

RP896

V2

Engineering Design Certificate
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Class-1 No.300102-sj
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Annex 10
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**World Bank Loan Funded Turpan Water Conservation Project, Xinjiang**

**Resettlement Action Plan for Construction of Ertanggou Reservoir**

**Water Resources Bureau of Turpan Prefecture,  
Xinjiang Design Institute of Water Resources & Hydropower  
of  
Ministry of Water Resources (MWR) & Xinjiang Uygur Autonomous Region**

**September 2009, Urumqi**

**People's Government of Shanshan County, Xinjiang Uygur Autonomous Region**  
**Shanshan County Government Document No. (2009) 88**

**Re: Commitment Letter for Resettlement of the Ertanggou Reservoir**

World Bank Beijing Office,

As a comprehensive project with multiple benefits and functions including irrigation, water supply to the oil development district and flood control, Ertanggou reservoir is an important water conservancy project to Turpan Prefecture of Xinjiang Uygur Autonomous Region. The reservoir is planned to have a total storage of 21 million m<sup>3</sup> at its normal storage water level of 944.5 m, and a river barrage dam of 66.00 m in height. It will serve 202.6 thousand mu of irrigated area and be responsible for water supply of 11.1085 million m<sup>3</sup> annually to the oil and industrial development districts, and will protect the Lanzhou-Xinjiang Railway, oil fields, National Road No.312, oil and gas diversion lines, main line of the optical fiber cable for communication, main water diversion canal of Ertanggou River and townships at the downstream. Construction of the reservoir will involve resettlement of 97 people in 20 households in the base year of the project construction from the inundated area. According to the statistical yearbook of 2008 of Shengjin Township, the natural growth rate of population in local area is 15‰, and resettlers in the planning year of the project construction will reach 103 in 21 households. In order to properly implement resettlement of the Ertanggou reservoir, Shanshan County has established Project Leading Group and Resettlement Office. The people's Government of Shanshan County herewith commits to follow requirements stipulated in the *Regulations for Resettlement* of the People's Republic of China, the World Bank OP 4.12 "*Involuntary Resettlement*" and its annexes (effective as of January 01, 2002) and the *Resettlement Action Plan for Construction of Ertanggou Reservoir* in implementing resettlement activities for construction of the reservoir.

November 16, 2009

(with a seal of the People's Government of Shanshan County)

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**Abbreviations and Expressions**

ECIDI	East China Investigation and Design Institute
HH	Household
M&E	Monitoring and evaluation
mu	One ha = 15 mu
PRO	Project resettlement office
RAP	Resettlement Action Plan
SCBWR	Shanshan County Bureau of Water Resources
WD	workday
Xinjiang Institute	Xinjiang Survey Design & Research Institute of Water Resources and Hydropower
yuan	Chinese Dollar

## **Purpose of This RAP and Definitions of Terms Used**

This RAP is prepared in compliance with requirements in both relevant national and regional laws and regulations of the People's Republic of China and OP 4.12 "Involuntary Resettlement" of the World Bank. The purpose of this document is to work out an action plan for the resettlement to ensure that the resettled people will benefit from the project and their living standards are improved, or at least resumed after completion of the project.

During implementation of development project, acquisition of land and other properties may cause negative impacts to people working in the land area or relying on the land to make a living. "Project affected people" refers to those whose production or lives have been negatively affected by land acquisition under the project, including:

(1) Those whose land (including housing land, land for public facilities, land used for agriculture, forestry, animal husbandry, fishery production and by-line production purposes.), buildings (private houses and the auxiliary buildings, factory buildings or public buildings, etc.), equities or properties have been partially or wholly acquired or occupied, temporally or permanently.

(2) Those who use the above mentioned land, buildings or properties, or whose business, profession, job, residing area or living habit have been negatively affected.

(3) Those whose living standard has been negatively affected by land acquisition under the project.

The definition of "Project affected people" is:

"Project affected people" refers to those whose living standard is impacted or will be impacted negatively due to implementation of the project, or whose ownership, right or interest thereof any house buildings, or land (including housing land, farm land and pasture land) or other movable or immovable property is acquired temporally or permanently; or those whose business, profession, job, residing area or living habit is negatively affected.

"Project affected people" may be individuals, or legal persons of enterprises or public institutions. Definition of the "Project affected people" does not have restrictions by the status of legal registration, or by permission for living or business operation within the land area, or limit on compensation to properties, i.e. the "Project affected people" include:

(1) All affected people regardless of their legal right or equity status or their presence when their property is being acquired.

(2) People without permission for residing in a specific area.

Therefore, all those as mentioned above shall be regarded as "Project affected people" and shall be recorded.

If the acquired land or property is used by more than one person or one household, the compensation shall be made and recovery shall be conducted to all those people based on their losses and impacts on their rights or living standard. The definition of the “Project affected people” directly relates to the negative impacts on the people regardless of their legal rights or interests.

All people who are affected by the project should be compensated in order to improve or at least restore their living standard, and their losses of properties should be compensated. Loss of property should be compensated at replacement price, no depreciation or discount based on other reasons is allowed in making the compensation. All people affected by the project should be enabled to exercise their rights to get compensation to the impacts on them. Meanwhile, subsidies should be provided to them in addition to the compensations to their losses of properties, so that their living standard can be recovered. Those who are affected by the project but have no legal rights to the properties, entities or residing area, or permission of business operation, land reclamation or building, should be regarded equally to those who have legal property rights, equities or official permission as entitled to obtain compensations to recover their living standard.

Definition of “Resettlement”:

“Resettlement” refers to arrangement made for production and living of the project affected people to enable them to benefit from the project, including mainly:

- (1) Moving them out off their original living spaces;
- (2) Finding new employment positions for the project affected people;
- (3) Recovering (or compensating) the affected land, working spaces, trees and basic infrastructures;
- (4) Resuming living standard of project affected people whose living standard (life quality) is negatively impacted by land acquisition (or pollution of toxic gas, etc);
- (5) Recovering or compensating individuals, enterprises or public institutions that are affected by the project;
- (6) Recovering negative impacts on culture or public properties.

Definition of “Recovery”:

“Recovery” refer to resuming the production and living capabilities of the project affected people to enable them to continue their production and living activities, or improving, or at least maintaining their level of living standard before the project.

This RAP has the purpose of providing a recovery plan for the project affected people, ensuring that their losses get compensated and their living standard get improved or at least maintain the current level. To achieve this, the RAP puts forward recovery measures to recover the incomes of the project affected people, so that they can maintain their living. Similarly, the affected business or production resources (including shops, enterprises), public properties, basic infrastructures and cultural properties will also be improved, or at least resume to the level before project.

## 1. Briefing

### 1.1 Construction Briefing

Ertanggou reservoir is located in the middle of Ertanggou River in the Turpan and Shanshan county of Xinjiang Uygur Autonomous Region with 89° 53' east longitude and 43°18' north latitude. The dam is 65 km away from Shanshan County, 120 km away from Turpan city and 308 km away from Urumqi. It's 25 km away from the Lanxing railway which in the lower reaches of the river. There is a 40 km of simply constructed road connected to national road 312 at an exit 13 km away from the lower reaches of the river dam. The communications is convenient.

Ertanggou reservoir is an integrated engineering work with the function of irrigation, water supply and flood prevention. The normal water height is 1474 meters with a capacity of 21 million m<sup>3</sup>. The height of the dam is 66 meters and the irrigating area is 202,600 mu. The reservoir supplies 11.11 m<sup>3</sup> of water to oil field and industrial development zones. It also protects Lanxing railway, oil field, national road 312, oil and gas pipes, communication cables, the main channels of Ertanggou River and the townships in the lower reaches of the Ertanggou River. Based on clause 2.1.1 and 2.2.3 of the "Classification and flood standards of water conservancy construction projects", this construction is classified as 3<sup>rd</sup> grade, medium sized. Water conservancy construction is classified as: The part of the building, the dam is grade 3, diversion and flood discharge tunnel□irrigation release tunnel are grade 3, the spillway is grade 3 and secondary construction is grade 4 and temporary construction is grade 5.

Ertanggou reservoir, without large reservoir site, will be located in mountainous areas; nice topography on both sides of the bank, no valleys around and no permanent leakage tracks found. Based on the topography data, reservoir banks are stable without land sliding, banks collapsing or inundation. The number of households around the Ertanggou reservoir area is 20 with 97 people and limited amount of arable land, pasture land, forestry, trees and ancient tombs. No mines or physical index found and the characteristic of the Ertanggou reservoir is as bellows:

Table 1-1. The major index at the normal water storage meter

Items	Unit	Index
Water level of normal water storage	m	1474.0
Normal storage	10,000m <sup>3</sup>	2100
Dead water level	m	1439.0
Regulating storage	10,000m <sup>3</sup>	1900
Flood control water meter	m	1474
Flood control capacity	10,000m <sup>3</sup>	85
Check flood level	m	1477.93
Total storage	10,000m <sup>3</sup>	2500
Total investment	10,000 Yuan	

## 1.2 Project impact and areas

### A□ Project Impact

The impact of Ertanggou reservoir includes rural part and special sites part. The rural part impact covers Ertanggou production brigade in Chalekan Village of Liangmuxing Township in Turpan. The total land area requisitioned or rented is 3289.8 mu, of which, 2459.85 mu shall be requisitioned by constructions permanently, the area which will be rented for temporary purpose is 829.95 mu. The area of houses which will be resettled is 4774.36 m<sup>2</sup>, of which, 4595.86 m<sup>2</sup> private houses and 178.5m<sup>2</sup> collective houses. The number of households which will be affected is 20 with 97 people, the number of people may increase to 103 once the project enters into the planning stage, the actual or direct resettlement affected by the land requisition is 16 households with 77 people. Based on the current Land Law, the number of herders need to be resettled is 97 and it may reach 103 during the project planning stage. The major areas inundated in Ertanggou reservoir is shown in Table 1-2.

Table 1-2. Physical Inundation Indexes of Ertanggou Reservoir

Serial Number	Terms	unit	Quantity	Remarks
1	Arable land	mu	14.11	
2	orchard	mu	21.37	
3	Man-make pasture	mu	35.05	
4	Natural pasture	mu	700	
5	Forestry land	mu	167.86	
6	Houses	m <sup>2</sup>	4774.36	

Table 1-3 The Special Sites Inundated

Serial Number	Terms	Unit	Quantity	Remarks
1	Hydrological Stations	set	1	Specially designed For prefecture
2	Historical relics			
2.1	Ancient tombs	Site	20	
2.2	Petroglyphs	set	1	
2.3	Ancient Houses	site	1	

### B. Project area

Ertanggou reservoir is the priority water conservancy project in economy development in Shanshan County. The reservoir will satisfy the needs of irrigation in Liangmuxing, Lukexin, Tugugou, Dikan and Dalankan townships; upgrade the flood control criteria and provide reliable water supply to agriculture development in the county once it is completed.

Ertanggou reservoir will inundate part of the land and housing areas in Ertanggou production brigade in Chalekan village of Liangmuxing townships in Turpan. The townships benefit from the project are Liangmuxing, Lukexin, Tugugou, Dikan and Dalankan township, which are located at the lower reaches of Ertanggou river. There are 6 natural villages in



Liangmuxing township, 8 natural villages in Lukexin township, 10 natural villages in Tugugou township, 2 natural villages in Dikan township and 6 natural villages in Dalankan township which will benefit from the reservoir.

The implementation of the project will improve the environment; uplift the flood-prevention criteria; improve the development of economy; promote the investment and provide conditions for sustainable development in the county.

### **1.3 Project design and review**

The Design Institute of Water Resources & Hydropower of Xinjiang Uygur Autonomous Region prepared “Planning Report of the Three Rivers in Shanshan County” in 1993 and then working together with The Design Institute of Water Resources & Hydropower of Turpan Prefecture, prepared “Project proposal for Ertanggou reservoir”, the proposal was reviewed by the Department of Water Conservancy. The above two design institutes co-prepared “Feasibility Study Report of Ertanggou Reservoir” and the report was reviewed by the Department of Water Conservancy of Xinjiang Uygur Autonomous Region on the 6<sup>th</sup>, Dec, 2008.

### **1.4 Measures to mitigate the negative impact of the project**

#### **1.4.1 Project planning and design stage**

The project design institute and the project owner have adopted effective measures to mitigate the negative impact to the local social-economy during the project planning and designing stage:

- a. More emphasis shall be put on the negative impact the project might cause to local social-economy during program optimization and alternative comparison in the project design period and this should be taken into consideration as a key factor.
- b. The dam site and the dam area should be selected in the less populated area that is steep and narrow so as to avoid arable land and housing acquisition. Select proper dam height and water storage level to minimize the negative project impact.
- c. Both permanent and temperate constructions shall be built in waste land areas to minimize arable land and housing acquisition based on considerations of project economic return.
- d. Optimize construction design to shorten construction period and arrange proper working hours on the site to minimize the negative impact.

#### **1.4.2 Stages of Construction**

##### **A Strengthen Public Consultation**

Prior to project construction, the starting time of the construction and its progress plan; compensation policies of land acquisition and resettlement shall be disclosed clearly in the form of posters in project impacted areas and resettlement areas so as to be supervised by residents from the resettlement areas. During construction period, local materials and transportation are the first consideration and local labors have the priority to be employed so as to benefit the people affected by project construction works.

## (2) Mitigations to reduce the dusts

In order to make the construction site to be clean and neat, measures should be taken to minimize the negative construction impact, such as to sprinkle water on the surface of the construction road or at the main entrance to the residential areas so as to reduce the dusts when the weather is fine for consecutive days and dusts flying in the sky. The constructors should optimize transportation routines; trucks are not allowed to over-load so sand and soil will not be dropped on the roads during transportation.

## (3) Strengthen management on public security and communicable diseases

Large number of people will be absorbed to work on the construction site, so the project contractor shall take the following effective ways to strengthen on the management of public security and communicable diseases:

A: prior to the construction, the contractor should organize publicity on public health, such as the spreading communicable diseases and prevention measures. Posters or publicity pictures should be put on the walls where it is easy to see, for example in the areas where workers stay, to strengthen the publicity.

B: Requesting the local public security station staff to tour the construction site regularly and construction workers should have medical check-up in the local disease prevention centers.

C: The contractors should follow the regulations of the local disease prevention center. Construction site should be clean and neat; garbage should be dealt with to prevent communicable diseases

### **1.4.3 The project resettlement action plan and implementation period**

The following measures should be taken to minimize the impact when resettlement can not be avoided:

A: Preparing resettlement plan based on local data collection, detailed analysis on social-economy status and development in the future so as to minimize the impact to the affected people's living standard.

B: Strengthening the internal and external monitoring, setting up high efficiency information feedback system and shortening the information circling period so as to ensure that all construction problems are to be solved in time.

C: The constructors are required to construct during the period when the farm production is not in peak period so as to minimize the impact.

### **1.5 The preparation of RAP**

A□ Project impact survey

The project owner, the prefecture Water Resources Bureau, conducted a nine-day survey from 18 Sept to 26 Sept, 2008 under the leadership of Turpan city government. The Xinjiang

Design Institute of Water Resources and Hydropower provided technical provided guidance to the survey which covers all physical inundation index. The surveyors include line bureaus in the city and the local government at all levels, village committees and resettlers. Based on the project impact, the survey comprised of the following parts: land acquisition, housing resettlement, tree removing, special sites relocation and resettlers. The conclusion of the survey has been confirmed by line bureaus and resettlers.

#### B□ Social-Economic Survey

The project constructor, the prefecture Water Resources Bureau, organized line bureaus to conduct a detailed social-economic survey in the proposed project areas, villages groups, villages and townships in the resettlement area and the survey was conducted by combination of using the existing data and random surveys. Based on the data from the survey, an analysis of social-economic and the actual living and production status were produced.

#### C□ Resettlement Working Plan

Another survey on land resources in each village groups around the reservoir was conducted in order to confirm the resettlement capacity. The survey was conducted after the physical inundation survey. Based on the rural development plan of the city, the survey focuses on the capacity of receiving resettlers in the secondary and tertiary-industry and willingness of the resettlers. The survey also confirmed the methods and plan for resettlement. The prefecture government, project owner and the resettlement consulting institution organized an investigation on land resources, future development plan, economy development, income status of the residence and ethnic minority in the proposed resettled area. The resettlers also toured the area, too. The proposed resettled area has been confirmed by fully consulting the resettlement consulting institution. The inundated special sites relocation plan, which will be prepared by the organization responsible special sites, shall be included in the resettlement plan.

### 1.6 The Basis and objectives of RAP

#### A. Policy Basis

□1□ Law of the People's Republic of China on Land Administration (revised on Aug. 28, 2004)

□2□ Regulations for Land Acquisition Compensation and Resettlement for Construction of Big and Medium Size Water Resources and Hydropower Projects (State Council Order No. 471)

□3□ Tentative Regulations for Collection of Arable Land Occupancy Tax of the People's Republic of China (effective as of Jan. 01, 2008)

□4□ Method to Implement the Law of the Republic of China on Land Management in Xinjiang Uygur Autonomous Region (effective as of October 01, 1999)

- 5□Implementation Method for Collection of Arable Land Occupancy Tax in Xinjiang Uygur Autonomous Region (effective as of September 09, 2008)
- 6□Circular by Xinjiang DRC (Development and Reform Commission) and Finance Bureau) on Distribution of the Standard for Administrative Charging for Land Management by Xinjiang Land Resources Management System (Xinjiang DRC Document 2001 No. 500)
- 7□Norms for Design of Land Acquisition and Resettlement for Construction of Water Resources and Hydropower Projects (SL290-2003)
- 8□World Bank OP 4.12 “ Non-voluntary Resettlement” and its annexes (effective in January 01, 2002).

## B. Objectives

- 1□Try to avoid or minimize physical land acquisition or resettlement by engineering, technical and economy measures. Try to minimize negative impact to local residence when physical land acquisition or resettlement is inevitable.
- 2□To prepare the resettlement plan and conduct social-economic survey during preparing period.
- 3□Resettlement is based on physical objects and compensation criteria so as to lift or at least keep the original living standard of the resettlers.
- 4□Development resettlement methodology is inspired. Rural resettlement based on land area and other job opportunities in the secondary and tertiary-industry should be considered.
- 5□Inspiring resettlers and original residence to participate in resettlement planning.
- 6□Resettlers shall be resettled in the original community.
- 7□Both the resettlers and the original residence shall benefit from the project.

## 2 Briefing of Social-Economic in the Proposed Project Area

### 2.1 Natural Geographical Characteristics of the proposed project area

#### 2.1.1 Natural Geographical Characteristics of Turpan

Turpan is located in the east of Xinjiang Uygur Autonomous Region, right in the middle of Turpan Basin. The accurate location is between 88°51' to 89 ° 54' east longitudes and 42°20' to 43°35' north latitude, in the east of Turpan is Donglinshanshan county, west is Tokexun county, south is Juetake mountain and Bazhou, north is Bogeda, Jimushaer and Qitai county. There are 25 nations in Xinjiang Uygur Autonomous Region.

The weather in Turpan belongs to continental warm climate with dry-desert. The characteristics are as follows: Temperature is high in spring with gentle breeze; it's cool in summer compare to dry and hot Turpan plain. Its' nickname is "Wet Island". The temperature falls quickly in fall, sunny days and winter is cold and short, less wind and snow. The annual mean temperature in summer is 30 degrees centigrade; the maximum could be as high as 49.6 degrees centigrade. The annual mean temperature in winter is 0 degrees centigrade; the minimum could be as low as -29.6 degrees centigrade. The annual mean temperature is 14 degrees centigrade. The annual sunshine hours is as long as 3,100. The frost free days are 224. The average annual rainfall is 16.6 mm; the annual evaporation varies from 2,879 mm to 3,821 mm. All the year round, the wind direction is in north-west in April, May and June, there are over 31 times of strong wind which is over eight Beaufort Scale.

The water system in the whole city includes: Tianshan water system, flaming Mountain water system, the flame mountain water system and tube wells, the total runoff is 45 billion m<sup>3</sup> which could irrigate 430,000 mu of land area, of which, Tianshan water system includes the following snow and rainfall: Meiyaogou, Taerlangou, Longxugou and Dahango. These are all seasonal rivers and the run-off is unstable. The annual run-off is about 13 billion m<sup>3</sup>; the flame mountain water system includes the following spring water system: Putaogou, Taoergou, Mutoygou, Dacaoahu and Kankan. The annual run-off is about 13.2 billion m<sup>3</sup>; Karez water system is mainly groundwater, which is the main source for agriculture production. The water level has been falling in recent years.

The mine resources in Turpan is rich, such as, salt, coal, oil, lime stone, plaster, quarts sand, iron, manganese and mirabilis. The wildlife in Turpan includes: snow leopard, fox, wild boar, wolf, snake and snow cock. There are over 108 varieties of Chinese medicine in Turpan, the major ones are: Goat bush, liquorices, mulberry and grape.

#### 2.1.2 Natural Geographical Characteristics of Inundation Areas

Ertanggou reservoir, without large reservoir site, will be located in mountainous areas; the width of the river where dam site located is 70 meters. The surface ratio declined to 23%. The major source of communications is 312 national road and simply-built sand road.

The climate within the reservoir area varies quite a lot. The annual mean temperature varies from 7-9 degrees centigrade and the maximum high is 36 degrees centigrade and the minimum low is -23.7 degrees centigrade around hydrologic station in Ertanggou. The

average annual rainfall is 131.8 mm and the average annual rainfall varies from 300 to 500 mm in high mountainous areas without much evaporation compare to that on the plain. The temperature in fall drops quickly, winter is dry and short, less wind and snow, less annual rainfall with short cold period.

Potatoes, maize, wheat, alfalfa, soybean, grape, walnut and fruit trees could be planted with one crop production model in the dam areas, the yield is low and the arable land utilization rate is low, too. The major industry in the proposed reservoir area is animal husbandry, which includes cattle, goats and horses raising.

### **2.1.3 The Geology Status of the Inundation Area**

The dam site is located in valley areas and the bedrock mountains on both banks are steep and huge based on the geological survey. The area is dry with low rainfall and fracture water is limited. The stone head in dam site does not have strong water baring structure. Based on water pressure testing, the strong and part of the weak regolith in stone head have water baring capacity. The permeability of water is limited in fresh stone layers.

The gravel layers on the riverbed of the reservoir is water baring and permeable. The main groundwater bearing layers are confined and are highly porous. The cover layer of the river bed is usually about 60m. The water bearing layer (aquifer) is thick and has a high flow rate. Bedrock fissures provide a small part of water to the river. The underground water level is flat and even. Mountains on both sides of the reservoir area are high and occupy a large area. They are much higher than the normal water level. There is no major rock fracture system or highly permeable layers in the mountains within the reservoir areas or deep valleys in the surrounding area; therefore, the risk for major seepage after filling of the reservoir is minimal.

## **2.2 Briefing of the Social-Economic Status in the project area**

### **2.2.1 Social-Economic Survey in the proposed project area**

The project constructor, working together with different line bureaus, has set up the project surveying group during the preparation stage of the project resettlement plan. The group conducted detailed social-economic survey by combining the collection existing social-economic data and field visits. The survey results include the following two parts:

A: Baseline information in the proposed resettled area, social-economic status and development plan in the future, total local GDP, residence income level, total industrial and agriculture production value, government revenue, people's living standard, price of agricultural products. The survey also includes information, such as, agriculture production models, crop sowing areas and unit yield. The statistics from the annual year book was also collected.

B□The resettlement impact to the life of local residents: Confirming the indicators which affect the life of local residents and sampling survey to resettlers. Data collection and sampling survey started after the physical indicator survey. The survey started in late Sept. 2008 and completed in the beginning of Oct, 2008

### 2.2.2 Social-Economic Status of Turpan

The total population in Turpan is 269,152 in the end of 2007, of which, 183,768 agriculture population, which make up 68.28% of the total. The non-agriculture population is 85,384, which make up 31.72% of the total. There are 27 nations in Turpan, such as Uygur, Han, Husic, Hui, Man, Mongolia. Uygur and Han make up the bulk of the population. The population of Uygur, Han and Hui is 191,180, 57,427 and 19,547 and make up 71.03%, 21.34% and 7.26% of the total population respectively. Other nations' population is 998, which make up 0.37% of the total. The total output value of agriculture, forestry, animal husbandry and fishery in Turpan was 1.09 billion Yuan, of which, agriculture was 873 million, forestry was 10.84 million, animal husbandry was 183 million, fishery was 1.78 million. The total output value of industry was 2.62 billion Yuan, the amount from township and above township level was 2.5 billion, the amount from village and below village level was 132 million.

