDS prevention (brochure, poster, album, etc.); e) Conduct publicity on local social and cultural customs to reduce potential conflicts.	Contractors, local agencies concerned, owners, enterprises, township governments, village committees	Construction	Project budget, budgets of local agencies concerned	a) Provisions of construction contract, and implementation; b) Number of participants in training on public health and AIDS prevention; c) Number of health centers; d) Quantities of publicity materials on AIDS prevention at the construction stage; e) Quantities of publicity materials on local social and cultural customs at the construction stage

9.2 Public Participation Plan

The following information disclosure and public participation plan has been developed on the basis of the fieldwork through participatory observation. See Table 9-2. (See the Beneficiary Participation Handbook prepared separately for the Project for details.)

Table 9- 2 Public Participation Plan of the Project

Stage	Item	Modes	Actors	Participants	Rules and measures of participation	Funding
Preparation	Public awareness	Leaflet distribution, media coverage, village congress, etc.	PMOs Local governments Village committees Design and consulting agencies	Local residents (esp. in project villages), township officials, PMOs, Design and consulting agencies	Disseminating project information to increase project awareness; Disclosing the scope of construction and village selection criteria, and conducting a selection willingness survey; Strengthening public participation through the design and consulting agencies	10,000 yuan per township
	Project design disclosure, optimization and comparison	consultation (FGD with villager reps.), design disclosure	PMOs Design agency Township governments, Village committees, villager reps.	PMOs, design agency, township governments, Village committees, villager reps. (esp. in project villages)	Conducting a project coordination meeting with the design agency, township governments, and village committees; Discussing the feasibility of the project design with village committees and villager reps.; Disclosing the preliminary design at village bulletin boards for comments for not less than two weeks	Feasibility study budget
	Demand and acceptance levels	Village congress, DMS, sampling survey	PMOs Design and consulting agencies Village committees	PMOs, design and consulting agencies, township governments, Village committees, villager reps. (esp. in project villages)	Conducting a sampling survey on local residents' demand for and acceptance of the Project; Strengthening communications with local residents, and learning their attitudes and comments	4,000 yuan per township
	Construction site selection	Prior consultation, survey, interview, FGD, disclosure	PMOs Design agency Township governments Village committees Local residents	PMOs, township governments, Village committees, residents, design agency, consulting agency	Conducting extensive informed consultation with local residents based on the design drawings; Determining construction sites and coverage	4,000 yuan per township
	Ability and willingness to pay	Baseline survey, questionnaire survey, interview, FGD with villager reps.	PMOs Design agency Township governments Village committees Local residents	PMOs, design agency, consulting agency, township governments, Village committees, residents	Learning local residents' ability and willingness to pay water charges through a baseline survey; Identifying potential issues, and proposing pertinent suggestions and measures	4,000 yuan per township
	Publicity and	Leaflet	PMOs	PMOs, township	Giving publicity on the scope of construction and mode of	8,000 yuan per

	education (project benefits)	distribution, media coverage, village congress, school and community publicity	Local governments Township governments Village committees Local residents	governments, Village committees, residents	water supply; Communicating the benefits of water supply; Communicating the benefits of wastewater treatment	township
Construction	Participation framework for social assessment	Information disclosure, public opinion creation and guidance, framework finalization	PMOs, township governments Village committees Village supervision committees, residents	PMOs, culture and broadcast bureau, township governments, Village committees Village supervision committees, local residents	Disclosing the participation framework for social assessment; Disclosing the procedure and mode of implementation; Breaking down tasks under the framework	10,000 yuan per township per annum
	Training on participation handbook	Participation handbook training by level and batch	PMOs Township governments Village committees Village supervision committees Local residents	PMOs, township governments, Village committees, Village supervision committees, local residents, consulting agency	Training county and township officials on the handbook; Training village and group officials on the handbook; Training members of village supervision committees on their rights and obligations; Training on operation and maintenance; Supervision and management measures	20,000 yuan per township per annum
	Construction information disclosure	Villager congress, construction information disclosure	PMOs Construction agency Village committees	PMOs, construction agency, Village committees, Village supervision committees, local residents	Regular reporting of construction progress, site distribution and negative impacts, and safety protection by the construction agency Posting construction notices with the assistance of village committees for comments for not less than two weeks	Internal budgets of construction agency
	Successful house connection	Publicity, education, coordination, guidance, quality supervision	PMOs Construction agency Village supervision committees Local residents	Construction agency, Village committees, Village supervision committees, local residents	Guiding villagers to get connected voluntarily; Making water supply and drainage connection arrangements properly; Consulting local residents on indoor pipeline modification; Supervising connection and installation quality	10,000 yuan per township per annum
	LA	Execution of compensation agreements, payment of funds, land handover	PMOs Land and resources bureau Township governments Village committees APs	PMOs Land and resources bureau Township governments Village committees APs	Determining sites of waterworks and wastewater treatment plants; Obtaining land use formalities; Entering into compensation agreements with AHs, and granting compensation accordingly; Completing land use formalities and obtaining land	RAP budget
	Reduction of construction impacts	Improving relevant programs, and developing	PMOs Construction agency	PMOs, construction agency Transport bureau, traffic police, environmental	Allowing for the passage of local residents during road excavation; Taking dust and noise reduction measures;	5,000 yuan per township per annum; internal