The land resources in Turpan is rich and the total land area is 23.607 million mu, of which, cropping land area, grape land area, waste land area, forestry area, pasture land area, residential area and mines area, communications land area, water surface area is 208,100 mu, 228,100 mu, 1,035,600 mu, 224,500 mu, 3,402,200 mu, 296,800 mu and 47,700 mu, 155,300 mu, make up 0.88%, 0.97%, 4.39%, 0.95%, 14.41%, 1.26%, 0.2% and 0.66% of the total land area. Land area which is used for other purpose is 18 million mu, which make up 76.63% of the total land area. The unused land area makes up the bulk of the total land area, which include waste land, salt and alkaline soil, swampland, sand land and farmland.

### 2.2.3 The Social-Economic Status of the Inundation Area and Resettled Area

Ertanggou reservoir construction covers Ertanggou natural village in Qialekan administrative village in Shengjin township, the survey group conducted a survey on social-economic, people's living standard and agricultural production status within project affected villages and townships in Oct, 2008. The Design Institute of Water Resources & Hydropower of Xinjiang Uygur Autonomous Region provided technical assistance. The results of the survey illustrates that the proposed project site is located in remote mountainous area with inconvenient communications, no power supply, no telephone line and fragile infrastructure base. Animal husbandry is the major activities for the farmers in the area. The arable land per capita is 0.37 mu and natural pasture area per capita is 711 mu, the annual average income per capita was 3,643 Yuan.

Shengjin township, which is one of the 9 townships in Turpan, is located in the far east of Turpan, in its east, lies Liangmuxin township of Shanshan county, south, Tugugou township. In its north, lies Qiqitai county of Changji and in its west lies Turpan city, which is 40 km away. The total land area of the Shengjin township is over 300 km<sup>2</sup>, there are 9 villages committees named as: Paizhiawati, Kaishituer, Jiayihejiamu, Shengjing, Shegezhikule, Ahetamu, Murituke, Aixixia and Qialekan, there are 44 natural villages. The total number of people is 22,776 from 4991 households (Agriculture population is 22,921), the township comprised of Uygur, Han and Hui, of which, Uygur population is 22,776, make up 93.6% of the total population. The rest are Han and Hui, which is 1557 people, make up 6.4%, The total arable land area of the township was 37,823 mu in the end of 2007.

The total number of persons in Chalekan village in Shengjin Township is 354 from 88 households, the total arable land area is 330 mu, of which, 300 mu for wheat and 30 mu for

each. The natural pasture land area is 170,000 mu. The planned village GDP was 1.611 million Yuan in 2008, 4,700 Yuan per capita.

The resettled area is located in Hankebaer village of Liangmu township in Shanshan county, which is 15 km away from the reservoir, 5 km from Lanxin railway, 37 km away from national road 312.

Liangmuxin Town was named as “Red Flag Community” in August, 1958 and township government was established in 1984, it was renamed from Liangmuxin Township to Liangmuxin Town in 1994. The Liangmuxin Town is located in the west of Shanshan county, 21.8 km from the county seat. In its east lies Pizhan township, west lies Shubeixi village in Tugugou township, flame mountain is in south, Tianshan is in the north. Part of the national road 312 and Hegao express way is in the township. The total area is 2,400 km<sup>2</sup>, The elevation varies from 300 to 400 meters. There are 61 natural villages, 1 animal husbandry production brigade and 12 administration villages in Liangmuxin Town. The total number of people is 33,520 from 7835 households, of which, agriculture population is 29607, the township comprised of Uygur, Han, Hui, Hasick and Mongolian, of which, Uygur population is 27,239, make up 81.3% of the total population. The Han population is 3,515, make up 10.5% and the rest of the population is 2,666, make up 8.2%.

There are ten schools in the township, of which, 7 primary school, 2 middle schools and 1 Han middle school; 1 TV & broadcasting relay station, 1 rural credit, 1 township clinic and 12 village clinics plus 9 private clinics. There are 7 drugs retail stores. There are 2 Autonomous Region designated “Civilized Villages”, 1 prefecture designated “Civilized Village”, 1 state designated “Model Village in the obeying the law” and 4 county designated “Civilized Villages” in the township. The total number of “Ten Star Households” is 1002, which make up 12.79% of the total number of households.

Hankebaer village, which is one of the village groups in Liangmuxinkebaer, is 40 km away from Liangmuxin Town and has a history of over 300 years. The total population is 153 from 30 households (All of them are Uygur), of which, 5 households are receiving living and education subsidy from the government. The total arable land area is 300 mu. Grape and walnut are the major crops. There are 100 mu of grape and 200 mu of walnut. The net income per capita in 2007 is 4,200 Yuan. There is 1 primary school in the village with 10 students and 1 teacher. There is also 1 mosque.

Table 2-1. Social-Economic Status in Shengjin Township Liangmuxin Township (End of 2007)

Serial Number	Items	Unit	Quantity	
			Shengjin Township	Liangmuxin Town
1	Total population	10,000	2.4333	3.352
2	Agricultural population	10,000	2.29	2.96
3	Total number of households	hh	4991	7835
4	Total land area	km <sup>2</sup>	300	2400
5	Arable land area	mu	37823	37052
6	Arable land per capita	mu/person	1.55	1.11
7	Grape growing area	10,000 mu	3.5	3.33



8	Total industrial & agricultural production value	100 million Yuan	1.55	2.9
9	Farmer/Herder net income per capita	Yuan	4688	5054

Table 2-2. The baseline information of Qialekan and Bakaer Village (Year 2007)

Serial Number	Items	Unit	Quantity	
			Qialekan	Bakaer
1	Nation		Uygur	Uygur
2	Total number of households	hh	88	30
3	Total population	person	333	153
4	Arable land area	mu	330	300
4.1	Wheat growing area	mu	300	
4.2	Vegetable growing area	mu	32	
4.3	Grape growing area	mu		100
4.4	Walnut growing area	mu		200
5	Arable land per capita	mu/person	0.99	1.96
6	Net income per capita	Yuan	3643	4200

### 2.2.4 Uygur Language and Characters

Uygur has its own language and character. Uygur language belongs to Turki, Altai language system. According to the history, Uygur used Chahetai language based on Turkish, Mionan and Arab. The Uygur language used nowadays is based on Chahetai language. There are 32 letters. The old-fashioned Uygur language writes from right to left. In year 1960, Uygur language has been reformed to be a new set of Uygur language and in 1982, the old-fashioned Uygur language resumed.

The difference between dialects in grammar is limited and little difference in pronunciation. There is no language obstacle within different areas in Xinjiang. The modern Uygur language is classified as central dialect, Hetian dialect and Luobu dialect. Many Uygur people also speak Chinese and Kazak as a result of communication with other nations.

The resettlers in the proposed reservoir area are all Uygur, they could be able to speak only one language—Uygur, because of inconvenient communications, they have few opportunities to access the outside world.

### 2.2.5 The Belief of the Uygur

In terms of nationality and religion, the central government of China and State Council pointed out clearly in the “The Decision of Strengthening the Nationality Affairs and Accelerating the Social-Economic Development and Ethnic Minorities in Ethnic Minority Areas” that the state will prepare “The Eleventh Five Year Plan” for ethnic minority areas. It is the requirement of the State Council in the “Law of Self-Government in Ethnic Minorities Areas in The People’s Republic China” that the government at higher level should support the social-economic development in the ethnic minority areas, consider the special needs and characteristics of the ethnic minority, while the government are making middle and long

term development plan. The autonomous region committee in Xinjiang (The Bureau of Religion) prepared “The 11th Five Year Plan for the Affairs of Nationality and Religion in Xinjiang Autonomous Region”. It says in the plan that “Carrying out all the favorable policies of the state and the regional government, continue to promote the development of social-economy.” “Stick to the scientific development view and promote the fast development in the ethnic minority areas”.

The Uygur believed in Shamanism, Manichaeism, Nestorianism, Zoroastrianism and Buddhism in ancient times. In 16 century, Islam has become the ruling religion in Uygur areas. Most of the Islam believed in Sunnite and some people believed in Yishanpai. After the establishment of the PRC, the senior level religious people are not allowed to interfere judicial and education. The normal religious activities have been protected by law.

### **2.2.6 The custom of Uygur**

#### **A. Marriage and Family**

Monogamy is the basic rule in Uygur marriage. Inter-marriage normally occurred within the nation or between the ethnic believed in Islam. Husband and wife are the base in the family, and members include direct relatives from the past three generations. Within families which have many sons, the sons lead a separate life after marriage and the youngest son stays with parents. The women’s status in the family was low because the marriage was arranged by parents although monogamy is the basic rule in Uygur marriage. The old has been respected in the families and in the sociality after the establishment of PRC.

#### **B. Clothes**

Uygur men usually wear gowns and it is called “Chipan” in Uygur, tight with long belt, without button. The rural women usually wear bag sleeve one-piece dress, the coat is black front opening sleeveless garment. The women in the urban areas usually wear western-style coat and skirts. Both men and women love to wear embroidery small cap and it is called “Paduo” in Uygur. Ladies love to wear ear ring necklace. Both men and women love to wear boots.

#### **C. Flower-trimmed bonnet**

The history of flower-trimmed bonnet is long with many varieties and it is called “Paduo” in Uygur. The Uygur, Kazakhstan, Kirgiz and Hui like to wear flower-trimmed bonnet, the flower-trimmed bonnet is made of hand-stitching work and string of beads. It differs by nations and areas. The flower-trimmed bonnet is nice to look very enjoyable.

#### **D. Courtesy**

The courtesy of Uygur is closely related to religion. The courtesy reflects equality, friendship, respecting the old and caring the young. The ordinary people shake hands with each other the old were respected. The old kiss the younger generation between ladies. As the economy develops, these courtesy shows ranking disappeared and the courtesy reflects friendship and love stays and new meanings was also added to these courtesy.

The Uygur are very hospitable and polite. When walking, the old walk first and when talking, the old talk first and when sitting, the old always seat in main position. The young are not allowed to smoke or drink in front of the old. Friends and relatives greet each other by shaking hands and then bow back to each other, greeting members in the families. Women trunk bend to each other after greeting. When sitting in house, it is required to squat and stretch legs face the bottom of the feet to others is not permitted. Both hands are required to take over objects or providing tea to guests, one hand is considered to impolite.

#### E. Washing

The nations who believed in Islam have a clean habit. They always wash their face from kettles, not basin. They must wash their hands before eating and drinking tea. They love to eat rice with their hands, that's why washing hands is so important. When hands have been washed, squeeze water and then dry it. Dishware has to be washed one by one and dry it afterwards. Bowls are washed to dry naturally.

#### F. Taboo

Uygur believed in Islam has taboos like inhumation, not cremation. It is not allowed to talk loud around mosques or tombs. It is not allowed to stir up the food in plate, no leftover. Food dropped on the ground should be picked up in the napkin, not to be mixed with other food. When eating or talking to people, blowing one's nose or spitting is not allowed. Pork, donkey meat, mule meat, dog meat or dead animals are not allowed to eat. In dressing, short clothes are not allowed and coats should be as long as over the knees and trouser-legs should be at the feet.

#### G.: Funeral

The Uygur funeral is an event both solemn solemnity. The funeral shall follow the Islam costume and is inhumation popular. According to Uygur costume, people died on Friday, Idal-fitr or Corban is a happy ending. Many people believe that in their old age, one wants to return to one's hometown, especially the Uygur, people would rather chose to die at home and the corpse be kept at home for no more than two days to prevent decaying.

The corpse has to be cleaned before inhumation. The dead male shall be cleaned by monk plus one or two older. The dead female shall be cleaned by old ladies and boys or girls can participate. After cleaning, the male corpse will be wrapped with three layers of clothe and female corpse will be wrapped with five layers of clothe. If the patient cannot be cured, people would rather chose to die at home than in the hospitals. If somebody died outside, their relatives would work out all ways to carry corpse back home to inhumation.

The relatives inform others after corpse has been treated, especially for the old. When people died, their face have to face west and be covered by white clothe, the mouth has to be tight by clothe to close the mouth, looks like the dead is sleeping. Nobody shall stay at home when cleaning. The Uygur normally bury corpse in the evening if people died in the morning and bury corpse at noon if people died in the evening. After corpse has been cleaned, it be put on the wood frame and coved by white clothe and then escorted by the relatives to mosque for funeral (Ladies not participate).

In mosque, the imam will distribute money and properties to imams in the mosque and others, the last alms, and then imams will pater and pray. The corpse then is sent to tomb. The tomb is 2 meters long, 1 meter wide and 2 meter deep. The imam pater before inhumation. All people participate the funeral grab soil to spread around the dead and then block the tomb by big stone. Most of the tombs are rectangle. Some tombs look like palace.

The relatives all cry when people died and others come to condolence when heard the crying. The relatives praise the good deeds of the dead while they cry to express the sadness. The close relatives of the dead wear white clothe belt and ladies wear white end shield, too.

“Naizhier”, which is a ceremony to morn the dead will be held on the third, seventh and 14th day after the funeral. A activity to recall and grieve the dead.

#### H. Housing

The Uygur farmers use soil and mud to build their houses. The house usually have roof for lighting and fireplace inside fro heating and cooking. In some houses, there are niches made by plaster for articles for daily use, also as a ornament, too. For middle class families, they have house for winter and house for summer. Peach trees, apple trees, apricot trees, mulberry trees and flowers are planted around the houses. Some houses have grape in front of the house as pergola.

#### I: Food

The daily food of Uygur farmers are Uygur bread, noodle, mutton with rice, tea and milk. They treat guests with zhuanfang. Barbeque, Uygur bread and dumplings are favorite food of Uygur people. The Uygur love fruits, too.

#### J.: Traditional Holidays

The traditional holidays of Uygur include: Balsam, Corban and Nauru. The annual Corban is the most important one. The families believed in Islam prepare “Sainz”(a kind of fried food) and slaughter goats and chickens for the festival. Peoples wear new clothes to greet each other during the festival.

The people in the project area and resettled area use Uygur and it is difficult for them to communicate with other nations. The resettled area have the same costume as the Ertanggou area.

## **2.3 Social-Economic Survey and Social-Economic Characteristics of Sampling Households**

### **2.3.1 Social-Economic Survey**

The Design Institute of Water Resources & Hydropower of Xinjiang Uygur Autonomous Region colleted data on local Social-Economic status and listen to the comments from the line bureaus related. The key issue is on how to start the proposed project in a early stage and also at the same time to prepare a practical resettlement plan for the local farmers.

In order to prepare a practical resettlement plan, the project owner has organized the survey participated by the line bureaus in the project villages, townships, cities and counties. The method of the survey combined collecting the existing data and field random interview. A detailed analysis has been conducted based on social-economic status and the actual living and production conditions the survey group got from the survey.

According to the survey, most of the people in the area support the proposed project construction and the also reckon that the project would help the development of the local economy and improve the investment in the area. 93% of the households have no objection to the project construction and they will resettle per project requirements. What they care the most is the resettlement policy and compensation.

There is one primary school in the inundation area (Built in 70s), There were 12 students and 1 teacher at that time. The school stopped teaching because of no teacher would like to go there and it is in remote area. Better-off households sent their children to better schools.

There is one public church in the inundation area, the area of the church is about 40 m<sup>2</sup>, . 5 times of worship in a day according to the Islam rules and there are about 5-8 people worship in church everyday and number of people worship in the church could be as many as 40 to 50 during Id al-fit and Corban.

### 2.3.2 Social-Economic Characteristics of Sampling Households

The project resettlement covers 97 people from 20 households in Ertanggou in Qialekan village of Shengjin township in Turpan. In order to learn more information about the resettlement households, the survey group selected 10 sampling households by random survey and a survey in detail has been conducted. The 20 resettlement households are all Uygur and make up 50% of the total households.

The survey results illustrates that although the proposed project is in the remote areas of Shengjin township in Turpan, however, the income of the sampling households varies from 700 to 4562.54 Yuan. The table 2-3 below shows the the basic production and living conditions of the sapling households.

Table 2-3. Basic Information of Sample Households

Items	Unit	Survey Results □ 10 hh □		
		Total Amount	Unit indicator	Remark
A: Family Members & Labors				
1. Family Members /Female		48/24	4.8/2.4	Per Capita
2. Labors/Female		33/19	3.3/1.9	HH by average
B: Living Condition				
1. Residential Areas	m <sup>2</sup>	1910.07	39.79	Per Capita
Of which □ Stone Structure	m <sup>2</sup>	1804.37	37.59	Per Capita
Soil and Wood Structure	m <sup>2</sup>	105.70	2.20	Per Capita

## RAP for Construction of Ertanggou Reservoir

Items	Unit	Survey Results <input type="checkbox"/> 10 hh <input type="checkbox"/>		
		Total Amount	Unit indicator	Remark
2. Fuel				
<input type="checkbox"/> 1 <input type="checkbox"/> Coal	Yes/No	Yes		
<input type="checkbox"/> 2 <input type="checkbox"/> Wood & hey		Yes		
3. Cable TV	Yes/No	No		
4. Pow supply	Yes/No	No		
5. Solar Battery		Yes		
6. Telephone	Yes/No	No		
7. Heating system				
<input type="checkbox"/> 1 <input type="checkbox"/> Heater	Yes/No	No		
<input type="checkbox"/> 2 <input type="checkbox"/> Stove	Yes/No	Yes		
8. Drinking water	Yes/No	Yes		
C: Agriculture and animal husbandry production				
1. Contracted land area	Mu	59.07	1.23	Per Capita
of which, A: Arable land	Mu	12.07	0.25	Per Capita
Irrigated land	Mu	12.07	0.25	Per Capita
B: Forestry land	Mu	1.06	0.02	Per Capita
C: Orchards	Mu	20.82	0.43	Per Capita
<input type="checkbox"/> 4 <input type="checkbox"/> Man-made pasture	Mu	25.11	0.52	Per Capita
2. Livestock Products				
Sheep/goats	Head	4080	85	Per Capita
Dogs	Head	5	0.10	Per Capita
Horses	Head	10	0.21	Per Capita
Chickens	Head	128	2.67	Per Capita
D: Family consumer durable goods				
1. household appliances				
TV sets	set	10	1	Per HH
2. Transportation & production tools				Per HH
<input type="checkbox"/> 1 <input type="checkbox"/> Motorbikes	set	3	0.30	Per HH
<input type="checkbox"/> 2 <input type="checkbox"/> Sewing machines	set	3	0.30	Per HH
<input type="checkbox"/> 3 <input type="checkbox"/> Clocks and watches	set	7	0.70	Per HH
E: Annual gross income	Yuan	280550.00	28055.00	Per HH

Items	Unit	Survey Results □ 10 hh □		
		Total Amount	Unit indicator	Remark
Livestock production income	Yuan	280550.00	28055.00	Per HH
F: Annual gross expenditure	Yuan	104200	10420.00	Per HH
1. Animal Husbandry	Yuan	57310	5731.00	Per HH
2. Living expenditure	Yuan	46890	4689.00	Per HH
□1 □Food	Yuan	28134	2813.40	Per HH
□2 □Clothes	Yuan	6665.60	666.56	Per HH

The basic information is drawn from the analysis of sampling households:

#### Properties:

The households in the project have contracted land areas, houses and cattle. The total land area of the sampling households is 59.07 mu, 1.23 mu per capita, of which, 0.25 mu arable land, 0.52 mu man-made pasture, 0.43 mu orchard, 711 mu natural pasture and 0.02 mu forestry land. None of the land area is no more than 1 mu except for natural pasture. The land resource in the project area is limited and crop production are mainly alfalfa and maize. The number of cattles per sampling household is 87.98 heads. They have traditional houses of fieldstone and the average living area per capita is 39.79 square meters. 94.47% of the houses are made of fieldstone and 5.53% of the houses are made of wood and earth.

The project villagers have limited number of vehicles and production materials, such as 0.3 motor bike, 0.3 sewing machine and 0.7 watch and clock per household.

#### Labors

The major activity in the project area is animal husbandry. Of the 48 people surveyed, 33 are labors, which make up 68.75% of the total population.

#### Income

The survey shows that the income of the sampling households varies from 700 to 4562.54 Yuan. There are some poor households' income level is below 700 Yuan.

#### Consumption

The survey shows that 55% of the expenditure is on animal production and the rest are for living. Of the living expenditure, food make up 60%, clothes make up 14.22%, housing make up 10.66%, medical care make up 2.56%, daily commodities make up 2.56% and transportation and communication make up 10.66%. The table below shows the consumption status of the households.

#### Infrastructure

The infrastructure in the project area is poor, there is no power supply, no schools nor public health facility. The household get water from river and spring.

#### Daily life

Most of the residents use coal and hey as fuel and heating by stoves. Most of them do not have washing machine or other electrical apparatus. Some farmers have TV sets, however, they cannot watch it because no signal could be received.

#### Gender

Table 2-3 shows that both the number of male and female, the labors in the population are almost the same, men and women have the equal rights. The hosts of the households are men, who are in charge in families. Both men and women participate in production and normally undertake activities like, land leveling, fertilization, watering and looking after cattle and women do house works like cooking, washing, taking care of the old and children and feed the chickens.

### 2.3.3 The social-economic information of the people

There are 20 households with 97 persons that will be resettled. 4.85 persons per family on average, they are all Uygur. Those whose age is under 18 make up 24.75%, age over 60 make up 4.12%. Most of their ages are between 18 to 35, which make up 48.45% of the total population. Among them, the highest education level is middle school, which make up 41.24% of the total population, those from primary school make up 37.11% and the rate of illiterates and semi- illiterates is 11.34%. The educational background of female is lower than that fro male. The table 2-4 and 2-5 shows the education information status.

Table 2-4. The Age Group of the Project Area

Serial No.	Ages	Persons	Ratio □%□
1	<18	24	24.75
2	18 □ 35	47	48.45
3	36 □ 55	15	15.46
4	56 □ 60	7	7.22
5	>60	4	4.12
6	Total	97	100

Table 2-5. Education Background

Serial No	Educational background	Persons	Ratio □%□
1	Before school age	8	8.25
2	Kindergarten	2	2.06
3	Primary school	36	37.11
4	Middle school	40	41.24



Serial No	Educational background	Persons	Ratio □%□
5	Illiterates and semi-illiterates	11	11.34
6	Total	97	100

## 2.4 The results of social-economic survey in the project area

### 2.4.1 The basic information survey in the reservoir area

The survey group conducted their 30-days survey from Sept to Oct, 2008. The survey covers detailed social-economic information both in the inundation area and resettled area as follow:

#### 2.4.1.1 Income sources of the resettlers:

The reservoir area are remote areas with poor infrastructure, inconvenient transportation, however, these are the natural production areas. The meat price hikes in recent years and green food is what people wants, as a result, the income of the families are not lower than in flat areas. The source of income is animal husbandry, no other source of income like labour mobility.

#### 2.4.1.2 The annual expenditure

The animal husbandry, which is the major activity in the reservoir area, cannot satisfy the needs of daily life, farmers have to pay for their children to go to school, too. Purchasing the feed for animals in winter is a huge expenditure.

#### 2.4.1.3 Income status for low-income households

Based on the data from Turpan city civil affairs bureau and survey, the low-income households in the reservoir varies between 300 to 685 Yuan, which is lower than others, but the annual expenditure is almost the same.

#### 2.4.1.4 The production and living in the reservoir area

Based on the survey, the living and production model in Ertanggou reservoir area is simple. The average living area per capita is 49.22 square meters and most of the houses are fieldstone houses, which make up 96.23% of the total number of houses. There are arable land area, orchard, pasture, forestry land around the houses. The crops are maize, walnut, alfalfa, but the unit yield is low.

The resettlers' main activity is animal husbandry and the natural pasture area in spring, fall and summer is 69,000 mu, of which, 700 mu will be inundated, make up 1.01%. There are no feed for animals during winter time because of low temperature. The animals have to graze on flat areas from Nov to Feb. By improving the grazing path, their production model will not be changed.

#### **2.4.2 The survey in the proposed resettled area**

Bakaer village is located in the north of Liangmuqing township, 40 km away, 38 km from Liangmuqing township and 5 km from Lanxin railway. The village has a history of more than 300 years. There are over 30 Uygur households with 153 people in the village, 5 of the are low-income households. The total arable land area is 300 mu, there 100 mu grape and 200 mu walnut. The average per capita income in 2007 was 4,200 Yuan. There is 1 primary school, 1 teacher and 10 students and 4 classrooms in the school. There is 1 mosque. The people believe in Islam. The costume in the village is the same as that in Ertanggou reservoir area. The villagers would like to accept the resettlers from Ertanggou reservoir area. First of all, the relationship between the villages has been good and once there will be more people in the village, infrastructures like school, clinics and roads will be improved. The resettlers from Ertanggou reservoir area share the same belief and religion as the people in the village.

### 3. Project Impacts

#### 3.1 Impact Survey

##### 3.1.1 Project Impact Area(Reservoir Inundation Area)

Based on the “Norms for Design of Land Acquisition and Resettlement for Construction of Water Resources and Hydropower Projects (SL290-2003)”, the inundation areas need to be treated include: frequent inundation area, temporary inundation area, land slide, bank collapsed, inundation caused by the water storage in reservoir.

A: Frequent inundation area: The area which is below normal water level of 1474 meters in Ertanggou reservoir.