		effective mitigation measures	Village supervision committees	protection bureau Village supervision committees, villager reps.	Keeping away from residential areas where possible; Identifying impacts of temporary land occupation	budgets of construction agency
	Participation in construction	Offering compensated services, and supervising house connection and installation quality	PMOs Construction agency Village supervision committees Villagers	PMOs, construction agency Village supervision committees Villager reps., local workers	Recruiting workers from local residents and training them; Supervising connection and installation quality, and giving feedback (by village supervision committees)	10,000 yuan per township per annum
	Employment of local labor (incl. women)	Local residents' participation in construction, operation and maintenance	PMOs Construction agency Village supervision committees Local residents	Construction agency, Village supervision committees Local workers (incl. women, the poor)	Not less than 35% of workers being local laborers, including women and the poor Making unskilled jobs first available to vulnerable groups (including women), and granting pays not less than the local minimum wage standard; Offering employment training to local laborers	Internal budgets of construction agency
	Management of migrant workers	Expanding safety and health publicity, regulating worker education and management	PMOs Construction agency Health bureau Village supervision committees Local residents	PMOs, construction agency Health bureau, township and community hospitals Village committees, Village supervision committees Migrant workers, residents	Conducting education on public health and AIDS prevention, and including this in construction contracts; Conducting physical checkups for construction workers; Strengthen publicity on local social and cultural customs for non-local workers to reduce potential conflicts	5,000 yuan per township per annum; internal budgets of construction agency
Operation	Participation in water supply and wastewater management	Village supervision committees' participation in habit education, and facility maintenance and management	PMOs Village committees Village supervision committees Residents	PMOs, Water supply company Village committees, Village supervision committees Local residents	Conducting inspection and reporting on water supply and wastewater management; Guiding villagers to use safe and stable tap water; Inspecting the operation of wastewater treatment facilities regularly, and giving effective feedback; Reporting identified issues timely, and establishing a supervision and punishment mechanism for improper wastewater disposal in villages	8,000 yuan per township per annum
	Labor recruitment, training and safety education	Selection of village maintenance staff, labor safety, health and skills training and education	PMOs Water supply company Village committees Village supervision committees Residents	PMOs, labor and social security bureau Water supply company Village supervision committees Locally recruit employees	Selecting village-level maintenance staff (by township governments and village supervision committees); Providing labor safety and skills training to recruited system operation and maintenance staff; Developing an annual work plan for labor and health knowledge publicity and education, and organizing training and workshops for recruited laborers	6,000 yuan per township per annum
	Improvement of public	Training and publicity on water	Water supply company	Water supply company Village committees	Holding a water conservation workshop for local residents to help them develop good water-saving habits;	10,000 yuan per township

	water conservation awareness, and payment of water charges	conservation awareness, and water charge payment	Village committees Village supervision committees Residents	Village supervision committees Local residents	Communicating the necessity of paying water charges, and establishing a water rate public hearing system, and offering multiple convenient payment modes	per annum
	Supervision of water quality, pipeline protection	Establishing a routine water quality and quantity supervision and feedback mechanism	Water supply company Village committees Village supervision committees Residents	Water supply company Village supervision committees Local residents	Establishing a routine water quality and quantity supervision and feedback mechanism, and handling feedback timely to motivate villagers; Conducting regular and irregular inspection on local water supply and sewer networks to build up the sense of ownership of local residents	6,000 yuan per township per annum

According to the specific scope of beneficiary participation at the design, construction and operation stages, the budget for public participation is 13.5 million yuan. See Table 9-3.

Table 9- 3 Public Participation Budget

No.	Stage	Amount (0,000 yuan)	Total (0,000 yuan)	Remarks
1	Design	Water supply component: 30,000 yuan per township x 47 township x 1 year = 1.41 million yuan	150	The wastewater treatment is a pilot component, and its participation costs are 3 times those of the water supply component.
		Wastewater treatment component: 90,000 yuan per township x 1 township x 1 year =90,000		
2	Construction	Water supply component: 60,000 yuan per township x 47 townships x 3 years =8.46 million	900	
		Wastewater treatment component: 180,000 yuan per township x 1 township x 3 years =540,000		
3	Operation	Water supply component: 30,000 yuan per township x 47 townships x 2 years = 2.82 million yuan	300	
		Wastewater treatment component: 90,000 yuan per township x 1 township x 2 years =180,000		
Total			1350	/

10 Grievance Redress and M&E

10.1 Grievance Redress

During the preparation and implementation of the Project, residents are a direct stakeholder and also direct participants. Since some unforeseeable issues may occur, a transparent and effective grievance redress mechanism should be established to ensure that residents participate actively and extensively. See Figure 10-1.

Local residents may file grievances and appeals with village committees, township governments, PMOs or competent authorities, which have dedicated staff or departments for handling and feedback.