B: Temporary inundation area: The area which is over normal water level, affected by waves and backwater.

Flood design standard: Considering safe, economy and original flood control criteria, the Ertanggou flood design standard is as follows:

Farmers’ residential area: every 20 year of flooding,  $P=5\%$

Arable land, orchard: every 5 year,  $p=20\%$

Forestry land, natural pasture and stone area apply to normal water storage level, which is 1474 meters.

Wave run-up: It refers to area that is affected by waves and wave run-up. This factor is not considered because the water surface is not wide and both banks of reservoir are stones and it is located in the valley area.

Reservoir backwater affected area: Based on survey, there are no residential area, arable land or other special facilities except for stone in the end of the reservoir, so this factor is not considered.

C: Affected area: It refers to area that have to be treated because of landslide, bank collapsed and inundation. The residents lose their basic living and production condition as a result.

Immersion: There is no immersion problems in Ertanggou reservoir area.

Bank collapsed and landslide area: The survey conclusion was that there is no problems in this aspect.

Based on the above rules of safety, economy and convenient to life and production, the normal water storage level has been confirmed as 1474 meters.

### **3.1.2 Contents of survey**

The Physical Inundation Indexes surveys include physical index survey, special items survey and social-economic survey.

A: The rural survey include: Population, houses and land areas.

B: The special items survey includes: hydrological station, historical relics and mines.

C: Land acquisition scope and social-economic survey of resettlement area. The information was collected from the above areas which include: Detailed land information, biological resources, water resources, meteorology, topography and natural disasters; the social-economic data from 2005 to 2007, the development plans in the near future and long terms.

### **3.1.3 The survey methods and requirement**

A. General requirement:

- The members of the group shall be familiar with the contents of TOR, the ways of surveying, criteria and procedures.
- The surveyors undertake survey on physical index and record it.
- The survey result shall be signed by surveyors and owners of the property. The signing of property could be classified as:
  - The host signed if the property belongs to farmer or resident.
  - The legal person signed if the property belongs to enterprises.
  - The person in charge signed if the property belongs to an organization.
- Classify the survey results and city government confirm it in the forms of document.

B. The physical index survey

(1) Population survey

The population calculation criteria in inundation area

Based on household registration booklet, classify the cropping population, animal husbandry population and non-agriculture population. Population survey scope include: People in inundation area, bank collapsed area, people out side of the inundation level, but are not able to solve the problem of production nearby, people cannot carry on normal production, living that have to resettle and those who are not able to go to school or to hospital because of the

project, these people include:

- ① The survey includes permanent people in the survey area which have household registration booklet and production.
- ② The survey includes permanent people in the survey area which have household registration booklet and production, but without house.
- ③ The survey includes people who are not part of family planning or married in the survey area, but not listed in the household registration booklet.
- ④ The survey includes those listed in the household registration booklet that have house and production material, but not live in the area, such as, students outside or persons doing off-farm work.
- ⑤ The survey includes those who have house and production material, but the household registration booklet is out, like for military, students or people in prison, etc.
- ⑥ The survey includes those who have house and profession in the area, however, the household registration booklet is not in, such as, primary school teachers or contracted rural officials.
- ⑦ The survey does not include those who have no house nor production material and living outside of the resettlement area.

The survey does not include those who died, but still listed in the household registration booklet.

2  Method of survey and requirement

The criteria to or not to include people in the survey depends on whether his house is in the land acquisition area or not. The elevation of population distribution is set with the floor elevation of the major house as the benchmark. The houses are numbered one by one with the elevation marked. In the case that one household has more than 2 sets of houses, the floor elevation of the major house that they actually live in is recognized as the elevation of population distribution.

The household registration booklet was the base for the survey, and the survey include: host name, profession, labors, names of the family members, age, gender, educational background and the relationships to the host are the items included in the survey.

The survey staff should check the house ownership certificate and the household registration booklet of the surveyed, of the above 2 documents the house ownership certificate will serve as the major evidence. The host name on the house ownership

certificate should be in line with that on the household registration booklet. In the case that the civil registration of a new comer (e.g. through marriage) is not located in the survey area, s/he can be registered in the survey on the basis of marriage certificate. For the children without civil registration due to the fact that they were born outside the birth-control plan, they can be registered on the basis of the birth certificate from hospital and the evidence certificate from township government. For the other people without civil registration, they can be registered under the preconditions that (i) they can satisfy the criteria in the project population survey and (ii) evidence certificate above the level of township government is available.

In the case that house and property in kind are within the project impacted area, only the house and the property in kind are registered. For the inundated areas beyond the land requisition line, the land quantity by category will be clarified, on the basis of which the number of resettlers due to inundation will be calculated. In addition, the number of resettlers, houses and other property in kind (that are related with resettlement compensation) outside the resettlement line are surveyed in details. (The farmland, forest land and other scattered properties will only be registered, but not be considered as evidence when calculating compensation fund).

After the completion of the population survey, the summarized data will be compared with those in the civil registration section of police station.

## B. Survey of Houses and the Accessory Structures

### (1) Classification of Houses

The inundated area of the reservoir is recognized in the terms of administrative villages and townships. The floorage measurement of houses and the accessory structures of the individual households, collectives and the state units will be conducted in unit of natural village or villager group. The data will be registered by categories. Any of the houses or the accessory structures that has already lost its due function will not be registered.

**Ownership Classification:** On the basis of the ownership and membership, the houses will be classified as the houses of private households, the houses of rural collectives and the houses of the state ownership (i.e. the administrative and public institutions at and above township level).

**Structure Classification:** According to the building material of the load-carrying member, the houses will be classified into 3 categories. Similar structure will be included into the most nearby category, whenever possible. For the structure that is too special to be included into any of the said categories, there can be an additional category on the basis of the said categories.

⌘ **Barnacle Structure:** stone walls, wood floor-slab, tile roof.

- ⌘ Clay-wood Structure: The walls are built of wood or clay or compacted soils. The roof is covered with tiles or straw. The floor is of plain soil. A major house that is below is standard will be calculated as in this category.

## (2) Classification of Usage

- Major House: Major house means the house in which person(s) is living. The story height is more than 2.0m. The floor-slab, walls, doors and windows are in good condition.
- The accessory structures will include fencing walls (including the fencing walls around the production zone and livelihood zone), gate, terrace, well, threshing ground, cellarage, simple-structured sheds/stables for poultry and livestock, toilets, stacking shed and so on. The measure unit can be square meter, set, piece or cubic meter, considering the different categories.

## (3) Calculation Criteria of House Floorage

The construction area of a house is the periphery horizontally-projected area of the structure above the quadra of external walls. It includes balcony, cornice, basement, outdoor stairs and so on. This kind of permanent structure has roof, strong in structure, story height at/above 2.0m. The measurement tools can be tape rule or other qualified measuring instruments and tools. In addition to the policy in Measure Regulations for House Property (GB/T17986.1-2000), the following stipulations will be practiced under the consideration of the rural actual situation:

- The construction area of a house will be used as the measured area in unit of square meter with common difference of  $0.01\text{m}^2$ .
- The area of dooryard indoors, no-pillar eave, canopy or simple outdoor baseless stairs will not be calculated as house floorage. For the stairs with base, the area can be calculated as half of the house floorage.
- The area of no-pillar outdoor corridor will not be calculated, while the area of the pillared corridor can be calculated as half of the house floorage.
- The area of the close outdoor balcony will be calculated as house floorage, while the area of the half-closed balcony can be calculated as half of the house floorage.
- For the house on-going construction, if the groundwork has been completed, it can be calculated as the house floorage, but a remark of “on-going” is required.

## (4) Survey Methods for Houses and Accessory Structures

A survey group will make an overall on-the-spot survey. With a village as one unit, the

houses will be measured and recorded one by one. At the same time, the accessory structures such as scattered trees will also be surveyed and recorded. The survey records should be signed by property owner (housemaster) and the survey staff.

### C. Land survey

In terms of ownership, there are state land and rural collective land. In terms of the present situation of land use, there are farmland, plantation, forest land, grassland, house sites, land for public service, land for special purposes, land for transportation, water surface, land of irrigation and drainage and land for other purposes. On principle, the land type is recognized on the basis of the description in the land ownership registration. For the land that the ownership has not yet been registered or its use has already been changed without timely updating the registration, the land type is recognized on the basis of the present land use. The land ownership should be surveyed in details. The measurement unit will be mu (one ha = 15 mu).

(1) Farmland is the land for crops. It includes cultivated farmland, newly reclaimed farmland and fallow field.

Irrigated land refers to the farmland with assured water supply. It includes normal crop and greenhouse.

(2) Plantation refers to orchard and nursery with the coverage of target plants more than 50%.

(3) Forest land refers to the land with trees and shrubs. Forest land refers to the land with the crown density of trees  $\geq 20\%$  or with the shrub coverage  $\geq 40\%$ .

With the land use map (1/5000) in hand, the forest land within the scope of land requisition will be on-the-spot measured by the project staff and the officials from land administration sector. The measurement will be conducted with an administrative village as one unit. Xinjiang Agricultural University will be entrusted to complete the survey of forest land.

(4) The grassland hereafter in the project refers to artificial pastures and natural grassland.

Survey Methodology: The on-the-spot measurements of farmland, plantation and artificial pasture will be conducted by the survey group, while the measurement record will be jointly confirmed by the signatures of the manager and the survey group. With an administrative village as one unit, the natural grassland will be measured by the project staff and the officials from land administration sector on the topographical map (1/5000). Turpan City Grassland Station will provide the data of natural grassland categories.

(5) House sites include the land occupied by urban houses and rural houses. The project will involve only with the rural houses in the inundated area. The survey group will conduct



on-the-spot measurements and records.

(6) The land for transportation refers to the land occupied by roads and parking lots. In the project, the land for transportation refers to the land of grazing channels. The land for transportation will be measured by the project staff and the officials from land administration sector on the topographical map (1/5000).

(7) The land for public service included the land occupied by governmental/institutional agencies, publishing houses, scientific and educational institutions and the structures of recreation and sight-seeing.

The land for scientific and educational institutions refers to the land occupied by Turpan Hydrological Station for flood prevention. Since the facility is of simple structure without special building, the land is not recognized as the land occupied by the project.

(8) The land for special purposes refers to the land for purposes such as military structures, foreign affairs, religion, prisons and tombs.

There is one set of mosque in the inundated area of the project. The floorage is 40m<sup>2</sup>, and the land is listed in the house survey.

(9) The land for other purposes includes idle land, salt-alkali lands, land for protected agriculture, swampland/wetland, desert/sandland, barren land, farmland ridges and so on.

Survey Methodology: The survey groups will be composed of the project survey staff, measurement staff and village heads. The topographical map (1/5000) in hand will be compared with the current land use map and the field reality. On the above basis, the land for other purposes is measured on the topographical map (1/5000).

#### D. Survey of Special Structures

The special structures within the scope of land requisition in the project mainly include hydrological stations, cultural/historical sites, mineral resources and so on. The basic information will be provided by the respective sectors relevant. The on-the-spot survey will be conducted by technical category and by unit. The ownership will be remarked for reference.

##### (1) Hydrological Station

The hydraulic structure in the inundated area of the Ertanggou reservoir is the water measurement structure. When surveying the structures to be impacted by inundation within the scope of project land requisition, the on-the-spot survey records will include the name, date of establishment, ownership, location, measuring items and the type of the station.

## (2) Survey of Cultural/Historical Sites

The survey records will include the name, historical age, pattern of construction, structure, scale, quantity, value, protection grade and so on. For the cultural relics under the ground, in addition, the burying depth will be recorded.

Survey Methodology: Xinjiang Archaeology Institute will be entrusted to make the on-the-spot survey. This has been approved by Xinjiang Bureau of Cultural Relics.

## (3) Survey of Mineral Resources

The survey records will include the resource name, geographical location, type, quality and reserves as well as the impacts of the inundation and land occupation by the reservoir. The sector of geology and mineral resources will provide information of mineral resources in the impacted areas and propose how to manage the issue.

### **3.1.4 Permanent and Temporary Land Use by the Project**

The permanent land use by Ertanggou Hydro Project will include dam across the river, spillway, diversion/irrigation tunnels, management station, simple roads, electric transmission lines, water supply pipelines, telecommunication lines, flood prevention structures, spoil yard and so on. The temporary land use will include temporary sites for construction, temporary roads for construction, transitional stacking ground, dam shell material storage and so on. In addition to the land occupation by the project itself, some land is put within the management scope of the project. More details of the management scope are illustrated as follows:

(1) The management scope of the reservoir and the dam will be within the scope of 150m at either side of the dam shoulder, 150 m downstream dam toe line and 100m upstream dam axis (excluding the overlap of the land requisition of the reservoir and the land for construction).

(2) The management scope of other structures will be the extension of 50 m outside the structures.

There is no farmland, grassland or residential area within the scope of permanent and temporary land use. It is actually barren ground. The scope of land occupation is detailed in the general layout of the construction. The area to be occupied is illustrated in Table 3-1.

Table 3-1. The Permanent land area and temporary land area of Ertanggou reservoir

Items	Unit	Area occupied	Remarks
1. Permanent land area	mu	1109.85	Including management
1.1. Dam	mu	327	
1.2. Spillway	mu	60.6	
1.3. Stream guidance and irrigation channel	mu	42	
1.4. House for management	mu	1.5	Construction Area: 1000m <sup>2</sup>
1.5. Road to storage	mu	172.5	
1.6. Power supply wires	mu	93.75	
1.7. Water supply pipes	mu	7.05	
1.8. Communication	mu	16.95	
1.9. Simple road	mu	261	
1.10. Waste area	mu	52.5	
1.11. Flood control measures	mu	75	
2. Temporary land	mu	829.95	
2.1. Dam shell stockyard	mu	589.5	
2.2. aggregate storage	mu	60	
2.3. transitional aggregate storage	mu	26.25	
2.4. Stock yard	mu	37.8	
2.5. Temporary road	mu	52.5	
2.6. temporary House	mu	26.1	
2.7. sieving yard	mu	37.8	

### 3.2. Impacted Land

In total, 3289.8 mu of land will be requested for the construction of Ertanggou Reservoir. This is piece of collective land. It belongs to Ertanggou Villager Group in Qialekan Village of Shengjin Township, Turpan City. The land resource to be impacted by the inundation of Ertanggou Reservoir is detailed in Table 3-2.

Table 3-2. The land resource to be impacted by the inundation of Ertanggou Reservoir

Class 1	Class 2	Unit	Quantity			
			Total	Inundation area	Occupied by the project	
					Permanent occupied	Temporary occupied
Total area		km <sup>2</sup>	2.1932	0.9	0.7399	0.5533
Land area		km <sup>2</sup>	1.1432	0.85	0.7399	0.5533
Water area		km <sup>2</sup>	0.05	0.05		
Farmland	Irrigated	mu	14.11	14.11		
Plantation	orchard	mu	21.37	21.37		
Forest land	forested	mu	133.85	133.85		
Grassland	subtotal	mu	735.05	735.05		
	Natural grassland	mu	700	700		
	Artificial pasture	mu	35.05	35.05		
House sites	rural	mu	16.67	16.67		
Special land	tombs	mu	2.91	2.91		
Transportation land	Country roads	mu	22.11	22.11		
water surface and hydraulic structure	Surface of rivers	mu	68.64	68.64		
Other land area	Sub total	mu	2275.09	335.29		
	Land for protected agriculture	mu	0.92	0.92		
	idle land	mu	3.27	3.27		
	Barren ground	mu	2270.90	331.10	1109.85	829.95

### 3.3. Land of Permanent Requisition

2459.85 mu of land will be permanently occupied by Ertanggou Reservoir, including 1350 mu of inundation-impacted land and 1109.85 mu of project construction area. The ownership of these 2 pieces of land belongs to the collective. The project construction area is actually a piece of barren ground. The details of the local land resources are illustrated in Table 3-2.

### 3.4. Land of Temporary Use

829.95 mu of land will be temporarily occupied by Ertanggou Reservoir, mainly including temporary sites for construction, temporary roads for construction, transitional stacking ground, dam shell material storage and so on. The temporary land use is mainly distributed within one km downstream the dam across the river. This is a piece of barren river-beach.

The detailed locations are illustrated in the chapters of construction and technical design as well as in the general layout.

### **3.5. Impacted Houses and Structures**

4774.36 m<sup>2</sup> of houses will be impacted by the inundation of Ertanggou Reservoir, including 4595.86 m<sup>2</sup> of private houses and 178.5 m<sup>2</sup> of collective houses. The floorage of sub-houses will amount to 216 m<sup>2</sup>. The details are illustrated in Table 3-3 and 3-4. As can be observed in Table 3-3 and 3-4, no important property will be inundated by Ertanggou Reservoir, except the houses and accessory structures of 20 households as well as some scattered farmland and trees. The houses and accessory structures to be impacted are of simple structure and poor condition.

Table 3-3. Private Properties to be Inundation-Impacted by Ertanggou Reservoir

No.	housemaster	Sex	populat ion	age	Barnacl e house (m <sup>2</sup> )	Clay- wood house (m <sup>2</sup> )	Sub- house (m <sup>2</sup> )	Sheds/st ables (m <sup>2</sup> )	Threshing ground (mu)	Artificial pasture (mu)	Famland (mu)	Forest Land (mu)	abandone d land (mu)	Orchard (mu)	Oven (set)	Toilet (set)	Stove (set)	Fencing wall (m)	Cellarag e(set)
1	Yiming/Kadeer	m	3	42	206.16			595.2						18.38	2	1	4	850	2
2	Abuduli/Hasili	m	6	58	334.45			323		13.75	6				1	1	4	150	2
3	Maihesumu/Pazile	m	5	46	97.13		63	303.6	0.60	4.20				0.54			2	76	2
4	Aihaiti/Mahemuti	m	3	30	57.35	105.7					1.4						2		3
5	Kelimuhan/Yasen	f	4	46	166.5		24	767		1.29	1.08	0.5			1		4	110	1
6	Momin/Kadeer	m	4	46	127					1.26					1	1	2		1
7	Renbi/Aibibu	m	5	45	391		60	544			0.55	0.56		1.29	1		4	270	1
8	Shukeer/Tiyipu	m	6	23	195.5			200		5.74	2.04		2.97		1		5	359	2
9	Simayi/Maitiniyazi	m	7	69	154.81		38	238	0.32	8.82	3.05			1.16	1	1	5	505	
10	Nayiti/Wushuer	m	7	56	243.69	75	15	498.49					0.3			1	6	188	2
11	Rexiti/Simayi	m	3	32	84.5			90							1		1		
12	Abudureyimu/Simayi	m	4	39	119			44							1		2		1
13	Mahemuti/Pazili	m	7	59	300.47			273							1		3	120	1
14	Ailehong/Abuduli	m	4	33	75										1	1	2		2
15	Wumaierjiang/Aniwaer	m	4	33	40												1		1
16	Simayi/Balati	m	5	57	484			616							1		10	250	1

Table 3-3. Private Properties to be Inundation-Impacted by Ertanggou Reservoir

No.	housemaster	Sex	popul ation	age	Barnacl e house (m <sup>2</sup> )	Clay- wood house (m <sup>2</sup> )	Sub- house (m <sup>2</sup> )	Sheds/st ables (m <sup>2</sup> )	Threshing ground (mu)	Artificial pasture (mu)	Famland (mu)	Forest Land (mu)	abandone d land (mu)	Orchard (mu)	Oven (set)	Toilet (set)	Stove (set)	Fencing wall (m)	Cellarag e(set)
17	Sherepu/Wusiman	m	4	61	94			160							1		4	200	2
18	Baikeli/Sulutan	m	4	43	96			150							1		1		1
19	Bake/Nayiti	m	3	28	70			150											
20	Rousitanmu/Aibibu	m	9	32	207.6			600							1	1	4		
21	Saimaiti/Abudureheman	m			487			350							1		2		1
22	Maimaiti/Yiming	m			60		16	400										120	
23	Aili/Naiwuli	m			289			208										108	1
24	Shalamu/Abula	m			35			210											

Table 3-4. Collective Properties to be Inundation-Impacted by Ertanggou Reservoir

No.	Items	House (m <sup>2</sup> )	Ownership	Remarks
1	School	138.5	Collective	basketball court 450m <sup>2</sup> □ backboard one set
2	House for Public Service	40	As above	

### 3.6. Institutions to be Impacted

There is no public institution in the inundation area of Ertanggou Reservoir. No public institution will be impacted.

### 3.7. People to be Impacted

#### 3.7.1. People to be Impacted Directly

The construction of Ertanggou Reservoir will directly impact 77 people in 16 households (all Uyгур people).

#### 3.7.2. People to be Impacted Indirectly

Ertanggou Villager Group of Qialekan Village is located remote in the mountainous areas. Due to frequent natural calamities, backward mode of production, simple structure of animal husbandry and poor situation of education and technological development, the livelihood of the herdsmen is generally at low level. The inundation-impacted villagers (or resettlers) are not yet access to electricity and telecommunication. There are 97 people of 20 households in this group (all Uyгур people). 20 people in 4 households are living above the inundation line (or resettlement line). After the project implementation, the roads will be inundated and these 20 people will have difficulties in the accessibility to schooling and medical care. Therefore, these 20 people are also included into the resettlers (Table 3-3). As can be observed in Table 3-3, 24 households (housemaster names) are listed. Among them, 97 people in 20 will be inundation-impacted. The other 4 households will look after the livestock, houses and sheds/stables. Although the major houses and civil registration of these 4 households are in Qialekan village, they are not living in the inundation-impacted area. Therefore, only their houses and sheds/stables have been surveyed and recoded, but they are not integrated into the resettlement program.

#### 3.7.3. Vulnerable Groups

In the project area, women enjoy the same rights and conditions as men, and there is no need to provide them with special treatment. The vulnerable groups in the project refer to disabled people, single and childless aged people, orphans and the people living under poverty line. They need special care.

In the process of RAP implementation, the vulnerable groups to be impacted by the project will be further identified according to the family member constitution, labor



and employment status, household resources and other impersonal conditions. In addition, the above evaluation will be further confirmed by the materials in the sector of civil affairs. In the process of RAP implementation, the impacted households that have been confirmed as vulnerable groups through the above procedures will enjoy special help. There are 24 people in 9 households (in addition to one disabled person) have been identified as in vulnerable groups in the inundation-impacted area by the construction of Ertanggou Reservoir. The details are illustrated in Table 3-5.

Table 3-5. Vulnerable Groups in the Inundation-Impacted Area by the Construction of Ertanggou Reservoir

Name	No. of Family Member	Per Capita Annual Net Income	Per Capita Monthly Subsidy	Monthly Release
Xielipu/Wusiman	2	400	45	90
Niyazihan/Maihemuti	1	300	55	55
Muteli/Maihemuti*	1	550	35	35
Keranmuhan/Yasen	4	685	35	140
Awahan/Keyimu	4	300	55	220
Selimuhan	2	300	55	110
Simayi/Maitiniyazi	4	580	35	140
Nayiti/Wushouer	3	580	35	105
Rousitamu/Haibibu	3	520	35	105

\* with one disabled family member

### 3.8. Impacted Things Fixed on Land

The things fixed on land to be inundation-impacted by Ertanggou Reservoir will include 1204 trees (535 fruit trees and 669 scattered trees). The details are illustrated in Table 3-6.

Table 3-6. The Properties on Land to be Inundation-Impacted by Ertanggou Reservoir

Category	Tree	Unit	Quantity	Remarks
Fruit trees	Subtotal	pc	535	Including 207 pc above the resettlement line
	Apricot	pc	138	
	Walnut	pc	352	
	Mulberry	pc	16	
	Peach	pc	5	
	Chinese Red Dates	pc	5	

	Grapes	pc	17	
	Apple	pc	2	
Other trees	Subtotal	pc	669	Including 34 pc above the resettlement line
	Elm	pc	322	
	Willow	pc	87	
	Poplar	pc	260	
Total		pc	pc	Including 241 pc above the resettlement line

### 3.9. Other Properties to be Impacted

#### (1) Ertanggou Hydrological Station

In the inundation-impacted area by Ertanggou Reservoir, there is one set of hydrological station. It is ranked in national Grade-3. The observation items of the station mainly include water level, discharge rate, suspending silts, air temperature, precipitation, evaporation and ice floating. According to Turpan Prefecture Bureau of Hydrology and Water Resources, this station should be reconstructed at a new site.

#### (2) Simple Roads

The simple roads here refer to 2.5 km of grazing channels. For this village with animal husbandry as the leading industry, these grazing channels are the major roads leading to the grassland in growing seasons. After the reservoir construction is completed, these channels will be inundated. Therefore, rehabilitation will be required.

#### (3) Cultural Relics and Historical Site

There are 20 sets of ancient tombs, one site of petroglyphs and one site of ancient inhabitancy ruins in the inundation-impacted area. According to Xinjiang Archaeological Institute, these cultural relics and historical sites should be excavated and protected.