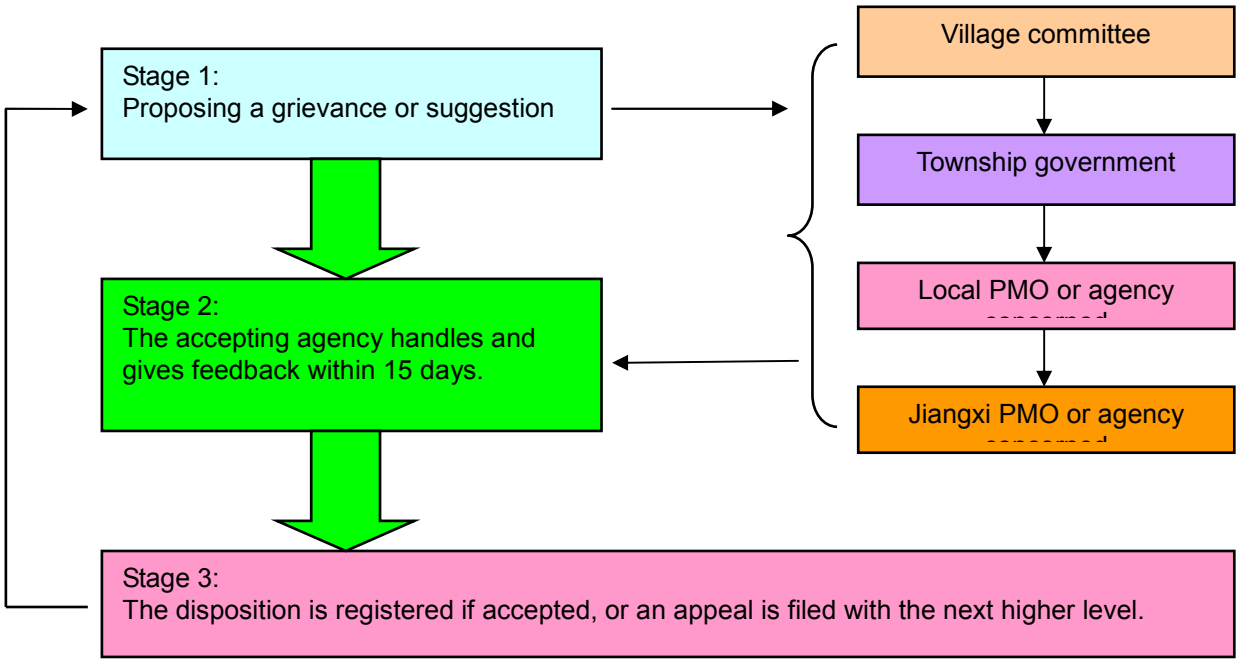


Figure 10-1 Grievance Redress Flowchart

10.2 M&E

M&E is an important way to ensure that the Project is implemented as planned, and the Social Action Plan is implemented properly. M&E is also an important error-correcting and participation mechanism for the Project. In view of this, an M&E mechanism has been established for the Project, including internal supervision and external M&E.

Internal supervision is conducted by the PMO on project implementation progress, the implementation of the Social Action Plan, progress of information disclosure and public participation, fund use, the implementation of rules and regulations, etc. An internal supervision report will be submitted semiannually.

The PMO will appoint an independent M&E agency to conduct external M&E on the implementation of the Social Action Plan. The external M&E agency will conduct regular M&E, give advice, and submit M&E reports to the Bank semiannually.

Appendix 1: Public Participation at the Project Preparation Stage

Time	Subject	Participants	Details	Remarks
Dec. 23, 2016, 14:00-17:30 pm	Zhengcun Xiang, Xiushui County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young (<30 years): 1, middle aged (30-55 years): 1, elderly (>55 years): 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Xunyi Village Committee Group 2: questionnaire survey and interviews in Xunyi Village
Dec. 26, 2016, 14:00-17:30 pm	Laixi Village, Laixi Town, Nanfeng County	3 women, 3 elderly, 1 vulnerable, 2 villager reps., 1 village head, totaling 10	1) Women's FGD: 3, incl. young: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 1 (1 physically disabled) 4) FGD with village officials and villagers' reps.: 3	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Laixi Village Committee Group 2: questionnaire survey and interviews in Laixi Village
Dec. 27, 2016, 9:30-11:00 am	Shishan Village, Shishan Town, Nanfeng County	2 women, 4 elderly, 2 vulnerable, 2 villager reps., 3 village heads, totaling 13	1) Women's FGD: 2, incl. middle-aged: 1, elderly: 1 2) Old people's FGD: 4 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Shishan Village Committee Group 2: questionnaire survey and interviews in Shishan Village
Dec. 27, 2016, 14:00-16:30 pm	Meixi Village, Shishan Town, Nanfeng County	3 women, 3 elderly, 1 vulnerable, 2 villager reps., 1 village head, totaling 10	1) Women's FGD: 3, incl. young: 1, middle-aged: 1, elderly: 1 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 1 (poor) 4) FGD with village officials and villagers' reps.: 3	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Meixi Village Committee Group 2: questionnaire survey and interviews in Meixi Village
Dec. 28, 2016, 9:00-11:30 am	Wenzhu Village, Wenzhu Town, Yongxin County	2 women, 2 elderly, 2 vulnerable, 2 villager reps., 1 village head, totaling 9	1) Women's FGD: 2, incl. young: 1, elderly: 1 2) Old people's FGD: 2 3) Vulnerable groups' FGD: 2 (2 physically disabled) 4) FGD with village officials and villagers' reps.: 3	The task force (4 persons) worked successively: Group 1: holding FGS at the Wenzhu Village Committee Second: questionnaire survey and interviews in Wenzhu Village
Dec. 28, 2016, 9:00-11:30 am	Shitian Street, Wenzhu Town, Yongxin County	2 women, 2 elderly, 2 vulnerable, 2 villager reps., 1 village head, totaling 9	1) Women's FGD: 2, incl. young: 1, elderly: 1 2) Old people's FGD: 2 3) Vulnerable groups' FGD: 2 (2 physically disabled) 4) FGD with village officials and villagers' reps.: 3	The task force (4 persons) worked successively: Group 1: holding FGS at Shitianjie Group Second: questionnaire survey and interviews in Shitianjie Group
Dec. 29, 2016, 16:30-17:30 pm	Luoxi Village, Shashi Town, Yongxin County	2 women, 4 elderly, 2 vulnerable, 2 villager reps., 1 village head, totaling 11	1) Women's FGD: 2, incl. young: 2 2) Old people's FGD: 4 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 3	The task force (4 persons) worked successively: Group 1: holding FGS at the Luoxi Village Committee Second: questionnaire survey and interviews in Luoxi Village

Dec. 30, 2016, 16:30-17:30 pm	Longnan Village, Shashi Town, Yongxin County	4 women, 3 elderly, 1 vulnerable, 3 villager reps., 1 village head, totaling 12	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 1 (1 poor) 4) FGD with village officials and villagers' reps.: 4	The task force (4 persons) worked successively: Group 1: holding FGS at the Longnan Village Committee Second: questionnaire survey and interviews in Longnan Village
Morning of Mar. 5, 2017	Zhajin Town, Xiushui County	3 women, 3 elderly, 3 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 3, incl. young: 1, middle-aged: 1, elderly: 1 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 3 (1 physically disabled; 2 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Putian Village Committee Group 2: questionnaire survey and interviews in Putian Village
Morning of Mar. 5, 2017	Ma'ao Town, Xiushui County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Qingbanqiao Village Committee Group 2: questionnaire survey and interviews in Qingbanqiao Village
Afternoon of Mar. 5, 2017	Shankou Town, Xiushui County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Yangkeng Village Committee Group 2: questionnaire survey and interviews in Yangkeng Village
Afternoon of Mar. 5, 2017	Gangkou Town, Xiushui County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Aoshang Village Committee Group 2: questionnaire survey and interviews in Aoshang Village
Morning of Mar. 6, 2017	Daqiao Town, Xiushui County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Daqiao Village Committee Group 2: questionnaire survey and interviews in Daqiao Village
Morning of Mar. 6, 2017	Xigang Town, Xiushui County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads,	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Zhoujiazhuang Village Committee Group 2: questionnaire survey and interviews in

		totaling 14	disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	Zhoujiazhuang Village
Morning of Mar. 7, 2017	Qiawan Town, Nanfeng County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Shangdian Village Committee Group 2: questionnaire survey and interviews in Shangdian Village
Morning of Mar. 7, 2017	County town of Nanfeng County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Xicun Village Committee Group 2: questionnaire survey and interviews in Xicun Village
Afternoon of Mar. 7, 2017	Xiangxing Xiang, Yongxin County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Xiangxing Village Committee Group 2: questionnaire survey and interviews in Xiangxing Village
Afternoon of Mar. 7, 2017	Zaizhong Xiang, Yongxin County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Zhongzhou Village Committee Group 2: questionnaire survey and interviews in Zhongzhou Village
Morning of Mar. 8, 2017	Gaoxi Xiang, Yongxin County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Gaoxi Village Committee Group 2: questionnaire survey and interviews in Gaoxi Village
Morning of Mar. 8, 2017	Longyuankou Town, Yongxin County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Hengxi Village Committee Group 2: questionnaire survey and interviews in Hengxi Village
Afternoon of	Luxi Xiang,	4 women, 3 elderly,	1) Women's FGD: 4, incl. young: 1, middle-aged: 1,	The task force (8 persons) worked in two groups:

Mar. 8, 2017	Yongxin County	2 vulnerable, 3 villager reps., 2 village heads, totaling 14	elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	Group 1: holding FGS at the Luxi Village Committee Group 2: questionnaire survey and interviews in Luxi Village
Afternoon of Mar. 8, 2017	Longtian Xiang, Yongxin County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Longtian Village Committee Group 2: questionnaire survey and interviews in Longtian Village
Morning of Mar. 9, 2017	County town of Yongxin County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Long'an Village Committee Group 2: questionnaire survey and interviews in Long'an Village
Morning of Mar. 10, 2017	County town of Linchuan District	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Lyufang Village Committee Group 2: questionnaire survey and interviews in Lyufang Village
Morning of Mar. 12, 2017	County town of Jinxi County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Guanbian Village Committee Group 2: questionnaire survey and interviews in Guanbian Village
Morning of Mar. 12, 2017	Huangtong Xiang, Jinxi County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Hewan Village Committee Group 2: questionnaire survey and interviews in Hewan Village
Afternoon of Mar. 12, 2017	Chenfangji Xiang, Jinxi County	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads,	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Chenfangji Village Committee Group 2: questionnaire survey and interviews in

		totaling 14	disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	Chenfangji Village
Morning of Mar. 13, 2017	County town of Dongxiang District	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Zhangfang Village Committee Group 2: questionnaire survey and interviews in Zhangfang Village
Morning of Mar. 13, 2017	Xiaohuang Town, Dongxiang District	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Yanghu Village Committee Group 2: questionnaire survey and interviews in Yanghu Village
Afternoon of Mar. 13, 2017	Bogan Xiang, Dongxiang District	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Beizhuang Village Committee Group 2: questionnaire survey and interviews in Beizhuang Village
Afternoon of Mar. 13, 2017	Dengjia Xiang, Dongxiang District	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Shangyang Village Committee Group 2: questionnaire survey and interviews in Shangyang Village
Morning of Mar. 14, 2017	Weishangqiao Town, Dongxiang District	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Houxi Village Committee Group 2: questionnaire survey and interviews in Houxi Village
Morning of Mar. 14, 2017	Xiaogang Town, Dongxiang District	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Yaoshang Village Committee Group 2: questionnaire survey and interviews in Yaoshang Village
Afternoon of	Gangshangji	4 women, 3 elderly,	1) Women's FGD: 4, incl. young: 1, middle-aged: 1,	The task force (8 persons) worked in two groups:

Mar. 14, 2017	Town, Dongxiang District	2 vulnerable, 3 villager reps., 2 village heads, totaling 14	elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	Group 1: holding FGS at the Dongyuan Village Committee Group 2: questionnaire survey and interviews in Dongyuan Village
Mar. 16, 2017	County town of Leping City	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Miaoxiangxia Community Committee Group 2: questionnaire survey and interviews in Miaoxiangxia Community
Mar. 17, 2017	Hongyan Town, Leping City	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at Xiaokeng Forest Farm Group 2: questionnaire survey and interviews in Xiaokeng Forest Farm
Mar. 20, 2017	Luci Xiang, Leping City	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Longkou Village Committee Group 2: questionnaire survey and interviews in Longkou Village
Mar. 21, 2017	Zhenqiao Town, Leping City	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Kuqian Village Committee Group 2: questionnaire survey and interviews in Kuqian Village
Mar. 22, 2017	Wukou Town, Leping City	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Dayuan Village Committee Group 2: questionnaire survey and interviews in Dayuan Village
Mar. 23, 2017	Yongshan Town, Leping City	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads,	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Donggang Village Committee Group 2: questionnaire survey and interviews in