#### (4) Inundation-Impacted Properties close to but outside the Resettlement Line

There are 20 people in 4 households living close to but outside the resettlement line. Their properties include 1950.29 m<sup>2</sup> of houses and 3559.49 m<sup>2</sup> of accessory structures (Table 3-8).

The details of inundation-impacted properties are summarized in Table 3-7.

Table 3-7. Summary of the Properties to be Inundation-impacted by Ertanggou Reservoir

No.	Items	Unit	Quantity	Remarks		
I	No. of Households	HH	20	Including 40 m <sup>2</sup> of house for public service, 138.5 m <sup>2</sup> of school rooms, 720 fruit trees, 90556 ordinary trees. The property of Maimaiti/Yiming of Lianmuxin Township include 60 m <sup>2</sup> of houses 16 m <sup>2</sup> of sub-house, 400m <sup>2</sup> of stables and 120m fencing walls.		
II	Population	person	97			
III	House	Subtotal	□		4774.36	
		Barnacle structure	□		4593.66	
		Clay-wood structure	□		180.7	
IV	Accessory Structure					
	1. Sub-house	Subtotal	□		216	
		Barnacle structure	□		216	
		Clay-wood structure	□			
	2. Stable	Subtotal	□		6720.29	
		Barnacle structure	□		6720.29	
		Clay-wood structure	□			
	3. Fencing Wall	Subtotal	m		3306	
		Barnacle structure	m		2654	
		Clay-wood structure	m		592	
		Wire Fence	m		60	
	4. Toilet		set		18	
	5. Cellarage (for vegetables)		set		27	
	6. Oven		set		17	
	7. Stove		set		68	
	V	Scattered Trees			pc	1204
		1. Scattered Trees	Subtotal		pc	535
Apricot			pc		138	
Walnut			pc		352	
Mulberry			pc		16	
Peach			pc		5	
Red Dates			pc		5	
Grapes			pc		17	
Apple			pc	2		
2. Scattered Trees		Subtotal	pc	669		
		Elm	pc	322		
		Willow	pc	87		
		Poplar	pc	260		
VI	Land		mu	1319.25		
	1. Farmland		mu	14.11		
	2. Plantation		mu	21.37		
	3. Artificial Pasture		mu	35.05		
	4. Natural Grassland		mu	700.00		
	5. Abandoned Farmland		mu	3.27		
	6. House Sites		mu	16.67		
	7. Threshing Ground		mu	0.92		
	8. Forest Land		mu	133.85		
	9. Barren Ground		mu	360.00		
VII	Special Structures					
	1. Hydrological Station		set	1		
VIII	2. Grazing Channel					
	Tomb		set	97.00		

Table 3-8. Inundation-Impacted Properties close to but outside the Resettlement Line

No.	Items		Unit	Quantity
I	No. of Households		HH	4
II	Population		person	20
III	House	Barnacle structure	m <sup>2</sup>	1950.29
IV	Accessory Structures			
	1. Sub-house	Barnacle structure	m <sup>2</sup>	80
	2. Shed/stable	Barnacle structure	m <sup>2</sup>	3479.49
	3. Fencing Wall	Barnacle structure	m	986
	4. Toilet		set	2
	5. Cellarage (for vegetables)		set	8
	6. Oven		set	5
	7. Stove		set	23
V	Scattered Trees		pc	241
	1. Scattered Trees	Subtotal	pc	207
		Apricot	pc	75
		Walnut	pc	101
		Mulberry	pc	2
		Peach	pc	5
		Red Dates	pc	5
		Grapes	pc	17
		Apple	pc	2
	2. Scattered Trees	Subtotal	pc	34
		Elm	pc	16
		Willow	pc	2
		Poplar	pc	16
	VI	Tomb		set

### 3.10. Analysis of Project Impacts

#### 3.10.1. Analysis of Project Impacts

The land requisition and the related objectives in the project construction are reflected mainly in the following aspects:

(1) Limited number of resettlers will be involved;

(2) The houses in the inundation-impacted area are mainly of stone- and wood structure with low quality;

(3) The people to be resettled are living in the conditions of low level of production and livelihood with poor infrastructures and social facilities;

(4) No property in kind will be impacted by the land requisition for the project construction; and

(5) The compensation budget for the inundation impact will amount for a small proportion in the total budget of the project construction.

The construction of Ertanggou Reservoir will impact the 97 people in 20 households in Qialekan Village with inundating 14.11 mu of farmland, 133.85 mu of forest land, 21.37 mu of fruit plantations, 35.05 mu of artificial pasture and 700 mu of natural grassland. The inundation-impacted area of farmland, fruit plantation, forest land, natural grassland amounts for 0.16%, 0.08%, 0.06% and 0.03% of the total in Shengjin Township, respectively. The inundation-impacted property will be of small quantity. Therefore, the adverse impact of the project on the socio-economic situation in Shengjin Township will be very limited.

In spite of the fact that the construction of Ertanggou Reservoir will generate some adverse impact on a small part of Shengjin Township, the project construction will bring forth development and employment opportunities to Turpan City and Shanshan County. In the process of RAP implementation and in accordance with Shengjin Township Development Plan and governmental policies relevant, the construction of infrastructures and social facilities will be pushed forward to greatly improve the conditions such as of livelihood, transportation, education, culture and medical care in favor of the resettlers. The project construction will push forward the rapid development of building material industry and the tertiary industry in Turpan. In addition, the project will provide many business opportunities for the rural people in favor of the local economic development. Therefore, the benefit from the project construction is much more than the impact.

### **3.10.2. Analyzing Impact on Resettlement and Land Requisition**

The resettlement area in the project will be constructed on a piece of state-owned land. It is within the administration territory of Lianmuxin Township of Shanshan County in Turpan Prefecture. On the principle of territorial management, the resettlers will be put under the administration of Shanshan County. After the impacted people are resettled, the details of resettlement administration will be decided by the Government of Turpan Prefecture.

## **3.11. Analysis of Resettlement Risks**

### **3.11.1. Land Loss**

The construction of Ertanggou Reservoir will inundate 1350 mu of land, including 14.11 mu of farmland, 133.85 mu of forest land, 35.05 mu of artificial pasture, 21.37

mu of fruit plantations and 700 mu of natural grassland. The inundation-impacted area of farmland, fruit plantation, forest land, natural grassland amounts for 0.16%, 0.08%, 0.06% and 0.03% of the total in Shengjin Township, respectively. In spite of the fact that some land in Ertanggou will be impacted by inundation, 196 mu of farmland will be reclaimed at the resettlement area. The resettlers will have more farmland. The inundation-impacted property will be of small quantity. Therefore, the adverse impact of the project on the socio-economic situation in Shengjin Township will be very limited.

### **3.11.2. Unemployment**

The resettlers from the inundation-impacted area of Ertanggou Reservoir are people of animal husbandry. Most of the grassland and pastures are located above the scope of land requisition. The impacted grazing channels will be rehabilitated in favor of the normal practice of animal husbandry after the project implementation. Because the construction of resettlement area in both production rehabilitation and livelihood improvement will be at the same pace of the construction of Ertanggou Reservoir, there will be no problem of unemployment. Ertanggou Hydrological Station is equipped with 4 staff (i.e. 3 Hans and one ethnic person). They are working in shifts in the station. According to Turpan Prefecture Bureau of Hydrology and Water Resources, 3 months will be required for the reconstruction and rehabilitation of the station. Then, the working shift of one staff will be impacted together with the salary. The project office will consider this, and the impacted staff will be paid in the budget line of contingency.

### **3.11.3. House Demolishment**

The construction of Ertanggou Reservoir will be at the same pace of the construction of the resettlement area. According to the construction schedule, the construction period of Ertanggou Reservoir will be 3 years, and the house demolishment together with resettlement will begin in the first half of the 3<sup>rd</sup> year. The old materials from the house demolishment will belong to the original owner.

### **3.11.4. Loss of Social Service**

Qialekan Village of Shengjin Township has 354 people in 88 households with total farmland of 300 mu. As a sub-village of Qialekan Village, Ertanggou Villager Group with 97 people in 20 households to be inundation-impacted is located in mountains depending on animal husbandry. The number of households, population and farmland to be inundation-impacted will amount for 22.73%, 27.40% and 23.51% of the total in Qialekan Village, respectively. Analysis showed that the inundation will generate some loss to Ertanggou Village but the impact will be very limited. Therefore, the social service in Shengjin Township or Qialekan Village will be impacted.

### **3.11.5. Damage to the Local Society**

The people to be resettled due to the inundation of Ertanggou Reservoir are the

herdsmen living in the mountains at some isolated condition, and all of them will be resettled. Therefore, there will be no damage to the social stability or socio-economic development.

## **4 Legal and Policy Framework**

### **4.1 Laws and Policies Relevant to Resettlement**

#### **4.1.1 National Laws and Regulations**

- (1) Law of the People's Republic of China on Regional National Autonomy (effective as of Feb. 28, 2001)
- (2) Law of the People's Republic of China on Land Administration (revised on Aug. 28, 2004)
- (3) Regulations for Implementation of the Law of the People's Republic of China on Land Management (effective as of Jan. 01, 1999)
- (4) Forest Law of the People's Republic of China (effective as of July 01, 1998)
- (5) Grassland Law of the People's Republic of China (effective as of March 01, 2003)
- (6) Tentative Regulations for Collection of Arable Land Occupancy Tax of the People's Republic of China (effective as of Jan. 01, 2008)
- (7) Detailed Rules for Implementation of the Tentative Regulations for Collection of Arable Land Occupancy Tax of the People's Republic of China (Document No. 49 jointly issued by MOF and National Tax Administration)
- (8) National Norms for House Property Measurement of the People's Republic of China (GB/T17986.1-2000)
- (9) Regulations for Land Acquisition Compensation and Resettlement for Construction of Big and Medium Size Water Resources and Hydropower Projects (State Council Decree No. 471)
- (10) Circular on Issues Relevant to Land Uses by Water Resources and Hydropower Projects (Document No. □2001□355 issued by Ministry of National Land Resources)
- (11) Circular on Distribution of the 'Management Method on Collection and Usages of Forest and Vegetation Recovery Fees' (Document No. □2002□73 issued by MOF and National Forestry Bureau)
- (12) Norms for Design of Land Acquisition and Resettlement for Construction of Water Resources and Hydropower Projects (SL290-2003)
- (13) Circular of NDRC on Strengthening Management on Setting " Price Contingency" in the Cost Estimation of Big and Medium Size Infrastructure Construction Projects (NDRC Document No. □1999□1340 )



(14) Classification of Current Land Uses (GB/T21010-2007 )

(15) Standards for Township Planning (GB50188-2007 )

#### **4.1.2 Regulations Issued by the Regional Government**

(1) Method to Implement the Law of the Republic of China on Land Management in Xinjiang Uygur Autonomous Region (effective as of October 01, 1999)

(2) Circular by Xinjiang DRC ((Development and Reform Commission) and Finance Bureau on Distribution of the Standard for Administrative Charging for Land Management by Xinjiang Land Resources Management System (Xinjiang DRC Document 2001 No. 500)

(3) Circular by Xinjiang Forestry Bureau on Distribution of the Circular by State Forestry Administration on Strengthening Management on Review and Approval of Forest Land Acquisition and Occupancy in Line with the Law (Xinjiang Forestry Bureau Document No. □2005□225)

(4) Implementation Method for Collection of Arable Land Occupancy Tax in Xinjiang Uygur Autonomous Region (effective as of September 09, 2008)

(5) Schemes for Implementation of Supportive Policies for Late Stage Resettlement of Construction of Big and Medium Size Reservoirs in Xinjiang Uygur Autonomous Region

#### **4.1.3 World Bank Policies**

World Bank OP 4.12 “ Non-voluntary Resettlement” and its annexes (effective as of January 01, 2002).

### **4.2 Relevant Laws and Regulations**

#### **4.2.1 Provisions in the Law of the People’s Republic of China on National Autonomy**

Adopted at the Second Session of the Sixth National People’s Congress in 1984□the Law stipulates establishment of national autonomous areas and the powers the organs of self-government of the national autonomous areas shall exercise in addition to the powers of equivalent local governmental authorities, including:

- autonomous legislative power;
- self-management on local political affairs;
- self-management on local economic development;
- self-management on local scientific, educational and cultural development;

- autonomous organization of local public security forces;
- autonomous use and development of their own spoken and written languages;
- autonomous rights in training and recruiting cadres of minority nationalities.

Article 11 The organs of self-government of national autonomous areas shall guarantee the freedom of religious belief to citizens of the various nationalities. No state organ or public organization or individual may compel citizens to believe in or not to believe in, any religion nor may they discriminate against citizens who believe in or do not believe in any religion.

The state shall protect normal religious activities. No one may make use of religion to engage in activities that disrupt public order or impair the health of citizens or interfere with the educational system of the state.

#### **4.2.2 Provisions in the Law of People's Republic of China on Land Administration**

##### Ownership and Right of Use of Land

###### Article 8

Land in urban districts shall be owned by the State.

Land in the rural areas and suburban areas, except otherwise provided for by the State, shall be collectively owned by farmers, including land for building houses, land and hills allowed to be retained by farmers.

###### Article 10

Lands collectively owned by farmers and allocated to villagers for collective ownership according to law shall be operated and managed by village collective economic organizations or villagers' committee; lands allocated to two or more farmers' collective economic organizations of a village, shall be operated and managed jointly by the collective economic organizations of the village or villagers' groups; and those allocated to township (town) farmers' collectives shall be operated and managed by the rural collective economic organizations of the township (town).

###### Article 11

People's government at the county level shall register and put on record lands collectively owned by farmers and issue certificates to certify the ownership concerned.

People's government at the county level shall register and put on record the use of land collectively owned by peasants for non-agricultural construction and issue certificates to certify the right to use the land for construction purposes.

People's government at the country level shall register and put on record uses of land owned by the State by units or individuals and issue certificates to certify the right of use. The State Council shall designate specific units to register and put on record State-owned land used by central government organs.

Certifications of ownership or use right of wooded land and grassland and the uses or of water surface and beach land for breeding purpose shall be managed according to related provisions of the "Forest Law of the People's Republic of China", the "Grassland Law of the People's Republic of China" and the "Fisheries Law of the People's Republic of China".

#### Article 12

Changes of owners and usages of land, should go through the land alteration registration procedures.

#### Article 13

The ownership and use right of land registered according to law shall be protected by law and no unit or individual is eligible to infringe upon it.

#### Article 14

Land collectively owned by farmers shall be contracted out to members of the collective economic organizations for use in crop farming, forestry, animal husbandry and fisheries production under a term of 30 years. The contractees should sign a contract with the correspondents contractor to define each other's rights and obligations. Farmers who have contracted land for operation are obliged to use the land rationally according to the purposes agreed upon in the contracts. The right of operation of land contracted by farmers shall be protected by law.

Within the validity term of a contract, the adjustment of land contracted by individual contractors should get the consent from over two-thirds majority vote of the villagers' congress or over two-thirds of villagers' representatives and then be submitted to land administrative departments of the township (town) people's government and county level people's government for approval.

#### Overall Plans for Land Utilization

#### Article 19

Overall plans for land use should be mapped out according to the following principles:

- (1) Strictly protect the basic farmland and control the occupation of agricultural land for nonagricultural purposes.
- (2) Raise the utilization rate of land.
- (3) Make an overall plan and arrangements about the use of land in various kinds and various areas.
- (4) Protect and improve the ecological environment to ensure a sustainable use of land.
- (5) Keep a balance between cultivated land occupied and cultivated land developed and reclaimed.

#### Article 22

The amount of land used for urban construction shall conform to the standards prescribed by the State so as to make full use of the existing land for construction purposes, not to occupy or occupy as less agricultural land as possible.

Urban general planning and the planning of villages and market towns should be in line with the general plans for land use. The amount of land for construction use in the urban general planning and the planning of villages and market towns shall not

exceed the amount of land used for construction purposes in cities, villages and market towns fixed in the general plans for the utilization of land.

The land for construction purposes in cities, villages and market towns within the planned areas of cities, villages and market towns shall conform to the city planning and the planning of villages and market towns.

#### Article 24

People's governments at all levels shall strengthen the administration of plans for land use and exercise control of the aggregate land for construction purposes.

#### Article 26

Revision of the general plans for land use shall be approved by the original organ of approval. Without approval, the usages of land defined in the general plans for the utilization of land shall not be changed.

Whereas the purpose of land use defined in the general plans for the utilization of land needs to be changed due to the construction of large energy, communications, water conservancy and other infrastructure projects approved by the State Council, it shall be changed according to the document of approval issued by the State Council.

If the purpose of land defined in the general plans for the utilization of land needs to be changed due to the construction of large energy, communications, water conservancy and other infrastructure projects approved by provinces, autonomous regions and municipalities, it shall be changed according to the document of approval issued by the provincial level people's governments if it falls into their terms of reference.

#### Protection of Cultivated Land

#### Article 31

The State protects the cultivated land and strictly controls the conversion of cultivated land into non-cultivated land.

The State fosters the system of compensations to cultivated land to be occupied. In the cases of occupying cultivated land for non-agricultural construction, the units occupying the cultivated land should be responsible for reclaiming the same amount of land in the same quality as that occupied according to the principle of "reclaiming the same amount of land occupied. Whereas units which occupy the cultivated land are not available with conditions of reclamation of land or the land reclaimed is not up to requirements, the units concerned should pay land reclamation fees prescribed by provinces, autonomous regions and municipalities for reclaiming land for cultivation the land reclaimed.

#### Article 32

The local people's governments at and above the county level may demand units which occupy cultivated land to use the topsoil of the land occupied for use in the newly reclaimed land, poor land or other cultivated land for soil amelioration.

#### Article 33

People's governments of all provinces, autonomous regions and municipalities shall strictly implement the general plans for the utilization of land and annual plan for the use of land, adopt measures to ensure not to reduce the total amount of cultivated land

within their jurisdictions. Whereas reductions occur, the State Council shall order it to organize land reclamation within the prescribed time limit to make up for the reduced land in the same quantity and quality and the land administrative department of the State Council shall, together with agricultural administrative department, examine and accept it.

Whereas individual provinces and municipalities find it difficult to reclaim enough land to make up for the land occupied due to scarce reserve resources, the total amount of land due to be reclaimed in their own regions may be reduced with the approval of the State Council but the rest of land for reclamation shall be made up for elsewhere.

#### Article 36

Land shall be used sparingly for non-agricultural construction purposes. Whereas wasteland can be used, no cultivated land should be occupied; whereas poor land can be used, no good land should be occupied.

#### Article 41

The State encourages land consolidation. People's governments of counties and townships (towns) shall organize rural collective economic organizations to carry out comprehensive consolidation of fields, water surface, roads, woods and villages according to the general plans for the utilization of land to raise the quality of cultivated land and increase areas for effective cultivation and improve the agricultural production conditions and ecological environment.

Local people's governments at all levels shall adopt measures to ameliorate medium- and low-yielding land and consolidate idle and scattered and abandoned land.

#### Article 42

Whereas land is damaged due to digging, cave-in and occupation, the units or individuals occupying the land should be responsible for reclamation according to the relevant provisions of the State; for lack of ability of reclamation or for failure to meet the required reclamation, land reclamation fees shall be paid, for use in land reclamation. Land reclaimed shall be first used for agricultural purposes.

### **4.2.3 Relevant Provisions in the "Method to Implement the Law of the People's Republic of China on Land Administration" Issued by Xinjiang Uygur Autonomous Region**

#### Chapter 1 General Provisions

##### Article 2

This Method must be observed in carrying out activities relating to protection, development and utilization, supervision and management of land resources within the territory of Xinjiang Uygur Autonomous Region.

##### Article 6

The state introduces the system of compensated use of land owned by the State. No unit or individual is allowed to occupy, trade or illegally transfer land by other means.

governments at all levels should manage to make an overall plan for the use of land to strictly administer, protect and develop land resources and stop any illegal occupation of land.

## Chapter 2 Ownership and Right of Use of Land

### Article 8

Users of state-owned land and owners and users of collectively owned land should register to the land administrative departments at above county government level to obtain certificates for use of state-owned land or for use and ownership of collectively owned land.

## Chapter 4 Protection of Cultivated land and Reclamation of Land

### Article 20

The Regional Government introduces the system of compensated land use. In the cases of occupying cultivated land for non-agricultural construction, the units occupying the cultivated land should be responsible for reclaiming or supplementing through land improvement the same amount of land of the same quality as that occupied; Whereas units that occupy the cultivated land are not available with conditions of reclamation of land or the land reclaimed is not up to requirements, the units concerned should pay land reclamation fees of 15000—45000 Yuan per hectare for reclamation of new land.

### Article 21

In the cases of basic farmland occupancy approved in accordance with law, the payment made for land reclamation shall be 150% of the payment made for common cultivated land occupancy.

### Article 25

Reclamation of the following types of land shall be strictly prohibited:

- (1) land in areas that are defined with reclamation ban in the overall land use plan;
- (2) Natural clipping pasture, sown pasture, fenced pasture and good quality grassland;
- (3) Forest land and beach land of rivers and lakes;
- (4) Sloping land with slope of more than 25 degrees and sandy wasteland at the edge of the sandbank;
- (5) Land in areas of disputed ownership.

## Chapter 5 Land for Construction Purposes

### Article 31

Whereas occupation of land for construction purposes involves the conversion of agricultural land into land for construction purposes, the following examination and approval procedures shall apply:

- (1) For occupying land for purposes of construction of village enterprises, village level infrastructures, public facilities, rural roads, water structures within the village or township territory of construction land defined in their overall land use plan and for construction of villagers' houses within the territory of land collectively owned by the farmers, approval by the prefecture, city governments or prefecture administration according to controlling limitation as defined in their annual land use plan shall be required;
- (2) For the purposes of implementing the overall land use plan within the urban construction land areas, the land occupancy shall be approved by the regional autonomous government. In the cases of approval by the State Council for land

occupancy according to the law and regulations shall be required, the law and regulations shall govern.

#### Article 35

Land acquisition for national construction purposes shall be compensated according to the following standards:

- (1) Acquisition of basic farmland, the compensation shall be 8 to 10 times of the annual production value of the local cultivated land;
- (2) Acquisition of irrigated cultivation land, fish pond other than basic farmland, the compensation shall be 7 to 9 times of the annual production value of the local cultivated land;
- (3) Acquisition of dryland other than basic farmland, the compensation shall be 7 to 8 times of the annual production value of the local cultivated land;
- (4) Acquisition of forest land, sown grassland, housing building land, rural roads and threshing floor spaces, the compensation shall be 6 to 7 times of the annual production value of the local cultivated land;
- (5) Acquisition of natural pastures, the compensation shall be 6 times of the annual production value of the local cultivated land.

For acquisition of land referred to in Items (1) through to (4) of the preceding paragraph for purposes of construction of big size projects including transportation and water resources development projects, the compensation shall be made as 6 times of the annual production value of the local cultivated land.

Annual production value of cultivated land and grassland of various types shall be taken as the average of those annual production values in the previous three years, and shall be publicized regularly by the regional people's government.

#### Article 36

The green crops and ground attachments on the land acquired shall be compensated using the following standards:

- (1) Compensation for green crops of a common type shall be the average annual production value of the previous three years of the specific crop, for green crops of a perennial root crop type, the compensation shall be 2 to 3 times of the average annual production value of the previous three years of the specific crop;
- (2) Buildings, constructed structures, other facilities and trees on the land acquired shall be compensated according to actual losses and relevant regulations.

In the cases of relocating tombs on the land acquired, the local government shall make an announcement for relocation within a time limit and pay for the relocation according to relevant regulations; tombs that are not relocated within the time limit or are ownerless shall be relocated by relevant department of the local government.

#### Article 37

Resettlement compensation fee for cultivated land acquisition shall follow the standards as defined in Item 2 of Article 47 of the Law of P. R. China on Land Administration. In the cases of per capita cultivated land occupation of the people whose cultivated land is to be acquired is less than 0.1 ha before the acquisition, compensation for the resettlement can be appropriately increased, as long as the total of the land compensation and resettlement compensation does not exceed 30 times of the average annual production value of the three years prior to the acquisition.

Resettlement compensation for acquisition of fish pond space shall be made according to the compensation standards for adjacent cultivated land. Resettlement compensation for acquisition of forest land and grassland shall be calculated according to calculation of resettlement compensation for cultivated land. For acquisition of house building land, rural roads, threshing ground, no resettlement compensation shall be made.

#### Article 39

For acquisition of land owned by rural collective economic organizations, the land compensation shall go to the rural collective economic organization; compensation for the ground attachments and green crops on such land shall go to the owners of the ground attachments and green crops.

Rural collective economic organizations shall make public to its members the receipts and expenditures of the land compensation fees for land requisitioned and accept their supervision. It is forbidden to embezzle or divert the land compensation and other related payments to the units or organizations whole land is requisitioned.