		totaling 14	disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	Donggang Village
Mar. 24, 2017	Lingang Town, Leping City	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Zhongbao Village Committee Group 2: questionnaire survey and interviews in Zhongbao Village
Mar. 27, 2017	Zhongbu Town, Leping City	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Shiping Village Committee Group 2: questionnaire survey and interviews in Shiping Village
Mar. 28, 2017	Shiligang Town, Leping City	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Nangang Village Committee Group 2: questionnaire survey and interviews in Nangang Village
Mar. 29, 2017	Lilin Town, Leping City	4 women, 3 elderly, 2 vulnerable, 3 villager reps., 2 village heads, totaling 14	1) Women's FGD: 4, incl. young: 1, middle-aged: 1, elderly: 2 2) Old people's FGD: 3 3) Vulnerable groups' FGD: 2 (1 physically disabled; 1 poor) 4) FGD with village officials and villagers' reps.: 5	The task force (8 persons) worked in two groups: Group 1: holding FGS at the Puli Village Committee Group 2: questionnaire survey and interviews in Puli Village

Appendix 2: Summary of FGDs with Government Agencies and Entities

Time	Agencies	Participants	Details
Morning of Dec. 22, 2016	Agencies concerned of Xiushui County	Heads of agencies concerned	Heads of the county land and resources bureau, PMO, house administration bureau, LA management office, and labor and social security bureau
Afternoon of Dec. 22, 2016	Zhengcun Xiang Government, Xiushui County	Staff of the Xiang government	3 persons, including deputy Xiang head Shen Qizhao
Morning of Dec. 23, 2016	Agencies concerned of Xiushui County	Heads of agencies concerned	3 officials of statistics bureau, 4 officials of civil affairs bureau, 3 officials of poverty reduction office, 2 officials of women's federation
Afternoon of Dec. 23, 2016	Runquan Water Supply Co., Ltd.	Senior management members	5 persons, including leader in charge Guan Hao, Customer Manager Kuang, and installation branch manager Huang
Morning of Dec. 26, 2016	Agencies concerned of Nanfeng County	Heads of agencies concerned	Heads of the county land and resources bureau, PMO, house administration bureau, LA management office, and poverty reduction office
Morning of Dec. 27, 2016	Agencies concerned of Nanfeng County	Officials of women's federation, statistics bureau, civil affairs bureau and labor and social security bureau	2 officials of women's federation, 2 officials of statistics bureau, 3 officials of civil affairs bureau, 3 officials of labor and social security bureau
Morning of Dec. 28, 2016	Shishan Town and Laixi Xiang Governments, Nanfeng County	Government officials	3 officials of the Shishan Town Government 4 officials of the Laixi Xiang Government
Morning of Dec. 29, 2016	Agencies concerned of Yongxin County	Heads of agencies concerned	2 officials of county land and resources bureau, 3 officials of statistics bureau, 2 officials of labor and social security bureau, 2 officials of poverty reduction office, 2 officials of PMO
Morning of Dec. 30, 2016	Agencies concerned of Yongxin County	Heads and staff of agencies concerned	1 official of women's federation, 2 officials of environmental protection bureau, 3 officials of civil affairs bureau
Mar. 10, 2017	Agencies concerned of Linchuan District	Officials of women's federation, statistics bureau, civil affairs bureau and labor and social security bureau	2 officials of women's federation, 2 officials of statistics bureau, 3 officials of civil affairs bureau, 3 officials of labor and social security bureau
Mar. 12, 2017	Agencies concerned of Jinxi County	Officials of women's federation, statistics bureau, civil affairs bureau and labor and social security bureau	2 officials of women's federation, 2 officials of statistics bureau, 3 officials of civil affairs bureau, 3 officials of labor and social security bureau
Mar. 13-14, 2017	Agencies concerned of Dongxiang District	Officials of women's federation, statistics bureau, civil affairs bureau and labor and social security bureau	2 officials of women's federation, 2 officials of statistics bureau, 3 officials of civil affairs bureau, 3 officials of labor and social security bureau
Mar. 16-29, 2017	Agencies concerned of Leping City	Officials of women's federation, statistics bureau, civil affairs bureau and labor and social security bureau	2 officials of women's federation, 2 officials of statistics bureau, 3 officials of civil affairs bureau, 3 officials of labor and social security bureau

Appendix 3: Summary of Interviewees

Chapter	Interviewee
3	Interview 3-1: Mr. Rao, Donggang Village, Weishangqiao Town, Dongxiang District (42 years)
	Interview 3-2: Mr. Xie, Yangkeng Village, Shankou Town, Xiushui County (42 years)
4	Interview 4-1: Mr. Li, Xunyi Village, Zhengcun Xiang, Xiushui County (50 years)
	Interview 4-2: Ms Liang, Xunyi Village, Zhengcun Xiang, Xiushui County (53 years)
	Interview 4-3: Ms Wang, Shishan Village, Shishan Town, Nanfeng County (46 years)
	Interview 4-4: Ms Hong, Zhoushang Village, Lilin Town, Leping City (40 years)
	Interview 4-5: villager, Shangzhang Group of Chenfang Village, Chenfangji Xiang, Jinxi County
	Interview 4-6: Mr. Han, Shishan Village, Shashi Town, Yongxin County (37 years)
	Interview 4-7: Ms Zou, Zhoushang Village, Lilin Town, Leping City (48 years)
	Interview 4-8: Ms Wang, Xialonggang Group of Zhangfang Village, Xiaogang Town, Dongxiang District (33 years)
	Interview 4-9: Ms Fan, Yangqiao Village, Lilin Town, Leping City (43 years)
	Interview 4-10: Ms Xu, Zhoushang Village, Lilin Town, Leping City (38 years)
	Interview 4-11: Mr. Chen, Laixi Village, Laixi Town, Nanfeng County (35 years)
	Interview 4-12: Ms Zhao, Shishan Village, Shishan Town, Nanfeng County (38 years)
	Interview 4-13: Mr. Li, Luoxi Village, Shashi Town, Yongxin County (49 years)
	Interview 4-14: Mr. Li, Yongxin County (50 years)
	Interview 4-15: villager, market town of Chenfangji Xiang, Jinxi County
	Interview 4-16: Xu XX, Lyufang Village, Shangdundu Town, Linchuan District (68 years)
	Interview 4-17: Mr. Zheng, Meixi Village, Shishan Town, Nanfeng County (60 years)
	Interview 4-18: Ms He, Zhoushang Village, Lilin Town, Leping City (44 years)
	Interview 4-19: villager, Shangzhang Group of Chenfang Village, Chenfangji Xiang, Jinxi County
	Interview 4-20: Mr. Chen, Laixi Village, Laixi Town, Nanfeng County (55 years)
	Interview 4-21: Mr. Zou, Zhoushang Village, Lilin Town, Leping City (39 years)
	Interview 4-22: Head of the Lilin Waterworks, Lilin Town, Leping City
	Interview 4-23: Mr. Zhou, Zhajin Village, Zhajin Town, Xiushui County (54 years)
	Interview 4-24: Ms Li, Tianxi Village, Zhajin Town, Xiushui County (47 years)
	Interview 4-25: Ms Zhang, self-employer, Zhajin Town, Xiushui County (36 years)
	Interview 4-26: Mr. Chen, Daqiao Village, Daqiao Town, Xiushui County (43 years)
	Interview 4-27: Head of Xiyan Village, Zhajin Town, Xiushui County
5	Interview 5-1: Ms Deng, market town, Dengjia Xiang, Dongxiang District (54 years)
	Interview 5-2: Mr. Chen, Hengxi Village, Longyuankou Town, Yongxin County (52 years)
	Interview 5-3: Mr. Wu, Zhoushang Village, Lilin Town, Leping City (51 years)
	Interview 5-4: villager, market town of Chenfangji Xiang, Jinxi County
	Interview 5-5: villager, Shangzhang Group of Chenfang Village, Chenfangji Xiang, Jinxi County
6	Interview 6-1: Li XX, Donggang Village, Weishangqiao Town, Dongxiang District
	Interview 6-2: Cheng XX, MLS household, Zhoushang Village, Lilin Town, Leping City
7	Interview 7-1: Xu XX, Group 2 of Lyufang Village, Shangdundu Town, Linchuan District (65+ years)
	Interview 7-2: Chen XX, Yingbin Garden, Jinxi County (18-28 years)
	Interview 7-3: Mr. Ye, Yejia Group of Longnan Village, Shashi Town, Yongxin County
	Interview 7-4: Ms Liu, Zhangfang Village, Xiaogang Town, Dongxiang District
	Interview 7-5: Liang XX, Zhoujiazhuang Village, Xigang Town, Xiushui County
	Interview 7-6: Huang XX, Aoshang Village, Gangkou Town, Xiushui County
	Interview 7-7: Chen XX, Daqiao Village, Daqiao Town, Xiushui County
8	Interview 8-1: Wei XX, Nongminjie Village, Dengjia Xiang, Dongxiang District
	Interview 8-2: women's FGD in Meixi Village, Shishan Town, Nanfeng County
	Interview 8-3: women's head of Laixi Village, Laixi Town, Nanfeng County
	Interview 8-4: Head of Luoxi Village, Shashi Town, Yongxin County

Appendix 4: SA Questionnaire for Households

Hello!

I'm a researcher from NRCR. I'm appointed by the Jiangxi PMO to conduct social assessment on the Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project, which aims to improve urban and rural water supply, and rural wastewater treatment in seven counties (regions).

You're a respondent sampled randomly by us, and your opinions and options are very important for us. Please give your valuable comments objectively. We will keep your personal information strictly confidential. Thank you!

Qr. No.: _____; date: _____; researcher: _____

Respondent: _____; Tel: _____

Address: _____ Group, _____ Village / Community, _____ Town / Xiang/ Sub-district, _____ County / County-level City / District, _____ City

Part 1 Perceptions of and comments on village development

A1 Which serious pollution problems exist in your village? (Multiple choices allowed)

1) Solid waste; 2) air; 3) wastewater; 4) noise; 5) dust; 6) other, specify

A2 How do you think of the following public services?

Service	1) Very good	2) Good	3) Neither, nor	4) Bad	5) Very bad	7) If very bad, why?
A2.1 Wastewater collection and treatment						
A2.2 Sludge disposal and utilization						
A2.3 Lake management (e.g., water quality, landscape)						
A2.4 Roads						
A2.5 Solid waste collection and transport						
A2.6 Solid waste treatment						
A2.7 Water supply						
A2.8 Public transport						
A2.9 Education						
A2.10 Health						
A2.11 Flood protection						
A2.12 Other (specify)						

A3 Which aspects of your village need improvement? First (___); second (___); third (___)

1) Road; 2) water supply; 3) power supply; 4) domestic wastewater treatment; 5) solid waste treatment; 6) river; 7) school; 8) hospital; 9) other, specify

Part 2 Rural wastewater treatment works

B1What is your family's toilet?

1) Indoor private toilet; 2) outdoor private toilet; 3) public toilet

B2 If it is a private toilet, does it have a septic tank?