#### Article 40

In the cases of rural collective economic organizations organize and take responsibilities to resettle the people of the units or organizations whose land is requisitioned, the resettlement compensation shall go to the rural collective economic organization and shall be managed and utilized by the rural collective economic organization; if other unit makes arrangements to resettle the people, the resettlement compensation shall go to the unit. In cases of no unified resettlement is needed, the resettlement compensation shall be allocated to the individuals to be resettled or be used to pay their insurance premiums after having obtained consent of the individuals. Resettlement compensation should be used for the specified purposes, no appropriation is allowed.

Governments at the city, county and township levels should strengthen supervision on use of the resettlement compensation.

#### Article 46

Areas for rural house building of the villagers shall be defined according to the following standards( calculation of per capita cultivated land is based on county unit):

- (1) House building land should be within 200 m<sup>2</sup> per household in areas with per capita cultivated land occupation less than 0.04 ha;
- (2) House building land should be within 300 m<sup>2</sup> per household in areas with per capita cultivated land occupation less than 0.07 ha but more than 0.04 ha;
- (3) House building land should be within 400 m<sup>2</sup> per household in areas with per capita cultivated land occupation less than 0.1 ha but more than 0.07 ha;
- (4) House building land should be within 500 m<sup>2</sup> per household in areas with per capita cultivated land occupation less than 0.14 ha but more than 0.1 ha;
- (5) House building land should be within 600 m<sup>2</sup> per household in areas with per capita cultivated land occupation less than 0.34 ha but more than 0.14 ha;
- (6) House building land should be within 800 m<sup>2</sup> per household in areas with per capita cultivated land occupation more than 0.34 ha.

The area for house building using unused land can be appropriately increased, but the maximum increase should not go beyond more than 1 time of the area prescribed in the previous items.



#### **4.2.4 Implementation Method for Collection of Arable Land Occupancy Tax in Xinjiang Uygur Autonomous Region (Regional Government Order No. 159)**

This Method stipulates that unit or individual that occupies arable land for house construction or non-agricultural construction shall be tax payer of arable land occupancy, and should pay the tax in line with the Regulations and this Method. Actually occupied arable land area shall be used as the basis for the tax calculation and the tax shall be collected in one lot based on the amount applicable. The area of actual arable land occupancy includes both approved and unapproved arable land occupancies.

Standards of tax per square meters for arable land occupation in the prefectures/cities of Xinjiang are defined as follows: 30 Yuan in Urumqi; 20 Yuan in Changji Prefecture, Shihezi City, Karamay City, Turpan Prefecture, Wujiaqu City; 18 Yuan in Bayangol Prefecture, Aksu Prefecture, Hami Prefecture, Alaer City; 15 Yuan in Ili Prefecture, Tacheng Prefecture, Altay Prefecture, Bortala Prefecture; and 10 Yuan in Kash Prefecture, Hotan Prefecture, Kirzilsu Prefecture and Tumusuke City.

Proper increase of the tax standard for economic and technical development zones, high-tech development zones, economic trade zones, agricultural gardens/parks and areas with very little per capita arable land, but the increase should not exceed 50% of the tax applicable in the local area.

Tax for occupation of basic farmland should be 50% more than the tax applicable in the local areas as stipulated in the previous paragraph.

#### **4.2.5 Relevant Regulations in Document No. (2001) 500 Jointly Issued by Xinjiang DRC and Finance Bureau**

Table 2. Indexes for Calculation of Grassland Compensation (Unit□ Yuan/mu)

Level	Compensation Indexes	Classification		
		Good and Fair	Medium	Poor
1		328	262	120
2		262	148	88
3		136	96	63
4		80	69	50

Table 4. Compensation Standards for Arbor and Economic Trees

Varieties	Items	Unit	Size of the Trees (Chest Diameter, cm)	Compensation Standard (Yuan)
Broad Leaved Forest	Per Trunk		<5cm	10—15
	Per Trunk		5-15cm	15—25
	Per Trunk		15-30cm	25—35
	Per Trunk		>30cm	45
Coniferous Forest	Per Trunk		<5cm	20—30
	Per Trunk		5-15cm	30—50
	Per Trunk		15-30cm	50—70
	Per Trunk		>30cm	90
Fruit Trees	Per Trunk		<5cm	20—40
	Per Trunk		5-15cm	40—60
	Per Trunk		15-30cm	60—100
	Per Trunk		>30cm	120
Grapes	Per Cluster		Less than 3 years and without fruits	30—70
	Per Cluster		More than 3 years and with fruits	70—110

Note□ Compensation for trees in protected forest land will be 50% more than trees in ordinary forest land.

## **5 Resettlement Action Plan**

### **5.1 Guidelines and Principles for the Resettlement**

#### **5.1.1 Guidelines for the Resettlement**

The guidelines for resettlement are: “Respect to the folkways, production and living customs of the local people to be resettled, fully consider their wishes and locally available natural resources, including land resources within the original townships or villages, resettle people in agricultural sector mainly involving crop planting as their major production activity provide them with land, instead of changing the way people live and their production methods or transferring them into non-agricultural residents. Create conditions for the resettled people to conduct activities of second or tertiary sector along with development of local township or village”. Generally speaking, resettlement should be based on provision of essential physical subsistence to the people to be resettled and allow for potentials for future development, and should focus on full use of advantages of local land resources for development-oriented resettlement, so that long term stability and can be achieved.

#### **5.1.2 Principle for Resettlement Planning**

- (1) Combining compensation and subsidy prior to the resettlement with support to production after the resettlement, so as to ensure people resettled gradually reach or exceed their original living standard and production level;
- (2) Combining resettlement with local construction, resources development, economic development and environmental protection. Practical measures to resume livelihood and production of the resettled people should be decided based on local circumstances, and an economic system that enables the people resettled to self-depend and earn their own living should be established, together with a social system of self-service and self-development, necessary conditions for establishing a social security system should be created.
- (3) Coordinating resettlement plan, local land resources renovation and national economic and social development plans; having overall planning and consideration of all factors and properly dealing with interests of the nation, collectives and individuals;
- (4) Resettlement planning should be based on physical indexes of land acquisition and demolition using the compensation standards;
- (5) Construction scales and standards for resettlement projects should follow the principle of resuming the original scale and standards, and the investment planned for the resettlement purpose should be adequate without leaving any gap in the cost estimate. Additional investments needed to allow for extended construction scale or

upgraded construction standards or to meet the required standards stipulated in the long term plan should be provided by local governments and relevant departments.

(6) Resettlement arrangement should be based on local conditions and make full use of community resources, with consideration of land saving and economical feasibility.

(7) In planning for the layout of resettlement areas, the principle of “favoring production and making life easier for the people involved” should be followed.

## **5.2 Tasks and Objectives of the Resettlement**

### **5.2.1 Objectives and Standards of the Resettlement Plan**

The overall objectives of resettlement plan is to improve living conditions of the people to be resettled, provide proper arrangements for laborers including their production employment opportunities, ensure that their livelihood can be improved or at least maintained compared with the original level.

According to the economic growth indexes defined in the 10<sup>th</sup> Five Year Plan for National Economic and Social Development and Long Term Development Objectives for Year 2010 of Shanshan County and Turpan City and based on the current living and production status of the people located at the dam site, the resettlement objectives are set as follows:

(1) Ensure basically per capita arable land of the people of no less than 2 mu, house building land per household of no less than 1 mu, livestock and poultry raising land of no less than 1 mu;

(2) Since in 2007 the per capita net income of people in the project impacted area, or Ertanggou area of Qialekan Village, Shengjin Township, was 3643 Yuan, the per capita income of the resettled people is planned to at least reach the per capita net income of people in that area in 2011 or a higher income level;

(3) In the resettlement areas, conditions of public infrastructures, schools, medical care, social welfare and transportation facilities, as well as natural environment, should all be improved to some extent compared with those before the resettlement.

### **5.2.2 Definition of Base Year and Planning Year of the Resettlement Plan**

To protect interest of the people to be resettled and reduce their losses, the resettlement plan should be consistent with the construction schedule of the main body of the construction project. According to construction schedule of the main body of Ertanggou Reservoir, Year 2008 is set as the base year of the resettlement design and Year 2011 as the planning year of the resettlement.

### **5.2.3 Tasks of the Resettlement**

In the base year of resettlement for the reservoir, people to be resettled are those located in the inundated area of the reservoir, totally 97 of 20 households. According to annual statistics of Year 2007 of Shengjin Township, the natural population growth was 15%, so in the planning year, the total amount of people to be resettled in the planning year shall be 103 in 21 households.

### **5.3 Analysis of Environmental Bearing Capacity of the Resettlement**

Permanent cultivated land acquisition of the construction project (mainly impacted by inundation of the reservoir) is located in the valley basin in front of the dam and the on the terraces on the left bank of the Ertanggou River, and the end of the upstream edge of the reservoir will only inundate barren rocks.

Ertanggou Reservoir is a major water resources project in Turpan Prefecture. Turpan Prefecture Government organized Turpan City Government and Shanshan County Government and relevant departments to conduct field surveys to the sites for resettlement of Ertanggou Reservoir, collect social and economic, detailed land use, statistical year book data of the local places, understand the amount of land available for the resettlement. The surveys reached the villagers' groups for the purpose of understanding the current status of land resources, population, agricultural production, basic infrastructures including water supply, electricity and road facilities, as well as social development status including aspects of culture, education and sanitation, so as to analyze the environmental bearing capacity of those sites for resettlement purpose. Based on opinions of the people to be resettled, the resettlement site is finally determined to be located at 43°7'51.5" N, 89°58'40.3"E, a site in the east of the Bakaner Natural Village (or Villager Group 2) of No. Production Brigade of Lianmuqian Township of Shanshan County.

The people to be resettled with production opportunities who are now in the planned inundation area of Ertanggou Reservoir are all in animal husbandry sector, and in the planning year totally 103 people are to be resettled. Land available for development in the resettlement area totals around 30000 mu and can be used by the people to be resettled for production and development, with the consent of the land resources department. According to resettlement objectives designed, the net total area of land that needs to be developed will be 248 mu, including net arable land of 206 mu, net area for housing building of 42 mu. Areas for farmland shelter trees, tertiary and field canals/ditches, tractor roads, farm roads, and for roads in residential areas shall be allocated according relevant design standards. Per capita production land of 2 mu shall be used as the resettlement standard for the people to be resettled in animal husbandry sector.

The above analysis indicates adequate land bearing capacity in the resettlement area and that the people to be resettled in animal husbandry sector can all be resettled in that area. The scattered people can form a new natural village.

In analyzing land bearing capacity analysis, the following aspects have also been analyzed:

- ① Characteristics of the people to be resettled and man-land relationship: Within the land acquisition area for Ertanggou reservoir construction there are only Uygur residents, residents of other ethnic nationalities are not found. The Uygur residents have their own language, characters and customs. In order to minimize impacts of land acquisition on their production and living habits and social relationship, the resettlement site is located at a place that is to the west of the Bakaner Village, which is the nearest Uygur habitation area and not far away from the inundation area.
- ② Conditions of Production and Living Infrastructures
  - a) Access road: Construction of Ertanggou reservoir will cause some inconvenience on transit of the local residents, but the project design includes corresponding engineering measures to ensure easy transit around the dam site area, and access roads are planned in the resettlement area to link it to the outside. Therefore, transportation condition won't be a constraint to environmental bearing capacity.
  - b) Water uses: From time immemorial the people to be resettled for construction of Ertanggou reservoir have been using water from Ertanggou River, in the resettlement area wells shall be drilled for their drinking water uses and their irrigation water shall be diverted from Ertanggou River. Therefore, water source and water availability shall not become constraints to environmental bearing capacity of the resettlement area.
  - c) Electricity supply: Currently there is no electricity supply within the land acquisition impacted area of the planned Ertanggou reservoir, people there are now using solar energy for lighting. Connection with the electricity network (220v) existing in the nearby residential area is planned for the resettlement area, so there will no adverse impact on electricity use by the people to be resettled.
  - d) Medical care, education conditions: Currently there are no medical care or education service facilities in the land area to be acquired by the planned reservoir. In the resettlement area, medical care and education facilities shall be established based on actual needs, so there won't be adverse impacts on medical care and education services to the people to be resettled.
- ③ Economic development potentials of the project impacted area

Land acquisition impacted area of Ertanggou reservoir is a village dominated by animal husbandry production, with plenty of by-products of animal husbandry sector and a great development potential. The future local economic development shall make full use of the local resources advantages and aim at improving production and living standards of the people to be resettled through developmental production, thus the environmental bearing capacity of the project impacted area shall be increased along with the local economic development.

### **5.3.1 Basic Situation of the Resettlement Area**

The resettlement area for construction of Ertanggou reservoir is located to the west of Bakaner Village, Lianmuqin Township, Shanshan County of Turpan Prefecture, being 15 km away from the reservoir site, 37 km from Lianmuqin Township(National Road No. 312), 6 km from the Lanzhou-Xinjiang railway, and about 1 km from Banbaner Village. The resettlement area has easy access to the main transportation road, and the elevation of the resettlement area is 961m.

Land of the resettlement area belongs to desert Gobi type and is owned by the state. Therefore, the allocation of land shall be free of charge. The resettlement area is about 1 km away from Bakaner Village that is inhabited all by Uygur people who usually communicate in Uygur language and believe in Islam and have identical customs with the people to be resettled.

## **5.4 Overall Plan for Resettlement**

### **5.4.1 Approaches to Be Used for the Resettlement**

Transportation and communication conditions in the project impacted area are poor and people there currently have inconvenient access to the outside and obstructed accessibility to information. The people to be resettled are of ethnic minority group and are currently engaged in animal husbandry production, most of them are found at a lower level of education degrees and working skills and only capable to undertake production activities relating to pasture husbandry. Therefore, based on consideration of all local factors, the approaches to be used for the resettlement are defined as: Based on consideration of all factors impacting the local area, the resettlement approaches to be used for the project shall not change the original production approach of the people to be resettled and, in order to solve the issues of grain ration and feed for animals in winter and upgrade income of the herding population (through fruit trees' planting), the people to be resettled will be provided with 2 mu of forage land per capita. In the new resettlement area, agricultural technicians will provide guidance and training to upgrade the production and working skillfulness of the herding population, and help them to save cost for grain ration and feed for winter uses by the animals, at the same time, labor export shall be organized during fallow season to help the herding people to be resettled to earn cash income.

It is understood through interviews with the people to be resettled, they have spring, autumn and summer pasture land for the animals, but winter pasture land. In order to ensure safety of the animals in winter, they need to herd the animals in the plain

agricultural areas from early November to next early February. Each household would have 2 to 3 people to do the herding, the costs for meals and accommodation the herding people and for the feed of the animals range from 3,000 Yuan to 10,000 Yuan. In addition to the above mentioned costs, they need to buy feed from the market during animal lambing period (March to April), and the cost is about 1,000 Yuan. Based on the above analysis, after project implementation, feed for winter uses by the animals can be provided within the resettlement area.

#### **5.4.2 Wishes of the People to Be resettled and Opinions of the Residents in the Resettlement Area**

Surveys to the people to be resettled and residents in the resettlement area indicated that most of the people were not willing to leave their original places, especially the local ethnic minority people clearly expressed their unwillingness to leave their homes, and that they wanted to be resettled within their original village or villagers' group, or at least not far away from their original residential areas. Turpan City Government organized relevant departments (including civil affairs bureau, Shengjin Township government, Qialekan Village, etc) to go to the sites having discussion meetings with the people to be resettled, 98% of the people to be relocated agreed (by signing) with moving to the resettlement area. After having reported the results of discussions to the Turpan Prefecture Government and Turpan City Government, the governments discussed and decided to resettle the people in the west of Bakaner Village of Lianmuqin Township, a place that is not far away from their original residential areas. The residents currently living in the resettlement area were consulted with such an arrangement, and they indicated their welcome to the people to be resettled.

Besides, construction of the project will not only increase irrigated area in the resettlement area, but also promote development of local economy while improving regional environment. Therefore, the people to be resettled and residents in the resettlement area are generally satisfied with the project.

### **5.5 Resettlement Plan**

#### **5.5.1 Resettlement Plan for the Rural People to be resettled**

According to wishes of the people to be resettled, they will be reallocated in cropping production sector based on farm land allocated to them (their main crops include alfalfa and corn); concentrated residential houses for them shall be built using unused land and the people shall be compensated as per the price for replacement of their original houses.

#### **5.5.2 Irrigation and Drinking Water Supply Plan**

In order to ensure supply of irrigation and drinking water to the people in the resettlement area, investment for construction of irrigation water supply structures for the resettlement area shall be included in the funding plan for land acquisition compensation.

Based on groundwater quality data of the area close to the resettlement area, drinking water for people and animal uses can be provided through drilling wells to abstract



groundwater. Water source for irrigation water can be diverted from Ertangou River through connecting to the irrigation canals of Bakaner Village. A water diversion canal with a total length of 818m (at tertiary level) is designed and shall be adequate to meet irrigation water requirement. The tertiary canal is designed as a lined canal (using wet masonry pebble). Rectangle lined quaternary level canals are also designed with a height of 0.45m and a width of 0.3m, as illustrated in the map of resettlement production plan.

### 5.5.3 Production Recovery Plan

For construction of the project, totally 103 people need to be resettled (in the planning year), and irrigated land planned to be developed totals 206 mu. In the resettlement production plan, a strip farm land (length x width =550m x 250m) is designed with shelter tree belts with a width of 6m and tractor roads with width of 6m, as illustrated in the map of project plan.

According to soil test data provided by Shanshan County Agricultural Technology Extension Center based on soil samples collected from the center of the resettlement area, soil salinity is 0.108, indicating that the soil belongs to slightly salinized soil but suitable for crops; total nitrogen content of the soil is 0.102%, and total phosphorus content is 0.151%, and total kalium content is 1.29%, and total organic content is 1.95%; all these parameters indicate the soil is basically suitable for growth of the crops, and through soil improvement, the quality of the soil shall be better. Soil samples from neighboring area to the resettlement area indicate that the soil salinity is 0.325, indicating the soil is slightly salinized but suitable for crops; total nitrogen content of the soil is 0.082%, and total phosphorus content is 0.075%, and total kalium content is 0.87% and total organic content is 1.18%, all these parameters indicate that the soil is marginally suitable for crop growth.

Soil test report of the resettlement area indicates that production recovery shall take certain period of time and investment for the land development is needed so as to reach the soil quality level in the original place and in Bakaner Village. Through preliminary estimate, funds needed for land development and auxiliary structures are as follows:

(1) Soil filling-up per mu and fund needed:  $401 \text{ m}^3$  height of filling up  $0.6\text{m} \times 666.7\text{m}^2$  per mu, and the soil taking area is 2 km away from the land development area, transportation fee is tentatively taken as 15 Yuan, then investment per mu for soil filling-up is 6015 Yuan;

(2) Land leveling fee: according to planning results, excavation amounts to  $53943.24\text{m}^3$  and soil-filling amounts to  $485489.15\text{m}^3$  for land leveling, then land leveling fee needed is 712105.75 Yuan;

(3) Funds for auxiliary structures: auxiliary structures needed include tertiary canal (818m in length) and quaternary canals for water diversion, shelter tree belts, tractor roads, etc. According to planning results, the tertiary canal needs investment of 236061.60 Yuan, shelter tree belts need investment of 4608 Yuan, and tractor roads need investment of 97920 Yuan;

(4) Farmhouse manure: 3 tons per mu are needed and the cost per ton is tentatively taken as 1000 Yuan.

#### **5.5.4 Other Production Recovery Measures**

In order for quick recovery and development of production and living of the people to be resettled, the following measures shall be taken:

- (1) During construction period of Ertanggou Reservoir, preferential consideration shall be given to people in the resettlement area in arranging labor export, and use of local building material and living material shall be given preferential consideration;
- (2) People to be resettled shall be given preferential treatment if there is labor export opportunity within the county, so that income of the people can be increased;
- (3) Living subsidies during initial resettlement period shall be given to the people resettled at the level of 600 Yuan per person per year for 3 years to subsidize their living during the initial resettlement period when the yield of newly developed land is low, bringing in low income and no income can be produced from the new grapeery before the grapes bear fruits, such subsidies shall be paid to the people resettled;
- (4) Agricultural technical training shall be strengthened, and technicians from the county agro-technical extension station shall be invited on an irregular basis to the resettlement area to hold training sessions introducing farming and animal raising techniques, so as to help to raise crop quality and productivity and animal selling quantity in a planned step by step approach, so as to increase economic income of the people resettled.

#### **5.5.5 Resettlement House Construction Plan**

##### **A. Selection of Locations for House Construction for the People to Be Resettled and Standard for House Construction**

Locations of houses for the people to be resettled in a concentration residential area are selected along both sides of the Ertanggou Road- Bakaner Village Road (new road). According to official approval document by Turpan Prefecture Government on the resettlement plan, residential houses for the people to be resettled are planned according to the standard of 2 mu per households, as illustrated in the sketch map of resettlement area.

## B. Plan of Land Leveling, Road Construction and Electricity and Water Supply for the New Residential Area

### a. Land Leveling

Since concentrated residential house construction shall be adopted for resettlement under the project, the people to be resettled can select unused land in the resettlement area as house construction bases. The geological condition of the resettlement area is good, house building can commence only with land leveling done. The people can build their houses in the concentrated area after land leveling done by themselves, and land leveling cost for house building is planned as 652.5 thousand Yuan in total.

### b. Basic Infrastructure

**Water Supply:** According to hydro-geological data of the resettlement area, drinking water supply can be solved by drilling wells to abstract ground water;

**Electricity Supply:** 220V power poles shall be set up to connect with the existing power supply net in the village close to the resettlement area and electricity can be supplied to each of the households.

**Education of children in the resettlement area:** Through consultation with relevant department, children in the resettlement area can go to the school in Bakaner Village (the distance from the resettlement area to the school is about 1 km); and additional education capacity charge is planned as 500 Yuan per capita and included in the resettlement investment;

**Medicare care:** Through consultation with relevant department, a clinic shall be established in the resettlement area. Scales of the communal house and clinic to be constructed is planned as 80 m<sup>2</sup> (brick and wood structure);

**Roads connecting to the outside:** Roads shall be constructed to connect Ertanggou Road with road in Bakaner Village, the road is 7m in net width and 3km in length, with asphalt facing. Tree belts are planned along both sides of the road (2.5m in width at each side).

**Broadcasting and TV coverage:** The people to be resettled can install receiving facilities to use the existing broadcasting facilities in the resettlement area, and use the existing TV signal receiving facilities in the resettlement.

## C. Housing Construction of the People to be Resettled

House construction of the people to be resettled should not only consider their living habits and adaptation to animal husbandry production, but also leave some room for

future development. The suggestion for house construction for the resettlement is the people to be resettled build their own houses after they dismantle the original houses. The project owner shall compensate the people to be resettled according to the structure, area of the original houses. The compensation shall be allocated phase by phase to the people to be resettled according to the progress of building material preparation and construction.

During house construction period, since the resettlement area is not near to the original housing area of the people to be resettled and it's inconvenient for the people to come and go every day, the resettlement management agency shall pay the people temporary accommodation subsidy (900 Yuan) to help them to seek temporary accommodation (by staying with their relatives or leasing houses). Such compensation shall be once-for-all payment to the people to be resettled.

#### D. Tomb Relocation and Construction

In the reservoir site there are also tombs (tombs of modern times) to be relocated, all of them are Uyгур tombs. The new site for the tombs is on a mesa that is 600 m to the south of the resettlement area. Relocation of the tombs shall follow the customs of the local Uyгур people. According to Uyгур customs, during tomb excavation and cover up, the owner shall invite an imam to recite Alcoran when the body is buried. After the cover up, the relatives shall gather at the house of the owner to have a small size ritual.

### **5.6 Objectives of the Resettlement**

Totally 103 Uyгур people in 21 households that are located in the inundation area of Ertanggou Reservoir shall be resettled. In the process of resettlement, national and regional laws, regulations and policies should be strictly observed to protect the legitimate rights of the people to be resettled, and living conditions of those people should reach or exceed the original level; the principle of respecting the production, living habits and customs of the people should be followed; compensation to all losses of the people, proper arrangement and recovery of their production and living standards should be guaranteed, so that the people can share the benefits of the project. Meanwhile, subsidies to remedy their temporary difficulties should be provided to make sure their income level and living standard can be raised or at least recover to the standard before the resettlement or before the project. In the new resettlement area, construction of basic infrastructures should follow the requirements for construction of new socialist countryside and include basic structures such as private houses, roads, water and electricity supply facilities, and structures for soil and water conservation and landscaping.

In addition, the people to be resettled for construction of Ertanggou reservoir must be provided before the actual resettlement with the compensation for replacement of all losses, assistance during the relocation and transitional period and support to raise or

at least recover their original living standard, income earning capability and production level. Special attention should be paid to needs of the poorest ones among the people to be resettled.

According to overall resettlement plan, land development for the resettlement area shall be 206 mu in total (2 mu per capita). Inundated land areas of the households in the impacted area differ from one to another (some have more land inundated, some have less or none). Based on full consultation with the people to be resettled, the project implementing office (Shanshan County Water Resources Bureau) put forward feasible land allocation program (see Attachment 9 “Land Allocation Program for Resettlement of Ertanggou Reservoir Construction” for details).

### **5.7 Prediction of Production and Living Standard of the People to Be Resettled**

After the resettlement and along with implementation of the plan for production and residential area development, assessment and prediction of the production and living standards of the people resettled should be conducted. For the prediction, the indexes or indicators to be used should correspond to the standards defined for the resettlement, including two types: production and living standards. Indexes for production standards of the people include cultivate land (grassland) quality and per capita occupation, net per capita income; the indexes for living and residential environment include per capita house building area, per capita daily-life electricity uses; water use standards, communication conditions and natural and social environment in the residential area.

#### **(1) Prediction of income from production and development activities**

Totally 206 mu of production land shall be developed in the resettlement area for construction of Ertanggou reservoir. According to soil test results by Shanshan County Agricultural Technical Extension Center, alfalfa, corn and wheat, etc. can be planted in the resettlement area. Since the people to be resettled are mostly engaged in animal husbandry production, analysis of alfalfa planting in the resettlement shows that the yield of alfalfa per mu can reach 300 kg of fresh alfalfa. In 2011, the per capita income of the people engaged in animal husbandry production can reach 6022.26 Yuan, an increase by 195.26 Yuan per capita (in 2011, the per capita income of the people engaged in animal husbandry production will increase to 5827 Yuan if at the original place).

#### **(2) Income from labor export**

Through strengthening training to the people to be resettled, their working skills can be broadened. Exploration of more employment opportunities and organization of labor export shall be one of the most direct and effective approaches to increase income of the people to be resettled. In order to ensure that the production and living standards of the people will not be lowered, their income shall be increased

continuously and they can thus shake off poverty and become well-off after the resettlement, the village committee will give priority consideration to the people to be resettled in arranging labor export every year (for instance, organizing them to go to Northern Xinjiang to collect cotton or go to hinterland provinces to work), and ensure one labor of the each of the resettled households or impacted households shall be included in the arrangements. Through labor export, the people to be resettled can have increased incomes from non-agricultural and non-animal husbandry sector.

(3) Per capita net income of the people after resettlement

After the resettlement, per capita net income of the people resettled shall increase by a certain degree compared with that of before resettlement. The main reasons for such increase are: after resettlement, the per capita cultivated land occupation of the people shall be apparently increased; production condition, natural resources conditions, social resources conditions in the resettlement area are very much favorable; the people resettlement can maintain their previous production approaches; the resettled people are mostly engaged in animal husbandry production, land acquisition for construction of the project shall not impact their production material. Analysis shows that after resettlement the per capita income of the people will reach 6022.26 Yuan after the resettlement (see details in Table 5-1).

Per Capita Income of People before and after Resettlement

Table 5-1

Items	Unit	Per Capita Income of Qialekan Village		
		Base Year 2007	Planning Year Objective 2011	Resettlement Year 2011
1. Income from Animal Husbandry	Yuan/person			6022.26
2. Per Capita Net Income of Farmer and Herding People	Yuan/person	3643	5827	6022.26

(4) Prediction of living standard of people resettled

After resettlement, housing conditions of the people will be greatly improved and people resettled can use the anti-earthquake safe houses of brick-wood structure. Per capita housing area, per capita daily-life electricity use, water use standard, communication condition in the residential area shall all be improved compared with those before resettlement, and natural and social environment in the residential area shall also be improved compared with that before resettlement.

(5) Post-resettlement supporting plan

In line with the requirements in the State Council Decree No.471 entitled “Regulations on Land Acquisition Compensation and Resettlement Arrangement for Big and Medium Size Water Resources and Hydropower Construction Projects” and

in State Council Document No. (2006) 17 entitled “State Council’s Opinions on Improving and Completing Post-resettlement Support Policy for Big and Medium Size Reservoir Construction Project”, post-resettlement support must be provided to the people whose original production and living standard can not be maintained after resettlement so as to help the people resettled to shake off poverty and become better-off, promote economic and social development in the reservoir area and resettlement area, ensure sound water resources and hydropower development in the new era, constitute and build harmonious socialistic society, make sure that the people to be resettled “are willing to be relocated, will be stabilized and can become better-off in a step by step approach”.

Totally 103 people who are currently within the inundated area that is defined for the design year and has been approved by the nation shall be included in the post-resettlement support for construction of Ertanggou reservoir. The standard of the support is 600 Yuan per person per year for 20 years.

## 6 Reservoir Bottom Cleaning Plan

The reservoir to be constructed covers an area of 0.9 km<sup>2</sup> and the inundated area includes houses of various types and the auxiliary structures, tombs, trees, some scattered fruit trees, other ground-based structures including buildings for specialized activities, etc. In order to avoid adverse impacts of remains of such objects on normal operation of the reservoir and pollution caused to quality of reservoir water, cleaning of the reservoir bottom is necessary. Cleaning of the reservoir bottom should be done in line with requirements of the local sanitation and epidemic prevention department, and disinfection treatment of the pollution sources in the reservoir area should be conducted, including dismantling and cleaning of the buildings and structures within the resettlement line, disinfection treatment of the latrines, manure pits, cattle and sheep pens and tombs, chopping off trees that are below normal water storage level and the sites, and clean-up of branches of the trees cut down and withered tree trunks, etc. Based on actual situation of the reservoir site and in line with the Design Norms for Land Acquisition and Resettlement for Water Resources and Hydropower Construction Projects (SL290-2003), cleaning of the reservoir bottom shall include activities of the aspects described in the following sections.

### 6.1 Cleaning for Sanitation and Epidemic Prevention Purpose

Cleaning for sanitation and epidemic prevention purpose should be done under the guidance by the local sanitation and epidemic prevention department.

#### (1) Manure Pits

Within the reservoir area, totally 16 manure pits will be inundated. The manure should be carried out of the reservoir area, while the pits should be disinfected using quicklime of 1 kg per m<sup>2</sup> and then filled with earth and tamped.

#### (2) Animal Pens

Totally 3240.8m<sup>2</sup> of animal pens will be inundated and the cleaning method is the same as that for manure pits.

#### (3) Tombs

Totally 99 tombs (including 20 ancient tombs) in the reservoir area need to be relocated, among them those with a history of less than 15 years will be moved out and re-buried; those with a history of more than 15 years will be treated according to local customs. The tomb pits shall be first disinfected using bleaching powder (1 kg each pit) and then filled with earth and tamped.



## **6.2 Cleanup of Trees**

The inundation area of the reservoir involves garden of 21.37 mu and woodland of various types of 167.86 mu, therefore a total area of 189.23 mu needs cleanup. There are also 958 trees that are scattered need cleanup.

Before water storage of the reservoir, the surface plants in the gardens and trees of various types must be cut down and carried out of the reservoir area or transplanted in places outside the reservoir area. The trees should be chopped at the position closest to the ground surface, with the remaining tree trunk within 0.3 m from the ground surface. The tree branches and withered woods that may become floaters should be transported to outside the reservoir area or burned before water storage of the reservoir, or treated using floating prevention measures.

## **6.3 Cleanup of Buildings**

In the reservoir area, total area of houses of various types that needs cleanup is 2960.07 m<sup>2</sup>. The houses shall be dismantled and cleaned based on their structures, the parts that can be reused should be made full use and those that are impossible for reuse should be dismantled and leveled manually. The remaining height of the houses should be within 0.5 m from the ground surface. The waste stuff that may become floaters should be disposed of according to sanitation and epidemic prevention requirements.

Auxiliary structures, including fencing walls, threshing grounds, cellars, manure pits, animal pens, water pools, stoves, Uygur bread-baking pits, etc. should be dismantled along with house dismantling; fencing walls and auxiliary buildings pertaining to the houses should be pushed down and leveled manually; the bread-making pits and cisterns should be filled up, tamped and sealed.

## **6.4 Cleanup of Buildings for Specialized Activities**

Buildings for specialized activities in the inundation area are those belong to a hydrological station. All those buildings should be disposed of as per requirements and the waste should be transported to outside areas before water storage of the reservoir.

## **7 Development and Utilization Plan of the Reservoir Area**

Development and utilization of the water area of the reservoir includes fishery, tourism and water sport activities and should abide by the following principles:

- (1) The development and utilization should be conducted in a unified approach by the reservoir operation and management organization and abide by centralized reservoir dispatching and regulating, so as to ensure safe operation of the reservoir;
- (2) Development of fishery, tourism, sanitarium and water sport businesses using the reservoir area should follow the principle of “he who runs the business should invest”, that is , the business owners should raise fund on their own;
- (3) The development and utilization should be in favor of protection of water quality and eco-environment of the reservoir;
- (4) Priority should be given to the people resettled in arranging development and utilization of water area of the reservoir.

Ertanggou reservoir is a water pivotal structure with comprehensive benefits, including benefits from irrigation, flood prevention and from water supply to oil development uses. Meanwhile, the special geographical location and convenient transportation condition of the reservoir create hard-won opportunities for its comprehensive development. Therefore, based on the features of the reservoir, preliminary proposals for fishery and tourism development that are with greater possibilities are put forward as follows.

### **7.1 Preliminary Proposal for Tourism Development**

Ertanggou reservoir is close to the National Road No. 312 and there is a asphalt road directly connecting with the reservoir area, providing easy access to the reservoir area that is currently one of the tourism resorts. Tourism resources along the National Road No. 312 are abundant, including the Flaming Mountain tourism site, the Beacon Tower tourism site and the Thousand-Buddha Cave tourism site, etc. After completion of the reservoir construction, tourism management department can arrange certain amount of tourism facilities that are adaptable to local environment and characterized by local features, based on features of the reservoir and the prerequisites of no pollution to water quality, no adverse impacts on operation safety and normal operation of the reservoir, so that the reservoir area can be gradually turned into a tourism resort with certain scale and full-bodied local features. The reservoir tourism site together with the above mentioned other tourism sites can form a golden tourism route.

## **7.2 Preliminary Proposal for Fishery Development**

After water storage of Ertanggou reservoir, a fishery area of about 1000 mu can be formed, which can be used as a favorable condition for fishery development. The aquatic products can be supplied to markets in Turpan City and Shanshan County, such fishery development can produce remarkable benefits and the marketing potential is great. Thus, the preliminary fishery development proposal is as follows:

- (1) Define fishing sites, area and quantity based on landform and hydrological conditions of the reservoir area;
- (2) Conduct specialized cleaning of the fishing sites before initial water storage of the reservoir;
- (3) Set up necessary fishery facilities, such as feed processing facilities, fish barriers and fishing facilities;
- (4) Conduct unified management on aquaculture and fishery development and operations in the reservoir area by reservoir operation and management organization.

## **8. Plan for Recovery and Reconstruction of Structures for Specialized Activities**

### **8.1 Principles for the Recovery and Reconstruction**

- (1) Combine recovery and reconstruction with rural economic development and make sure the recovery and reconstruction favor production development and living standard improvement of the people resettled;
- (2) In accordance with the principle of “reconstruction according to original scale, original standard and recovery of original function(s)”, economically feasible plan should be worked out for the structure that needs reconstruction. Additional investment due to increasing scale, upgrading standard or changing function(s) shall not be listed in the compensation funding plan;
- (3) Recovery and rebuilding of structures for specialized purposes should be in harmony with economic development of the region where the resettlement area is located;
- (4) For structures that do not need recovery or the recovery will be difficult, reasonable economic compensations should be given according to inundation impacts after approval department in charge.

### **8.2 Plan for Recovery and Reconstruction of Simple Road (Herding Road)**

The simple road inundated due to construction of Ertanggou reservoir is a herding road, which is a sand stone faced road with a width of 6m and the only access road for the herding people in Ertanggou area to go out. The inundated part of the road is 2.5km in length and reconstruction of the road is planned for 3km and preliminarily located on the hill slope at the left bank of the Ertanggou River above the inundation line.

### **8.3 Plan for Recovery and Reconstruction of Ertanggou Hydrological Station**

The hydrological station that will be inundated due to construction of the Ertanggou reservoir is a regional level specialized hydrological station (belonging to level-3 accuracy station of the nation). The station conducts measurement during flood season by stationed monitoring staff, with items monitored including water level, flow, suspended sediment, temperature, precipitation, evaporation and ice regime, etc. According to data provided by Turpan Prefecture Hydrological and Water Resources Investigation and Measurement Bureau, if relocating the station to at 1.2km downstream, or at the Gate No.0 of the Ertanggou Water Management Station, the cross-section there can meet the basic requirements for a specialized station.

#### **8.4 Plan for Disposal of Cultural Relics and Historic Sites**

Totally 20 ancient tombs, 1 rock painting and 1 ancient residential site will be inundated. Protection measures shall be undertaken before construction of the reservoir according to relevant regulations of the Law on Protection of Cultural Relics and data provided by the Archeology Research Institute of Xinjiang Uygur Autonomous Region.

## **9 Cost Estimate for Compensation of Land Acquisition and Resettlement**

### **9.1 References Used in the Estimation of Compensation**

- (1) Law of the People's Republic of China on Land Administration (revised in 2004)
- (2) Tentative Regulations for Collection of Arable Land Occupancy Tax of the People's Republic of China (State Council Decree No. 511)
- (3) Regulations for Land Acquisition Compensation and Resettlement for Construction of Big and Medium Size Water Resources and Hydropower Projects (State Council Decree No. 471)
- (4) Norms for Design of Land Acquisition and Resettlement for Construction of Water Resources and Hydropower Projects (SL290-2003)
- (5) Standards for Township Planning (GB50188-2007 )
- (6) Circular on Issues Relevant to Land Uses by Water Resources and Hydropower Projects (Document No. □2001□355 issued by Ministry of Land Resources, National Economic and Trade Committee and Ministry of Water Resources)
- (7) Method to Implement the Law of the Republic of China on Land Management in Xinjiang Uygur Autonomous Region (effective as of October 01, 1999)
- (8) Circular by Xinjiang DRC ((Development and Reform Commission) and Finance Bureau on Distribution of the Standard for Administrative Charging for Land Management by Xinjiang Land Resources Management System (Xinjiang DRC Document 2001 No. 500)
- (9) Circular on Further Defining Collection Standard for Forest Vegetation Recovery in Xinjiang issued by Xinjiang Forestry Bureau (Xinjiang Forestry Bureau Document No. □2006□503 )
- (10) Implementation Method for Collection of Arable Land Occupancy Tax in Xinjiang Uygur Autonomous Region (effective as of September 09, 2008)
- (11) Circular on Adjusting Charge Standards for Some of the Funeral Services (Xinjiang DRC Document No. □2004□1625)

### **9.2 Compensation Principles**

The following principles should be observed in preparing the cost estimate of compensation for land acquisition and resettlement of Ertanggou reservoir:

- (1) Cost estimate for compensation to the people to be resettled should be prepared based on investigations on the inundation impacted physical objects and resettlement plan and in line with relevant national laws, regulations and policies issued by the State Council;
- (2) Investments for recovery and reconstruction of the structures for resettlement of the people and for specialized activities should follow the principle of “reconstruction according to original scale, original standard and recovery of original function(s)” and be listed in the compensation funding for resettlement. Additional investment due to increasing scale, upgrading standard or changing function(s) shall not be listed in the compensation funding plan. For structures that do not need recovery or the recovery will be difficult, reasonable economic compensations should be given.
- (3) Investment on benefit-generating business development by relevant department using the reservoir water area should follow the principle of “he who runs the business should invest”, that is, the business owners should raise fund on their own.
- (4) Resettlement investment by year should be defined according to annual progress schedule of the resettlement construction plan.
- (5) Cost estimate for compensation to the people to be resettled for construction of the reservoir shall be prepared according to policy regulations and price standards in cost estimate for the pivotal structure construction project in the first quarter of 2009.

### **9.3. Properties to be Compensated**

The inundation-impacted properties to be compensated for the construction of Ertanggou Reservoir will include farmland, fruit plantations, forest land, grassland (artificial pastures and natural grassland), houses and the accessory structures, hydrological station, scattered trees, tombs.

#### **9.3.1. Compensation Criteria for Land Requisition**

□1 □ Requisition of Farmland: The compensation for farmland requisition will be composed of resettlement subsidy and the compensation fee for land as well as the properties on it (such as growing crops). In accordance with Resettlement Regulations on Land Requisition for the Construction of Large and Medium-sized Projects of Water Resources and Hydro Power, the sum of land compensation fee and resettlement subsidy is 16 times of the annual output value on the basis of the previous 3 year’s average. The properties on the land such as growing crops belong to the original owner. On the basis of the statistics of Qialekan Village in the recent 3 years, the output value of the farmland in the design benchmark year is calculated to be 881.06 Yuan/mu (excluding the output value of by-products, mainly alfalfa, including annual increment of 1.5%). Details are illustrated in Table 9-1. The compensation rate for farmland is 14096.96 Yuan/mu.

Table 9-1. Calculation of Farmland Output Value

No.	Crops	Year	Qialekan Village		Unit Price
			Sowing Area	Total Production	
			□mu□	□kg□	□Yuan□
1	Wheat	2005	180	45000	2
		2006	190	45600	
		2007	200	54000	
2	Potato	2005	120	222000	0.7
		2006	110	198000	
		2007	130	273000	
3	Output Value of Main Product (Yuan/mu)	2005	818.00		
		2006	766.00		
		2007	906.36		
4	Output Value of Main Product in 3 Years Average (Yuan/mu)	830.12			
5	Output Value of Main Products and By-products in 3 Years Average (Yuan/mu)	830.12			
6	Output Value of in Design Benchmark Year (Yuan/mu)	881.06			

□2□Fruit Plantation: In accordance with Circular by Xinjiang DRC (Development and Reform Commission) and Finance Bureau) on Distribution of the Standard for Administrative Charging for Land Management by Xinjiang Land Resources Management System (Xinjiang DRC Document 2001 No. 500), the compensation for fruit plantation land is twice the compensation for farmland. The compensation fee and resettlement subsidy will be calculated on the basis of 16 times. In accordance with the survey, there are 34 pieces of trees per mu. On the basis of 60 Yuan/tree, the compensation for trees will be 2040 Yuan/mu. The compensation rate for fruit plantation is 30233.92 Yuan/mu.

Calculation Table of Farmland Compensation (unit: Yuan/mu)

Grade	Class-1 Farmland (high yield)	Class-2 Farmland (moderate yield)	Class-3 Farmland (low yield)
Base for calculating compensation	1200	640	480
Remarks	1. This table is applicable to the farmland of grain crops. 2. For the land growing cash crops, vegetables and fruits, the annual output value should be higher than that for Class-1		



annual output value should be higher than that for Class-1 farmland. However, the maximum output value of cotton land should not exceed 1.5 times, that of fruit plantation not exceed 2 times, that of vegetable land not exceed 3 times, that of vineyard not exceed 4 times. For other cash crops, the annual output value is surveyed and calculated on the reality.

□3□ Forest Land: The compensation for forest land is composed of forest land compensation fee, resettlement subsidy, tree compensation fee and forest vegetation rehabilitation charge. Of the above, forest vegetation rehabilitation charge is included in the taxation system.

The forest land compensation fee and resettlement subsidy will be calculated on the basis of Feasibility Study Report on Forest Land Requisition for the Construction of Ertanggou Reservoir in Shanshan County, Xinjiang prepared by Xinjiang Agricultural University. On the above basis, the compensation for forest land will be Yuan 2,569,066, including forest land compensation fee Yuan 956,113, resettlement subsidy Yuan 637,409, tree compensation fee Yuan 267,312 and forest vegetation rehabilitation charge Yuan 708,232.

#### Rate of Compensation for Timbre Trees and Fruit Trees

Items	Unit	Specification (BHD, cm)	Compensation (Yuan)
Broad leaf trees	pc	Less than 5 cm	10□15
	pc	5-15 cm	15□25
	pc	15-30 cm	25□35
	pc	Over 30 cm	45
Conifer trees	pc	Less than 5 cm	20□30
	pc	5-15 cm	30□50
	pc	15-30 cm	50□70
	pc	Over 30 cm	90
Fruit trees	pc	Less than 5 cm	20□40
	pc	5-15 cm	40□60
	pc	15-30 cm	60□100
	pc	Over 30 cm	120
Grapes	pc	Less than 3 years old, no fruiting	30□70
	pc	Over 3 years old, already fruiting	70□110

□4□ The compensation for artificial pasture will be of the same rate as for farmland (or 14099.96 Yuan/mu).

□5□The compensation for natural grassland will follow Circular by Xinjiang DRC (Development and Reform Commission) and Finance Bureau) on Distribution of the Standard for Administrative Charging for Land Management by Xinjiang Land Resources Management System (Xinjiang DRC Document 2001 No. 500). Then, the compensation for the grassland of Class-3 in Category-2 will be 88 Yuan/mu. On the basis of Regulation of Xinjiang on Implementing Law of Land Administration, the compensation for grassland will be calculated at 6 times, while that for resettlement subsidy will be 4 times. Then, the sum of grassland compensation and resettlement subsidy for the grassland of Class-3 in Category-2 will be 880 Yuan/mu.

Rate of Compensation for Grassland (unit: Yuan/mu)

	Class-1 Good	Class-2 Moderate	Class-3 Poor
Category-1	328	262	120
Category-2	262	148	88
Category-3	136	96	63
Category-4	80	69	50

□6□The compensation for growing crops will be considered for one year (i.e. 881.06 Yuan/mu), while the compensation for growing alfalfa will be considered for 2 years (1762.12 Yuan/mu).

□7□In accordance with Circular by Xinjiang DRC (Development and Reform Commission) and Finance Bureau) on Distribution of the Standard for Administrative Charging for Land Management by Xinjiang Land Resources Management System (Xinjiang DRC Document 2001 No. 500) and Regulation of Xinjiang on Implementing Law of Land Administration, the compensation for the requisition of house site will be calculated as 6 times of the farmland annual output value. No resettlement subsidy will be calculated. Then, the compensation for the requisition of house site will be 5286.36 Yuan/mu.

□8□The compensation for abandoned land will be calculated at the reference of the compensation rate for house site. Namely, the compensation for the requisition of abandoned land will be 5286.36 Yuan/mu.

□9□The compensation for threshing ground will be calculated at the reference of the compensation rate for house site. Namely, the compensation for the requisition of threshing ground will be 5286.36 Yuan/mu.

### 9.3.2. Compensation Rate for Temporary Land Occupation

The land temporarily occupied for the project is actually barren ground. In accordance with the relevant regulations, no compensation will be calculated.

### 9.3.3. Compensation Rate for House Demolishment

The compensation for house demolition is composed mainly of house compensation fee, resettlement subsidy, infrastructure compensation fee.

- 1  The compensation for house and the accessory structures will be calculated on the basis of the structure type, quality and reconstruction cost.
  
- The construction cost for a house of barnacle structure and clay-wood structure is calculated to be 542.88 Yuan/m<sup>2</sup> (Table 9-2).
  