1) Yes; 2) no; 3) not clear **(skip to B3 if 2 or 3)**

B2.1 Where a septic tank should be located? (Skip to B2.1.1 if 1 or 2)

1) Below the toilet; 2) below the house; 3) below the ground out of the house; 4) not clear

B2.1.1 Is it necessary to alter the indoor wastewater pipeline to drain dung water?

1) Very necessary; 2) Necessary; 3) not quite necessary; 4) Unnecessary; 5) don't care

B3 How will the septic tank be improved?

1) Unified construction by a contractor engaged by the village committee; 2) Self-construction with supplied materials; 3) Self-construction with supplied funds; 4) other, specify _____

B4 Does the septic tank in your village affects you and your family negatively?

1) Yes; 2) no; 3) don't know **(skip to B5 if 2 or 3)**

B4.1 If yes, how?

1) Dung water overflow due to the lack of cleanup; 2) strong odor; 3) giving rise to mosquitoes and flies, and spreading diseases; 4) polluting rivers; 5) polluting groundwater; 6) no impact; 7) don't know; 8) other, specify

B5 How is domestic wastewater disposed of?

1) Pouring out of the door; 2) pouring into the toilet; 3) draining into the river through ditch or pipe collection; 4) draining into the river through ditch or pipe collection and treatment; 5) don't know; 6) other, specify _____

B6 Which member of your family disposes of domestic wastewater most often?

1) Young woman; 2) young man; 3) old woman; 4) old man; 5) child

B7 Are you satisfied with the current situation of your village's wastewater treatment?

1) Very satisfied; 2) satisfied; 3) neither, nor; 4) dissatisfied; 5) very dissatisfied; 6) don't know **(skip to B8 if 1, 2 or 3)**

B7.1 Which difficulties are there in wastewater treatment? (Multiple choices allowed)

1) Lack of sound wastewater collection and treatment system; 2) low public environmental awareness; 3) lack of effective regulation; 4) inadequate publicity; 5) other, specify _____

B8 What negative impacts does the current situation of wastewater treatment have on you or your family?

1) emitting bad odor and affecting life; 2) giving rise to mosquitoes and flies, and affecting health; 3) polluting soil and waters; 4) affecting crop growth; 5) don't know; 6) other, specify _____

B9 Do you think it necessary to collect and treat domestic wastewater?

1) Very necessary; 2) Necessary; 3) not quite necessary; 4) Unnecessary; 5) not clear

B10 Are you willing to be connected to the sewer network?

1) Yes; 2) no; 3) don't know

B11 Does your family pay wastewater treatment charges?

1) Yes; 2) no; 3) don't know **(skip to B12 if 2 or 3)**

B11.1 If yes, _____ yuan/ton and _____ yuan per month

B11.2 Are they paid together with water charges?

1) Yes; 2) no; 3) don't know

B11.3 How are wastewater treatment charges paid?

1) Door-to-door collection; 2) payment at the outlet; 3) collection by the village; 4) online

B12 For improved wastewater collection and treatment services, are you willing to pay _____ yuan/month (2, 5, 10, 15, 20)?

1) Yes; 2) no **(skip to B12.2 if 2)**

B12.1 What about of wastewater treatment charges are you willing to pay?

1) 20 yuan or less; 2) 21-50 yuan; 3) 51-100 yuan; 4) over 100 yuan

B12.2 Why are you willing to pay?

1) It's reasonable; 2) It's not much; 3) I desire this service; 4) other, specify _____

B12.3 Why are you unwilling to get this service?

1) I cannot afford it; 2) It's just worth so much; 3) I don't want to pay for it; 4) It should be borne by the government; 5) other, specify _____

B13 Are you willing to pay for sewer house collection?

1) Yes; 2) no **(skip to C1 if 2)**

B13.1 If you're willing to pay, you are willing to pay up to _____ yuan.

1) Over 1,000 yuan; 2) 801-1,000 yuan; 3) 501-800 yuan; 4) 301-500 yuan; 5) 101-300 yuan; 6) 100 yuan or less

Part 3 Integrated urban and rural water supply works

C1 Your family's main domestic water source is _____.

1) Tap water; 2) well water; 3) river / lake; 4) bottled water; 5) other, specify _____

C2 Is tap water paid for?

1) Yes; 2) no; 3) don't know

C2.1 What's its rate? _____ yuan/m^3

1) 1 yuan or less; 2) 1-1.5 yuan; 3) 1.6-2 yuan; 4) above 2 yuan

C2.2 Your family pays _____ yuan per month.

1) 10 yuan or less; 2) 10-30 yuan; 3) 31 -50 yuan; 4) above 50 yuan

C3 What's your attitude to the current water rate?

1) Too high; 2) a bit high; 3) reasonable; 4) low; 5) very low; 6) not clear

C4 Are you satisfied with tap water?

1) Very satisfied; 2) satisfied; 3) neither, nor; 4) dissatisfied; 5) very dissatisfied; 6) don't know

C4.1 If not, why? (Multiple choices allowed)

1) Unstable supply; 2) bad quality; 3) not clear; 4) other, specify _____

C4.2 Do you support the Project?

1) Yes; 2) no; 3) not clear

C4.3 Are you willing to pay water charges of _____ yuan/month for routine maintenance (2, 5, 10, 15, 20)?

1) Yes (skip to C4.3.1); 2) no

C4.3.1 You're willing to pay _____ yuan/month?

1) below 2 yuan; 2) 2-5 yuan; 3) 6-10 yuan; 4) 11-15 yuan; 5) 16-20 yuan; 6) 20 yuan or more

C4.3.2 Why are you willing to pay?

1) It's reasonable; 2) It's not much; 3) I desire this service; 4) other, specify _____

C4.3.3 Why are you unwilling to get this service?