- Sub-house of barnacle structure: 300 Yuan/m<sup>2</sup>
  
- Shed/stable of barnacle structure: 200 Yuan/m<sup>2</sup>
  
- Fencing wall of barnacle structure: 80 Yuan/m
  
- Wooden fencing wall: 60 Yuan/m
  
- Wire fence: 60 Yuan/m
  
- Cellarage: 400 Yuan/set
  
- Oven: 350 Yuan/set
  
- Toilet: 300 Yuan/set
  
- Stove: 300 Yuan/set

Table 9-2 (1) Construction Cost per Unit

Line No.	No.	Items	Note	Rate	Cost
1	1	Direct cost	Direct cost		30,001.80
2		Incl: labor cost	Total of labor cost		7,220.37
3		Incl: material cost	Total of material cost		20,972.24
4		Incl: cost of mechanical operation	Total cost of mechanical operation		1,809.19
5	2	Other direct cost	□1□	2.07	621.04
6	3	On-site provision	□1□	4.52	1,356.08
7	4	Direct engineering cost	□1□+□5~6□		31,978.92
8	5	Indirect cost	□7□	7.64	2,443.19
9	6	Labor insurance	□7□	3.2	1,023.33
10	7	Sum of direct engineering cost and indirect cost (labor insurance)	□7~9□		35,445.44
11	8	Profit	□10□	2.5	886.14
12	9	Temporary structure and expenditure for cultural activities	□1□	2.08	624.04
13	10	Temporary structure and cultural facility	□14~19□		
14		Fencing wall of glass fibre reinforced plastic; 10 m			
15		Fencing wall of color steel plate; 10m			
16		Paved road; 100 m			
17		C10 concrete floor; 100 thick; 100m			
18		Floor of fine concrete, 50 thick; 100m			
19		Floor paved with red bricks; 100 m			
20	11	Measurement of project quota	□10~13□	0.13	48.04
21	13	Price gap of materials	Total of price gap for labor, material and mechanical operation		8,891.17
22		Transportation gap for materials	85.4×.35×65		1,942.85
23	14	Taxation	□10~13□+□20~21□	3.41	1,565.01
24	15	Construction cost including vertical transportation cost	□10~13□+□20~23□		49,402.69
25	16	Vertical transportation cost (VTC) of the overlapped	VTC deducted /100×building area×□□24□/□1□□		
26	17	Construction cost	□24□-□25□		49,402.69

Table 9-2 (2) Construction Cost per Unit

No.	Quota No.	Sub-Items	amount of works		Value (Yuan)		Including (Yuan)	
			Unit	quantity	Unit Price	Total Price	Labor cost	Material cost
1	I	Earthwork and stone work				844	492	0
2	1-8	Digging trench; soil Type-3, depth within 2m	100m <sup>3</sup>	0.30	1,386.42	412	411	
3	1-46	Back-filling and compacting	100m <sup>3</sup>	0.10	943.21	97	78	
4	1-195	dump truck (3.5t), transportation within 5km	1000m <sup>3</sup>	0.02	17,257.30	334	3	0
5	II	Scaffold work				1,002	206	760
6	B3-1	construction of residential house	m <sup>2</sup>	91.00	11.01	1,002	206	760
7	III	Masonry and laying work				8,649	2,580	5,867
8	4-66	M7.5 cement mortar stone foundation; rubblework	10m <sup>3</sup>	1.94	1,279.83	2,483	549	1,869
9	4-70	M7.5 cement mortar wall; rubblework	10m <sup>3</sup>	4.15	1,485.89	6,166	2,031	3,998
10	V	Door, window and other wood structure				12,800	2,710	9,988
11	7-304	Installation of plastic window; side hang window	100m <sup>2</sup>	0.11	18,300.87	2,059	45	2,014
12	H7-338	Purlin, round log	m <sup>3</sup>	3.77	1,101.40	4,150	371	3,779
13	H7-346	roof board is nailed to purlin (15mm thick)	100m <sup>2</sup>	0.78	1,817.82	1,424	147	1,239
14	H7-353	Beam of round log; Φ within 24cm	m <sup>3</sup>	1.70	2,040.26	3,459	1,817	1,642
15	B7-9	Making doorframe for match board door, single door without	100m <sup>2</sup>	0.11	2,906.71	320	27	283

		transom						
16	B7-10	Installing doorframe for match board door, single door without transom	100m <sup>2</sup>	0.11	948.31	104	50	54
17	B7-11	Making match board door, single door without transom	100m <sup>2</sup>	0.11	6,247.93	687	93	563
18	B7-12	Installing match board door, single door without transom	100m <sup>2</sup>	0.11	253.91	28	28	
19	B7-70	Installing railing window	100m <sup>2</sup>	0.13	4,441.53	569	133	413
20	VI	Flooring work				2,963	886	1,981
21	8-7	M2.5 cement mortar, rubble grouting blanket	10m <sup>3</sup>	1.10	1,198.32	1,319	367	914
22	8-19	1□3 cement mortar leveling layer, filler material 20mm	100m <sup>2</sup>	0.82	630.77	517	169	331
23	8-23	cement mortar, floor 20mm	100m <sup>2</sup>	0.73	719.80	528	194	322
24	8-43	Concrete surface, 60mm thick	100m <sup>2</sup>	0.37	1,617.01	598	157	415
25	VII	Roof and water-proofing work				2,199	151	2,048
26	9-14	Roof of 2 layers of asphalt felt and 3 layers of asphalt	100m <sup>2</sup>	0.92	2,082.89	1,919	121	1,798
27	9-17	Roof of one layers of asphalt felt	100m <sup>2</sup>	0.92	304.41	280	30	251
28	VIII	Works of anticorrosion, heat preservation and heat insulation				524	196	328
29	B10-6	Spreading slag on roof for heat preservation and heat insulation	10m <sup>3</sup>	1.65	316.93	524	196	328

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30	X	Quota of vertical transportation				1,021		
31	13-1	Windlass operation, within 20m	100m <sup>2</sup>	0.91	1,122.08	1,021		
32		Total				30,002	7,220	20,972

Table 9-2 (3) Construction Cost per Unit

No.	Material	Unit	Material Quantity	Budget	Market Price	Price Gap	Total of Price Gap
1	Comprehensive workday for civil construction	WD	272.67	25.73	39.60	13.88	3,783
2	flat steel	t	0.03	2,655.96	5,426.45	2,770.49	96
3	galvanized iron wire 8#	kg	0.06	2.76	4.03	1.26	0
4	Steel plate	t	0.00	3,165.96	6,103.95	2,937.99	2
5	reinforcing steel bar, Φ10	kg	4.81	2.67	5.57	2.90	14
6	angle steel	t	0.00	2,695.96	5,663.95	2,967.99	1
7	round steel	t	0.09	2,755.96	5,568.45	2,812.49	261
8	moulding board material	m <sup>3</sup>	0.01	557.50	1,221.97	664.48	10
9	Class-1 wood board □18mm	m <sup>3</sup>	1.27	969.19	1,500.00	530.81	674
10	Class-1 square timber 55-100cm <sup>2</sup>	m <sup>3</sup>	0.27	969.19	1,500.00	530.81	144
11	Class-1 square timber □54cm <sup>2</sup>	m <sup>3</sup>	0.12	969.19	1,500.00	530.81	66
12	Round wood	m <sup>3</sup>	5.89	846.00	1,200.00	354.00	2,086
13	Baking Class-1 square timber 55-100cm <sup>2</sup>	m <sup>3</sup>	0.60	997.14	1,500.00	502.86	303
14	Baking Class-1 wood board 19-35mm	m <sup>3</sup>	0.18	997.14	1,500.00	502.86	88
15	cement 32.5□R□	kg	9,573.93	0.30	0.29	-0.02	-144
16	coarse sand	m <sup>3</sup>	0.00	35.55	59.00	23.45	0
17	Medium-sized (coarse) sand	m <sup>3</sup>	1.32	33.46	59.00	25.54	34
18	Medium-sized sand (clean)	m <sup>3</sup>	29.58	33.46	59.00	25.54	756
19	gasoline	kg	34.78	3.43	6.08	2.65	92
20	petroleum asphalt, 30#	kg	565.37	1.83	2.09	0.26	148
21	window	m <sup>2</sup>	10.67	188.58	223.08	34.50	368
22	water	m <sup>3</sup>	18.70	1.50	2.50	1.00	19
23	diesel oil	kg	3.10	3.10	5.70	2.60	8
24	gasoline	kg	30.56	3.43	6.08	2.65	81
25	Total						8,891

□2□The resettlement subsidy will be calculated on the basis of the following rates:



- Travel: 1000 Yuan/household
  - Accommodation and food on the way: 100 Yuan/person
  - Medical care: 150 Yuan/person
  - Compensation for loss of working time: 360 Yuan/person
  - Compensation for property loss: 500 Yuan/person
  - Temporary housing: 900 Yuan/person
  - Transportation: 50 Yuan/person
- 3  The infrastructure compensation fee will be calculated on the basis of the designed structures at resettlement area, including new site requisition and site leveling as well as the structures of protection, drainage, water supply, electricity supply, rural roads and so on. The cost of new site requisition will be managed according to the legal regulations relevant. A resettler can have 3 options to satisfy his/her own willingness. The 1<sup>st</sup> option is that the resettler demolishes the old house him/herself and builds a new house at the resettlement area according to the plan. The 2<sup>nd</sup> option is that the resettler demolishes the old house him/herself and the project office helps the resettler build a new house at the resettlement area according to the plan. The 3<sup>rd</sup> option is that the resettler demolishes the old house him/herself and move into the houses built by the project on unified basis. After soliciting the opinion of the resettlers, the 1<sup>st</sup> option was chosen.
- The cost of new site requisition at the resettlement area: The land for the construction of resettlement area is state-owned. This piece of open land becomes available from governmental direct transfer. Therefore, it is not listed in the compensation cost for land requisition.
  - According to the planning and designs, the cost of site leveling for house construction will be Yuan 652500. The details are illustrated in Table 9-3.

Table 9-3 (1). Construction Cost per Unit

Line No.	No.	Items	Note	Rate	Cost
1	1	Direct cost	Direct cost		378,033.27
2		Incl: labor cost	Total of labor cost		112,151.52
3		Incl: material cost	Total of material cost		151,694.31
4		Incl: cost of mechanical operation	Total cost of mechanical operation		39,837.44
5	2	Other direct cost	□1□	2.07	7,825.29
6	3	On-site provision	□1□	4.52	17,087.10
7	4	Direct engineering cost	□1□+□5□6□		402,945.66
8	5	Indirect cost	□7□	7.64	30,785.05
9	6	Labor insurance	□7□	3.2	12,894.26
10	7	Sum of direct engineering cost and indirect cost (labor insurance)	□7□9□		446,624.97
11	8	Profit	□10□	2.5	11,165.62
12	9	Temporary structure and expenditure for cultural activities	□1□	2.08	7,863.09
13	11	Measurement of project quota	□10□12□	0.13	605.35
14	13	Price gap of materials	Total price gap of labor, material and mechanical operation		159,270.56
15		Transportation gap for materials	240×0.35×65		5,460.00
16	14	Taxation	□10□12□+□13□15□	3.41	21,516.75
17	15	Construction cost including vertical transportation cost	□10□12□+□13□16□		652,506.34
18	16	Vertical transportation cost (VTC) of the overlapped	VTC deducted /100×building area×□□17□/□1□□		
19	17	Construction cost	□17□-□18□		652,506.34

Table 9-3 (2). Construction Cost per Unit

No.	Quota No.	Sub-Items	amount of works		Value (Yuan)		Including (Yuan)	
			Unit	quantity	Unit Price	Total Price	Labor Cost	Material Cost
1	1-267	Site leveling, within 30cm, bulldozer (75kW)	1000m <sup>2</sup>	33.40	342.99	11,456	859	
2	1-270	Soil compacting, road roller (within 15t)	1000m <sup>2</sup>	33.40	73.59	2,458	859	
3	1-8	Digging trench; soil Type-3, depth within 2m	100m <sup>3</sup>	26.28	1,386.42	36,429	36,318	
4	1-17	Digging footing groove; soil Type-3, depth within 2m (drainage well)	100m <sup>3</sup>	0.48	1,640.06	779	774	
5	1-46	Back-filling and compacting	100m <sup>3</sup>	20.11	943.21	18,965	15,208	
6	4-66	M7.5 cement mortar stone foundation; rubblework	10m <sup>3</sup>	61.68	1,279.83	78,946	17,471	59,427
7	1-195	dump truck (3.5t), transportation within 5km	1000m <sup>3</sup>	1.11	17,257.30	19,161	171	20
8	4-37	M7.5 cement mortar fencing wall	100m <sup>2</sup>	21.31	3,477.70	74,106	26,669	46,408
9	5-82	moulding board for on-spot concrete casting, circular beam	100m <sup>2</sup>	6.17	1,692.81	10,442	5,727	4,249
10	5-297	on-spot concrete cast structure, round reinforcing steel bar Φ12	t	7.30	3,282.10	23,959	1,792	21,486
11	5-356	stirrup Φ8	t	3.57	3,292.19	11,753	1,715	9,811
12	5-408	C20 on-spot concrete casting, circular beam	10m <sup>3</sup>	7.40	2,057.14	15,227	4,589	10,294
13	B001	grill	m	800.00	80.00	64,000		
14	B002	Drainage well, valve well	set	23.00	450.00	10,350		
15								
16		Total				378,033	112,152	151,694

Table 9-3 (3) Price Gap of Labor, Material and Mechanical Operation

No.	Material	Unit	Material Quantity	Budget	Market Price	Price Gap	Total of Price Gap
1	Comprehensive workday for civil construction	WD	4,359.62	25.73	39.60	13.88	60,490
2	galvanized iron wire 22#	kg	66.25	3.18	4.46	1.28	85
3	galvanized iron wire 8#	kg	398.11	2.76	4.03	1.26	502
4	reinforcing steel bar Φ12	t	7.63	2,778.96	5,586.45	2,807.49	21,417
5	reinforcing steel bar Φ8	t	3.64	2,666.96	5,568.45	2,901.49	10,565
6	moulding board material	m <sup>3</sup>	0.09	557.50	1,221.97	664.48	57
7	Clay brick	1000 pc	294.17	108.74	265.00	156.26	45,967
8	Medium-sized (coarse) sand	m <sup>3</sup>	36.06	33.46	59.00	25.54	921
9	Medium-sized sand (clean)	m <sup>3</sup>	402.15	33.46	59.00	25.54	10,272
10	water	m <sup>3</sup>	295.32	1.50	2.50	1.00	295
11	diesel oil	kg	1,544.12	3.10	5.70	2.60	4,019
12	gasoline	kg	1,762.65	3.43	6.08	2.65	4,678
13	Total						159,271

□ In accordance with the planning and design, the cost of water supply and drainage will be Yuan 291300, including Yuan 230000 for well construction and water pipelines (Table 9-4).

Table 9-4(1) Construction Cost per Unit

Line No.	No.	Items	Note	Rate	Cost
1	1	Direct cost	Direct cost + mainly material total cost + equipment total cost		42,194.69
2		Incl: labor cost	Total of labor cost		8,519.16
3		Incl: material cost	Total of material cost		2,216.68
4		Incl: cost of mechanical operation	Total cost of mechanical operation		891.13
5		Incl. main material	Total cost of main material		30,567.74
6		Incl. equipment	Total cost of equipment		

7	2	Other direct cost	□2□	20.09	1,711.50
8	3	On-site provision	□9□10□		2,371.73
9		Incl. temporary structure cost	□2□	10.13	862.99
10		On-spot management cost	□2□	17.71	1,508.74
11	4	Direct cost of engineering	□1□+□7□8□		46,277.92
12	5	Indirect cost	□2□	38.99	3,321.62
13	6	Labor insurance	□2□	30	2,555.75
14	7	Sum of direct engineering cost and indirect cost (labor insurance)	□11□13□		52,155.29
15	8	Profit	□2□	30	2,555.75
16	10	Measurement of project quota	□14□15□	0.13	71.12
17			Total price gap of labor, material and mechanical operation		4,472.53
18	11	Taxation	□14□17□	3.41	2,020.58
19	12	Installation	□14□18□		61,275.27

Table 9-4(2). Budget Estimation per Unit

No.	Quota No.	Sub-Items	amount of works		Value (Yuan)		Including (Yuan)	
			Unit	quantity	Unit Price	Total Price	Labor Cost	Material Cost
1	6-273	Low-pressure plastic pipe, outside diameter 20mm, PE	10m	55.00	16.12	887	693	24
2	MM	□01165218-1□Plastic pipe	m	550.00	3.00	1,650		
3	6-274	Low-pressure plastic pipe, outside diameter 25mm, PE	10m	3.50	17.76	62	47	2
4	MM	□01165218-2□□□□	m	35.00	4.00	140		
5	6-275	Low-pressure plastic pipe, outside diameter 32mm, PE	10m	7.00	20.14	141	103	4
6	MM	□01165218-3□Plastic pipe	m	70.00	6.00	420		
7	6-276	Low-pressure plastic pipe, outside diameter 40mm, PE	10m	3.50	24.30	85	59	3
8	MM	□01165218-4□Plastic pipe	m	35.00	8.00	280		
9	6-277	Low-pressure plastic pipe, outside diameter 50mm, PE	10m	14.00	31.87	446	313	26
10	MM	□01165218-5□Plastic pipe	m	140.00	11.00	1,540		
11	6-278	Low-pressure plastic pipe, outside diameter 75mm, PE	10m	40.00	44.90	1,796	1,211	116
12	MM	□01165218-6□Plastic pipe	m	400.00	20.00	8,000		
13	6-286	Low-pressure plastic pipe, outside diameter 20mm, PPR	10m	15.50	10.53	163	156	7
14	MM	□01165231-1□socket joint plastic pipe	m	155.00	3.00	465		
15	8-157	socket joint plastic pipe for drainage, diameter 100mm	10m	77.00	83.68	6,443	4,697	1,726
16	MM	□01185033-1□socket joint plastic pipe DN100	m	656.04	15.00	9,841		
17	MM	□01185037-1□fitting of socket joint plastic pipe for drainage DN100	pc	876.26	5.00	4,381		
18	8-155	socket joint plastic pipe for drainage, diameter 50mm	10m	10.00	51.97	520	402	115
19	MM	□01185031-1□socket joint plastic pipe for drainage DN50	m	96.70	8.00	774		
20	MM	□01185035-1□fitting of socket joint plastic pipe for drainage DN50	pc	90.20	3.00	271		
21	8-242	Installing screwed valve, diameter 20mm	pc	22.00	4.01	88	58	30
22	MM	□01185215-1□screwed valve DN20	pc	22.22	12.00	267		
23	8-259	Installing flanged valve, diameter 65mm	pc	1.00	79.63	80	17	48
24	MM	□01185229-1□flanged valve DN65	pc	1.00	240.00	240		
25	1-834	submersible pump, less than 1.0t	set	1.00	915.85	916	762	115
26	MM	Supplementary main material for submersible pump	set	1.00	2,300.00	2,300		
27		Total	Yuan			42,195	8,519	2,217

Note: MM = main material

Table 9-4(3) Price Gap of Labor, Material and Mechanical Operation

No.	Material	Unit	Material Quantity	Budget	Market Price	Price Gap	Total of Price Gap
1	Comprehensive workday	WD	323.98	26.30	40.10	13.81	4,473
2	Total						4,473

□ One set of transformer will be required to have 220V electricity from the 10kv transmission line passing through Bakaner Village. In addition, 1.2km of 10kV transmission line will be erected. In accordance with the planning and design, the cost of electricity supply and illumination will amount to Yuan 815303 (including the transformer). The details for electricity supply engineering are illustrated in Table 9-5.

Table 9-5(1) Construction Cost per Unit

Line No.	No.	Items	Note	Rate	Cost
1	1	Direct cost	Direct cost + mainly material total cost + equipment total cost		712,515.05
2		Incl: labor cost	Total of labor cost		37,561.31
3		Incl: material cost	Total of material cost		12,232.59
4		Incl: cost of mechanical operation	Total cost of mechanical operation		3,154.84
5		Incl. main material	Total cost of main material		659,566.34
6		Incl. equipment	Total cost of equipment		
7	2	Other direct cost	□2□	20.09	7,546.07
8	3	On-site provision	□9□10□		10,457.07
9		Incl. temporary structure cost	□2□	10.13	3,804.96
10		On-spot management cost	□2□	17.71	6,652.11
11	4	Direct cost of engineering	□1□+□7□8□		730,518.19
12	5	Indirect cost	□2□	38.99	14,645.15
13	6	Labor insurance	□2□	30	11,268.39
14	7	Sum of direct engineering cost and indirect cost (labor insurance)	□11□13□		756,431.73
15	8	Profit	□2□	30	11,268.39
16	10	Measurement of project quota	□14□15□	0.13	998.01
17		price gap of labor	Total price gap of labor, material and mechanical operation		19,720.29
18	11	Taxation	□14□17□	3.41	26,885.07
19	12	Installation	□14□18□		815,303.49

Table 9-5(1) Budget Estimation per Unit

No.	Quota No.	Sub-Items	amount of works		Value (Yuan)		Including (Yuan)	
			Unit	quantity	Unit Price	Total Price	Labor Cost	Material Cost
1	2-8	Installation of transformer	set	1.00	348.27	348	198	71
2	MM	Transformer main material (supplementary main material 1)	set	1.00	20,000.00	20,000		
3	2-265	Installation of distribution box, semi perimeter 1.5m	set	1.00	87.36	87	60	27
4	MM	distribution box main material (supplementary main material 2)	set	1.00	2,800.00	2,800		
5	2-263	Installation of distribution box, semi perimeter 0.5m	set	22.00	62.14	1,367	868	499
6	MM	distribution box main material (supplementary main material 3)	set	22.00	450.00	9,900		
7	2-753	Transportation at working site, man power, within 200m	10t.km	5.00	2,695.76	13,479	13,479	
8	2-1172	Threading illumination copper wire, cross-section 2.5mm <sup>2</sup>	100m	11.70	37.48	439	308	131
9	MM	(01124004-1) insulated conductor	m	1,357.20	1.60	2,172		
10	2-1173	Threading illumination copper wire, cross-section 4 mm <sup>2</sup>	100m	13.00	29.45	383	239	144
11	MM	(01124004-2) insulated conductor□	m	1,430.00	2.80	4,004		
12	2-1395	Installation of lamp	10 set	15.40	50.82	783	559	224
13	MM	(01124024-1)□ complete set of lamp	set	155.54	8.00	1,244		
14	2-	Installation of switch	10 set	15.40	50.56	779	336	443



	1635							
15	MM	(01124008-1 □ switch	set	157.08	4.00	628		
16	2-1670	Installation of socket (15A, 5 holes)	10 set	15.40	40.13	618	445	173
17	MM	(01124017-1 □ complete set of socket	set	157.08	12.00	1,885		
18	2-1670	Installation of socket (15A, 5 holes, water-proof)	10 set	8.80	40.13	353	254	99
19	MM	(01124017-2 □ complete set of socket	set	89.76	18.00	1,616		
20	2-619	Power cable installation, cross section 120mm <sup>2</sup>	100m	15.00	605.94	9,089	4,997	3,409
21	MM	Cable main material (supplementary main material 3)	m	1,530.00	350.00	535,500		
22	2-1111	fire-retardant pipe installation, caliber 20mm	100m	19.50	462.47	9,018	5,035	3,511
23	MM	(01124027-1) fire-retardant pipe	m	2,145.00	2.80	6,006		
24	2-1001	Steel pipe installation, caliber 40mm	100m	5.85	809.29	4,734	2,901	1,613
25	MM	□01124002-1 □ steel pipe	m	602.55	17.86	10,762		
26	2-757	Earthwork, stone work	10m <sup>3</sup> □	12.67	153.28	1,942	1,773	170
27	2-763	Underpan installation	set	22.00	16.30	359	359	
28	MM	(supplementary main material 5) underpan main material	set	22.00	30.00	660		
29	2-764	Underpan installation	set	22.00	7.10	156	156	
30	MM	(supplementary main material 6) underpan main material	set	22.00	25.00	550		
31	2-765	Underpan installation	set	44.00	5.78	254	254	
32	MM	(supplementary main material 7) underpan main material	set	44.00	20.00	880		
33	2-770	wire pole erecting, within 9m	pc	22.00	42.08	926	550	52

34	MM	(supplementary main material 8) concrete wire pole	pc	22.00	650.00	14,300		
35	2-793	Installation of cross arm, 1kV	set	22.00	9.06	199	156	43
36	MM	(supplementary main material 9) cross arm main material	set	22.00	35.00	770		
37	2-799	Installation of cross arm for house service wire	set	22.00	15.57	343	214	128
38	MM	(supplementary main material 10) cross arm main material	set	22.00	20.00	440		
39	2-804	stay wire installation, cross section 35mm <sup>2</sup>	set	44.00	13.10	576	521	56
40	MM	(supplementary main material 11) stay wire main material	set	44.00	30.00	1,320		
41	2-818	spanning insulated aluminum stranded conductor, cross section BXF-0.5-10	1km/single line	1.20	234.98	282	152	97
42	MM	(supplementary main material 12) BXF-0.5-10 main material	m	1,260.00	10.00	12,600		
43	2-818	spanning insulated aluminum stranded conductor, cross section BXF-35	1km/single line	0.82	234.98	193	104	66
44	MM	(supplementary main material 13) BXF-35	m	861.00	30.00	25,830		
45	2-819	spanning insulated aluminum stranded conductor, cross section BXF-50	1km/single line	0.02	447.61	9	5	3
46	MM	(supplementary main material 14) BXF-50 main material	m	21.00	40.00	840		
47	2-690	Making and installing grounding plate	pc	117.00	23.03	2,695	1,477	213
48	MM	(supplementary main material 15) angle iron L50*50*2500	set	117.00	18.00	2,106		
49	2-696	Installing earthed busbar indoors	10m	60.00	58.97	3,538	2,161	1,062
50	MM	(supplementary main	m	612.00	4.50	2,754		

		material 16) flat steel -40*4					
51		Total	Yuan			712,515	37,561
						12,233	

Note: MM = main material

Table 9-5(2) Price Gap of Labor, Material and Mechanical Operation

No.	Material	Unit	Material Quantity	Budget	Market Price	Price Gap	Total of Price Gap
1	Comprehensive workday	WD	1,428.49	26.30	40.10	13.81	19,720
2	Total						19,720

□ It is required to build 3 km of road from Ertanggou Highway to Bakaner Village. It will pass through the resettlement area, serving as the channel connecting the outside. In accordance with the planning and design, the cost of the road building will amount to Yuan 1074400. The details are illustrated in Table 9-6.