1) I cannot afford it; 2) It's just worth so much; 3) I don't want to pay for it; 4) It should be borne by the government; 5) other, specify _____

C5 Are you willing to pay for tap water house collection?

1) Yes; 2) no

C6 If you're willing to pay, you are willing to pay up to _____ yuan.

1) Over 1,000 yuan; 2) 801-1,000 yuan; 3) 501-800 yuan; 4) 301-500 yuan; 5) 101-300 yuan; 6) 100 yuan or less

Part 4 Public participation / publicity and education

D1 Have you heard of the Project?

1) Yes; 2) no (skip to D3)

D2 How did you know it?

1) TV, broadcast, newspaper, Web; 2) government notice; 3) village committee; 4) others; 5) other, specify _____

D3 Is the Project important for your family?

1) Very important; 2) important; 3) a bit important; 4) unimportant; 5) don't care

D4 Do you think local villagers will benefit directly from the Project?

1) Yes; 2) no; 3) not clear

D5 Do you support the Project?

1) Yes; 2) no; 3) don't care

D6 Which member of your family will attend meetings related to the Project?

1) Young woman; 2) young man; 3) old woman; 4) old man; 5) child; 6) whoever is free

D7 How will you reflect suggestions or comments on the Project?

1) Government; 2) sub-district office; 3) contractor; 4) Internet; 5) news media; 6) other, specify _____

D8 Are you willing to do jobs generated by the Project?

1) Yes; 2) no; 3) don't know

D9 How should wastewater treatment systems be maintained after completion?

1) Village; 2) specialized company engaged by the government; 3) other, specify _____

D10 Should local villagers participate in the routine operation and maintenance of wastewater treatment systems?

1) Yes; 2) no; 3) not clear

D11 Are you willing to do operation and maintenance jobs?

1) Yes; 2) no; 3) don't know

D12 Are you willing to change your habits after project completion?

1) Yes; 2) no; 3) don't care

D12.1 If yes, how? (Multiple choices allowed)

1) bathing often; 2) using flush toilets; 3) using less chemical detergents; 4) not throwing litter into ditches and sewers

D13 Which negative impacts will the Project have during construction?

1) Flying dust and tail gas during construction; 2) water loss and soil erosion due to construction; 3) discharge of construction and domestic wastewater; 4) noise from construction machinery and vehicles; 5) discharge of construction and domestic waste; 6) other, specify _____

D14 Which positive impacts will the Project have?

1) Improving the living environment; 2) reducing drinking water pollution; 3) reducing diseases; 4) reducing wastewater impacts on crops; 5) offering job opportunities; 6) promoting economic development; 7) other, specify _____

D15 Which negative impacts will the Project have after completion?

1) Secondary pollution from sludge; 2) increased expenses; 3) partial land loss; 4) no negative impact; 5) other, specify _____

Part 5 Basic information

E1 Your age: _____ years

E2 Your gender: _____ 1) male; 2) female

E3 Type of your registered residence: _____ 1) agricultural; 2) nonagricultural

E4 Are you the head of your household?1) Yes; 2) No

E5 Your educational level: _____

1) Illiterate; 2) primary school; 3) junior high school; 4) Senior high school / secondary technical school; 5) junior college or above

E6 Your occupation: _____

1) Civil servant; 2) worker of public institution; 3) enterprise employee; 4) self-employer; 5) freelancer; 6) laid-off worker; 7) retiree; 8) student; 9) farmer; 10) migrant worker; 11) other, specify _____

E7 Your family's average monthly income in 2016

1) 1,000 yuan or less; 2) 1,001-3,000 yuan; 3) 3,001-6,000 yuan; 4) 6,001-10,000 yuan; 5) 10,001-20,000

yuan; 6) 20,001-30,000 yuan; 7) 30,001 or above

E8 Your family's average monthly expenditure in 2016

1) 1,000 yuan or less; 2) 1,001-3,000 yuan; 3) 3,001-6,000 yuan; 4) 6,001-10,000 yuan; 5) 10,001-20,000 yuan; 6) 20,001-30,000 yuan; 7) 30,001 or above

E9 Is your family an MLS household?

1) Yes; 2) no

Appendix 5: Letter of Project Information Disclosure

With the rapid economic development and urbanization of Jiangxi Province, wastewater treatment is an increasingly serious problem, especially in rural areas, affecting the rural environment and farmers' living quality seriously. In order to accelerate the construction of rural domestic wastewater treatment facilities, and improve the rural environment and public services, the Jiangxi Provincial Government has applied for a loan with the World Bank to implement the Jiangxi Integrated Rural and Urban Water Supply and Wastewater Management Project. The gross investment in the Project is 1.945913 billion yuan; including Xiushui County 490.406 million yuan (including 35.042 million yuan for the wastewater treatment work in Zhajin Town); Yongxin County 356.242 million yuan; Nanfeng County 72.684 million yuan; Jinxi County 129.866 million yuan; Dongxiang District 308.114 million yuan; Linchuan District 207.999 million yuan and Leping City 365.949 million yuan.

The Project includes water supply works in Xiushui County, Yongxin County, Nanfeng County, Jinxi County, Dongxiang District, Linchuan District, Leping City, and a rural wastewater treatment work in Zhajin Town, Xiushui County. The Project will improve rural infrastructure greatly, and reduce urban-rural gaps in basic public services, and promote civilized and beautiful countryside building. In addition, the Project will explore new patterns of rural wastewater treatment, and provide a useful reference for other parts of Jiangxi and other provinces.

In the Project, public participation is realized through existing village organizations and activities, such as village congress and village group meeting in order to involve villagers in project information disclosure, publicity, design, land use, construction, operation and maintenance as much as possible, thereby ensuring the successful construction and proper functioning of the Project, and minimize potential impacts.