Table 9-6(1) Construction Cost per Unit

Line No.	No.	Items	Note	Rate	Cost
1	I	Direct cost	Direct cost		778,962.87
2	1	labor cost	Total of labor cost		51,245.94
3	2	material cost	Total of material cost		647,207.40
4	3	cost of mechanical operation	Total cost of mechanical operation		80,509.53
5	II	Other direct cost	□6~10□		21,109.89
6	2	Use of tools	□1□	0.62	4,829.57
7	3	Test and experiment	□1□	0.05	389.48
8	4	Training for special type of work	□1□	0.05	389.48
9	5	Engineering orientation, double check, site clearance	□1□	0.08	623.17
10	6	Additional construction	□1□	1.91	14,878.19
11	III	On-site provision	□12□13□		32,326.96
12	1	Incl. temporary structure cost	□1□	1.81	14,099.23
13	2	On-spot management cost	□1□	2.34	18,227.73
14	IV	Direct cost of engineering	□1□+□5□+□11□		832,399.72
15	V	Indirect cost	□16□17□		28,884.27
16	1	Enterprise management	□14□	3.16	26,303.83
17	2	Financial affairs	□14□	0.31	2,580.44
18	VI	Labor insurance	□14□	3.2	26,636.79
19	VII	Sum of direct engineering cost and indirect cost (labor insurance)	□14□15□+□18□		887,920.78
20	VIII	Profit	□19□	2.52	22,375.60

21	IX	Temporary structure and expenditure for cultural activities	□1□	0.33	2,570.58
22	XI	Measurement of project quota	□19□21□	0.13	1,186.73
23		price gap of labor and material	Total price gap of labor, material and mechanical operation		65,183.16
24		Transportation gap for materials	500×.35×65		11,375.00
25	XII	Taxation	□19□24□	3.41	33,779.86
26	XIII	Construction cost	□19□25□		1,074,400.71

Table 9-6(2) Budget Estimation per Unit

No.	Quota No.	Sub-Items	amount of works		Value (Yuan)		Including (Yuan)	
			Unit	quantity	Unit Price	Total Price	Labor Cost	Material Cost
1	1-357	Soil compacting, road roller (within 15t)	1000m <sup>2</sup>	27.00	76.01	2,052	674	
2	1-354	Site leveling with bulldozer, 75kw	1000m <sup>2</sup>	27.00	364.50	9,842	674	
3	2-233	asphalt pavement, 7cm	100m <sup>2</sup>	210.00	1,125.52	236,359	26,471	180,804
4	2-234	Adding or reducing asphalt pavement by 1cm	100m <sup>2</sup>	1,050.00	169.12	177,576	12,054	151,221
5	2-285	Paving fine asphalt concrete, 3cm	100m <sup>2</sup>	210.00	1,681.59	353,134	11,374	315,183
6		Total				778,963	51,246	647,207

Table 9-6(3) Price Gap of Labor, Material and Mechanical Operation

No.	Material	Unit	Material Quantity	Budget	Market Price	Price Gap	Total of Price Gap
1	Other labor	WD	2,053.20	24.96	39.60	14.64	30,059
2	Other labor	WD	1,096.79	24.96	39.60	14.64	16,057
3	diesel oil	kg	5,088.12	3.04	5.70	2.66	13,555
4	gasoline	kg	1,928.14	3.22	6.08	2.86	5,513
5	Total						65,183

□ In accordance with the planning and design, the cost of broadcast and TV facilities will be calculated on the basis of 1000 Yuan/person.

□ In accordance with the planning and design, the cost for the construction of clinic will be calculated on the basis of 750 Yuan/m<sup>2</sup>. It is planned to build 80m<sup>2</sup>, and the budget will be Yuan 60000.

□ In accordance with the planning and design, the cost of house for public service will be calculated on the basis of 1200 Yuan/m<sup>2</sup>. It is planned to build 80m<sup>2</sup> in brick-woo structure, and the budget will be Yuan 96000.

□ In accordance with the planning and design, Yuan 78570 will be used for tree planting for the resettlement area, including Yuan 73962 for the trees along the both sides of the roads and Yuan 4608 for farmland windbreak construction. It is proposed that the cost come from the forest vegetation rehabilitation charge. It will amount for 11% of the forest vegetation rehabilitation charge. The details for the trees along the both sides of the roads are illustrated in Table 9-7.

Table 9-7(1) Construction Cost per Unit

Line No.	No.	Items	Note	Rate	Cost
1	1	Direct cost	□2□+□6□+□13□		52,878.79
2	2	Direct cost by quota	Direct cost		46,233.90
3	3	labor cost	Total of labor cost		20,623.50
4	4	material cost	Total of material cost		1,290.00
5	5	cost of mechanical operation	Total cost of mechanical operation		320.40
6	6	Other direct cost	□7□8□		2,978.03
7		Additional expenditure for winter construction	Total labor cost	6	1,237.41
8		Direct cost of the other 4 items	□9□12□		1,740.62
9		1. Use of tools	Total labor cost	4.22	870.31
10		2. Test and experiment	Total labor cost	0.88	181.49
11		3. Engineering orientation, double check, site clearance	Total labor cost	0.26	53.62
12		4. Additional construction	Total labor cost	3.08	635.20
13	9	On-site provision	□14□15□		3,666.86
14		temporary structure cost	Total labor cost	8.8	1,814.87
15		On-spot management cost	Total labor cost	8.98	1,851.99
16	12	Indirect cost	□17□19□		10,982.01
17		Enterprise management	Total labor cost	19.11	3,941.15
18		Labor insurance	Total labor cost	30	6,187.05
19		Financial affairs	Total labor cost	4.14	853.81
20	17	Profit	Total labor cost	16.41	3,384.32
21	18	Measurement of project quota	□1□+□16□+□20□	0.13	87.42
22		Salary adjustment within the quota	Total labor cost /22.12×2.43		2,265.60

23		Salary adjustment of machine operator	(total cost of mechanical operation×0.09/22.12□×2.43		3.17
24		Salary adjustment of management staff	(total labor cost+ total cost of mechanical operation×0.11□/22.12×1.12		1,046.01
25		Cost adjustment of mechanical operation	total cost of mechanical operation		320.40
26		price gap of material	Total price gap of labor, material and mechanical operation		555.86
27	20	Taxation	□1□+□16□+□20~26□	3.41	2,438.95
28	21	Construction cost	□1□+□16□+□20~27□		73,962.53

Table 9-7(2) Budget Estimation of per Unit

No.	Quota No.	Sub-Items	amount of works		Value (Yuan)		Including (Yuan)	
			Unit	quantity	Unit Price	Total Price	Labor Cost	Material Cost
1	B1-35	Site leveling, back filling and compacting, trenching 100 m <sup>2</sup>	100m <sup>3</sup>	30.00	34.13	1,024	704	
2	3-1	Site preparation of greening	10m <sup>2</sup>	1,500.00	11.88	17,820	16,590	1,230
3	3-12	Tree seedling, soil ball diameter 20cm	pc	3,000.00	1.13	3,390	3,330	60
4	B001	Tree seedling main material	pc	3,000.00	8.00	24,000		
5		Total				46,234	20,624	1,290

Table 9-7(3) Price Gap of Labor, Material and Mechanical Operation

No.	Material	Unit	Material Quantity	Supply Price	Market Price	Price Gap	Total of Price Gap
1	labor	WD	31.80	22.12	39.60	17.48	556
2	total						556

### 9.3.4. Compensation Rate for the Things Fixed on Land

The things fixed on land to be impacted by the inundation of Ertanggou Reservoir are scattered trees. The compensation rate will be calculated on the basis of the average data in case studies.

□1□ Scattered fruit tree: 60 Yuan/pc

□2□ Scattered timbre tree: 30 Yuan/pc

□3□ In accordance with Charge Rate on Funeral Service (2004 No. 1625), the cost of tomb relocation amounts to 1530 Yuan/set, including

- Remove: 360 Yuan/set
- Transportation: 500 Yuan/set
- Land occupation: 50 Yuan/set
- Funeral service: 400 Yuan/set
- Pit digging: 220 Yuan/set

### 9.3.5. Subsidy Rate for Other Items

- 1 The subsistence allowance in the transitional period will be considered for 3 years at the rate of 600 Yuan/person per year.
- 2 The education capacity charge will be calculated on the basis of 500 Yuan/person.
- 3 The field survey in the inundation-impacted area showed that the renovated houses amounted for 4% of the surveyed. The renovation costs will be calculated on the basis of 50 Yuan/m<sup>2</sup>.
- 4 The field survey in the inundation-impacted area showed that poverty-stricken households amounted for 45% of the surveyed. The housing subsidy for the poverty-stricken households will be calculated on the basis of 28000 Yuan/household. The criteria in identifying poverty-stricken household are illustrated in Table 3-5.

### 9.3.6. Compensation Rate for Special Structure (Infrastructure)

- 1 According to the scheme prepared by Turpan Prefecture Bureau of Hydrology and Water Resources, the budget for the reconstruction of the hydrological station nowadays in the inundation-impacted area will amount to Yuan 966,950.
- 2 According to Survey Report of Cultural Relics at Ertanggou prepared by Xinjiang Archaeological Institute, the ancient tombs and the petroglyphs will be excavated and protected with a budget of Yuan 180,000.
- 3 The simple road (grazing channel) of 2.5km will be inundated. It is planned to reconstruct the road to 3km. At the rate of 500,000 Yuan/km, the budget will be Yuan 1.5 million.

### 9.3.7. Reservoir Bed Clearance

In order to be sure of the safety operation of Ertanggou Reservoir, prevent the reservoir from water pollution and protect the people around/downstream the reservoir as well as to build basic conditions for the comprehensive development of

the water surface for aquiculture, tourism and recreation, the reservoir bed will be cleared before the impounding.

The clearance is classified into ordinary clearance and special clearance. The special clearance will be conducted on the principle of “One who manages and invests will be the one who will benefit”. The relevant orthority will be responsible to point out the technical specification of the reservoir bed clearance and organize the action. The ordinary clearance and special clearance will be done and completed at the same pace.

Yuan 100,000 is calculated to clear the bed of Ertanggou Reservoir at the rates of the following:

- 1□ Clearing forest land: 300 Yuan/mu
- 2□ Clearing structures: 300 Yuan/HH
- 3□ Sanitation and disinfection: Yuan 1500 for the current stage
- 4□ Clearing the flotage: Yuan 3545 for the current stage
- 5□ Reservoir bed treatment: Yuan 50,000 for the current stage

### **9.3.8. Other Expenditures**

According to Specifications Land Requisition and Resettlement for Water Conservancy and Hydroelectric Projects (SL290-2003), the other expenditures are calculated as follows:

- 1□ The expenditures for survey, design and scientific research is calculated at 3% of the total sum from 9.3.1 to 9.3.7 items.
- 2□ The expenditures for the implementation management is calculated at 3% of the total sum from 9.3.1 to 9.3.7 items.
- 3□ The expenditures for technical training is calculated at 0.5% of the total sum from 9.3.1 to 9.3.5 items.
- 4□ The expenditures for supervision and monitoring is calculated at 1.5% of the total sum from 9.3.1 to 9.3.7 items.
- 5□ The initial expenditure will amount to Yuan 300,000.



### 9.3.9. Contingencies

□1□ According to Specifications Land Requisition and Resettlement for Water Conservancy and Hydroelectric Projects (SL290-2003), the physical contingency is calculated at 10% of the total sum from 9.3.1 to 9.3.8 items.

□2□ The price contingency is set at the price gap of zero.

### 9.3.10. Taxation and Charges

□1□ According to Regulation on the Collection, Use and Management of Forest Vegetation Rehabilitation Charge (2002 No. 73) jointly promulgated by Ministry of Finance and State Forestry Administration and Notice Clarifying the Criteria for the Collection of Forest Vegetation Rehabilitation Charge (2006 No. 503) promulgated by Xinjiang Department of Forestry, the forest vegetation rehabilitation charge will be collected at the rate of 8 Yuan/m<sup>2</sup>.

□2□ According to Interim Regulations of the People's Republic of China on Farmland Occupation Tax (order of the State Council No. 511) and Stipulations on Implementing Regulations of the People's Republic of China on Farmland Occupation Tax (order of Xinjiang Government No. 159), the occupation tax is set to be 20 Yuan/m<sup>2</sup> for fruit plantations and farmland (the tax for basic farmland is 1.5 times as much as that for ordinary farmland and 5 Yuan/m<sup>2</sup> for forest land and grassland in Changji, Shihezi, Kalamayi, Turpan prefectures.

□3□ According to Circular on Issues Relevant to Land Uses by Water Resources and Hydropower Projects (Document 2001 No. 355 and Circular on Distribution of the Standard for Administrative Charging for Land Management (Document 2001 No. 500), farmland reclamation charge is collected from construction projects at the rate of 1000 Yuan/mu for ordinary farmland and 1500 Yuan/mu for basic farmland. Since this project will help reclaim 206 mu of farmland, which is far larger than the farmland, fruit plantations and grassland it occupied, the farmland resources are balanced. Therefore, no farmland recalamation charge will be collected from this project.

## 9.4. Total Investment to the Compensation due to the Inundation of Ertanggou Reservoir

The static total investment to the compensation for the land requisition and resettlement for the construction of Ertanggou Reservoir will be Yuan 22,156,800. The breakdowns are:

Items	Compensation (Yuan)	% in Total Compensation
resettlement	11,906,200	53.74
rehabilitation and reconstruction of special items	2,647,000	11.95

reservoir bed clearance	100,000	0.45
other expenditures	1,458,500	6.58
contingencies	1,611,200	7.27
tax and charges	4,434,000	20.01

The details are illustrated in Table 9-8 and 9-9.

Table 9-8 Budget of the Compensation due to the Inundation of Ertanggou Reservoir

No.	Items	Investment	Proportion
		10,000 Yuan	%
1	rural resettlement	1190.62	53.74
2	rehabilitation and reconstruction of special items	264.70	11.95
3	reservoir bed clearance	10.00	0.45
4	other expenditures	145.85	6.58
	1. survey, design and scientific research	43.96	1.98
	2. implementation management	43.96	1.98
	3. initial expenditure	30.00	1.35
	4. technical training	5.95	0.27
	5. supervision and monitoring	21.98	0.99
5	contingency	161.12	7.27
	1. physical contingency	161.12	
	2. price contingency		
6	Taxation and Charges	443.40	20.01
	1. forest vegetation rehabilitation charge	71.39	
	2. farmland occupation tax	65.55	
	3. occupation tax of natural grassland	233.35	
	4. occupation tax of forest land	44.62	
	5. occupation tax of fruit plantation	28.49	
7	Total investment to compensation	2215.68	100

Table 9-9 Compensation Budget Breakdowns due to Ertanggou Reservoir Inundation

Items	Sub-item	Sub-sub-item	Unit	Quantity	Unit Price	Investment
Section 1. Resettlement						1190.62
1.1. compensation for land requisition and resettlement subsidy	Total					358.67
	land requisition	1. farmland	mu	14.11	14096.96	19.89
		2. fruit plantation	mu	21.37	30233.92	64.61
		3. artificial pasture	mu	35.05	14096.96	49.41
		4. natural grassland*	mu	700.00	880	61.60
		5. house site	mu	16.67	5286.36	8.81

		6. forest land	mu	167.86	24747.72	188.32	
		7. threshing ground	mu	0.92	5286.36	0.49	
		8. abandoned land	mu	3.27	5286.36	1.73	
		9. growing crop	mu	14.11	881.06	1.24	
		10. alfalfa	mu	35.05	1762.12	6.18	
	Total					449.53	
1.2. compensation for houses and the accessory structures	1. house					259.19	
		1.1 barnacle structure	m <sup>2</sup>	4593.66	542.88	249.38	
		1.2 clay-wood structure	m <sup>2</sup>	180.7	542.88	9.81	
	2. sub-house	total					6.48
		2.1 barnacle structure	m <sup>2</sup>	216	300		6.48
	3. accessory structurees	total					183.86
		3.1 shed/stable					134.41
		3.1.1 barnacle structure	m <sup>2</sup>	6720.29	200		134.41
		3.2 fencing wall					25.14
		3.2.1 barnacle structure	m	2654	80		21.23
		3.2.2 wood structure	m	592	60		3.55
		3.2.3 wire fence	m	60	60		0.36
		3.3 oven	set	17	350		0.60
		3.4 stove	set	68	300		2.04
		3.5 toilet	set	18	300		0.54
		3.6 scattered tree	pc	669	30		2.01
	3.7 scattered fruit tree	pc	535	60		3.21	
3.8 tomb	set	97	1530		14.84		
3.9 cellarage	set	27	400		1.08		
1.3. compensation for infrastructure	total					309.25	
	1. site leveling					65.25	
	2. road to the outside					107.44	
	3. water supply and drainage					29.13	
	4. electricity supply					81.53	
	5. broadcast/TV facility		person	103	1000	10.30	
	6. clinic					6.00	

	7. house for public service					9.60
	total					23.32
1.4. resettlement transportation	1. travel		HH	21	1000	2.10
	2. Accommodation and food on the way		person	103	100	1.03
	3. property transportation		person	103	50	0.52
	4. property loss		person	103	500	5.15
	5. loss of working time		person	103	360	3.71
	6. temporary housing		person	103	900	9.27
	7. medical care		person	103	150	1.55
1.5. living allowance in the transitional period			person	103	1800	18.54
1.6. education capacity charge			person	103	500	5.15
1.7 renovation cost			m <sup>2</sup>	190.97	50	0.95
1.8. housing subsidy for the poverty-stricken households			HH	9.00	28000	25.20
	total					264.70
Section 2. Compensation for the Rehabilitation of Special Structure	1. hydrological station		set	1	966950	96.70
	2. simple road (grazing channel)		km	3	500000	150.00
	3. protection of cultural relics and historical site					18.00
Section 3. Reservoir Bed Clearance	Clearing structure and forest land; Sanitation and disinfection					10.00
Section 4.	total					145.85

Other Expenditures	1. survey, design and scientific research					43.96
	2. implementation management					43.96
	3. technical training					5.95
	4. supervision and monitoring					21.98
	5. initial expenditure					30.00
Section 5. Contingencies	total					161.12
	1. physical contingency					161.12
	2. price contingency					0.00
Section 6. Taxation and Charges	total					443.40
	1. forest vegetation rehabilitation charge		mu	167.86	5333.6	71.39
	2. Farmland Occupation Tax		mu			383.35
	2.1. farmland			49.16	13334	65.55
	2.2. natural grassland		mu	700.00	3333.5	233.35
	2.3. forest land		mu	167.86	3333.5	44.62
	2.4. fruit plantation		mu	21.37	13334	28.49
Section 7. static total investment to the compensation						2215.68

Note: \* refers to Class-3 in category 2.

## **10. Mechanism of Public Participation and Consultation**

### **10.1. Strategy of Public Participation and Consultation**

In the periods of formulating resettlement policy and plans as well as implementing the plans, the Project paid a great attention to the participation and consultation of/with the village commissions. In addition, the opinions of sociogroups, governmental institutions, communities and resettlers are carefully considered. All the stakeholders are encouraged to participate in the resettlement and re-construction. In the feasibility study and technical design of the preparation phase, the project offices solicited opinions from local people's congresses, people's political consultative conferences, sociogroups, township governments and stakeholder representatives on reservoir dam site selection, resettlement approaches and other resettlement issues. In the phase of resettlement preparation, the project resettlement offices (PRO) once again solicited opinions from all levels of local governments and resettler representatives on the policy of resettlement and compensation. With the supports of all levels of local governments, Resettlement Action Plan (RAP) is thus formulated. In the phase of the project implementation, all levels of PROs will further encourage the stakeholders to participate in the resettlement and production rehabilitation.

### **10.2. Public Consultation/Participation and Information Disclosure**

#### **10.2.1. Solicitation of Public Opinions**

During preparation phase and in the process of formulating RAP, all levels of local governments and resettler representatives participated in the following works:

- (1) All levels of PROs as well as the representatives of villages, villager groups and resettlers participated in the property investigation to be impacted by land requisition and structure demolition in the Project.
- (2) All levels of PROs invited local governmental staff and varieties of stakeholders to participate in the meetings of information publicity and consultation. In the meetings, the resettlement policies of national, provincial and prefecture levels as well as the relevant policies of the World Bank were publicized; and the opinions of the participants were solicited on how to mitigate the impacts such as of land requisition and structure demolition, how to resettle the impacted people and how to compensate by category. In the process of formulating RAP, special investigations were made to learn the special requirements of the ethnic minorities, and their opinions and proposals were solicited on the resettlement issues such as on the site selection for resettlement area, the rehabilitation of production conditions and the demolition of structures (including mosque).

(3) In the process of investigating the socio-economic impacts of the project, the local governments as well as the villages and resettlers contributed lots of supports and cooperation. It is evident that all the stakeholders participated in the preparation of RAP.

Time and Interviewers in the Consultation with the Resettlers for Er'tanggou Reservoir Construction

Time	Date	Place	Interviewer	Major Activities
1st	Jun 2008	Impacted communities	Staff of the World Bank project offices; Cao Peiwu (director of Turpan Water Resource Bureau); Paerhati (vice mayor of Turpan City Government); Zhu Jinggang, Abulitipu, Wupuer and Jiapaer (Shanshan County Water Resource Bureau)	Consultation with the resettlers
2nd	Sep 2008	As above	Maimaitijiang and Liu Yanjie (Xinjiang Institute); Abulaiti, Akebaer, Alimu and Aihemaiti (Turpan City); Wupuer and Jiapaer (Shanshan County)	Field investigation of the impacted properties of individual households
3rd	Oct 2008	As above	Maimaitijiang and Liu Yanjie (Xinjiang Institute); Ayixiamu, Abulaiti, Akebaer, Alimu and Aihemaiti (Turpan City); Wupuer and Jiapaer (Shanshan County)	Consultation with the resettlers and information publicity of the compensation policies for resettling
4th	Nov 2008	Impacted communities and the resettlements	Maimaitijiang and Liu Yanjie (Xinjiang Institute); Wupuer and Jiapaer (Shanshan County); Qiu Qingsong (ECIDI)	Consultation with the resettlers and information publicity of the project background and other issues
5th	Feb 2009	The resettlements	Maimaitijiang and Pang Xudong (Xinjiang Institute); Abulaiti (Turpan City); Wupuer and Jiapaer (Shanshan County)	Consultation with the original residents



(4) In order to strengthen the information publicity of the project and to further solicit the opinions of the stakeholders to be impacted by land requisition and structure demolition on the project construction and resettlement, before this RAP was prepared, PRO together with the institutions of survey and design distributed and collected questionnaires throughout the impacted areas by means of participatory investigations. These investigations basically covered all the villages and townships to be impacted by land requisition and structure demolition in the project. The investigated were of wide representativeness, the results of the investigations were highly reliable and willingness of the resettlers was truly reflected.

### **10.2.2. Approaches of Public Consultation/Participation and Information Disclosure**

During the investigation of the property indicators to be impacted by the land requisition and the preparation of RAP, lots of communication and consultation were made with the resettlers and the original residents. The contents of the communication and consultation included:

- (1) The interest of the resettler individuals should be abided by the overall interest of the state;
- (2) The people who are to resettle according to the RAP must resettle as scheduled under the circumstance that the compensation condition for the resettlement is settled;
- (3) The people who have already resettled should not return back without permission;
- (4) The obligations in Agreement of Compensation should be seriously fulfilled; and
- (5) For those who delay or refuse to resettle with unjustified excuses, the local governments or resettlement management institutions are entitled to apply to the people's court for forced resettlement.

### **10.3. Appeal Mechanism**

Although the resettlers were encouraged to participate throughout the process of preparing and implementing the RAP, there are still more or less varieties of problems in practicing the plan. In order to have the problems timely and effectively solved as early as possible for the smooth progress of land requisition, structure demolition and project construction, a transparent and effective channel of appeal has been set up by the project in favor of the rural resettlers, in addition to the existing governmental bureaus for letters and visits. The concrete procedures include:

Step 1:

If an ethnic resettler is not satisfied with the RAP, s/he can directly submit oral or written appeal to Turpan City Ethnic Affairs Commission or PRO. The said institutions will register the appeal and reply within 2 weeks.

Step 2:

If the resettler is not satisfied with the reply from Step 1, s/he can prosecute in a civil court according to the Civil Procedure Law of the People's Republic of China.

A resettler is entitled to prosecute any issue(s) in the resettlement, including the compensation criteria.

The resettlers will be informed of the above appeal channels through meetings or other patterns, so that the resettlers will sufficiently realize their right of appeal. At the same time, information publicity will be strengthened through media tools. The opinions and proposals from all the stakeholders on the resettlement will be complied by categories for the reference of all levels of resettlement institutions.

The appeal will be charge free to the resettlers. In the case that some fee is required, it will be recovered by the project offices in the budget line of contingency.

#### Solicitation of Public Opinions for Ertanggou Reservoir Construction

Contents of Investigation	Answer	Achievement (%)
1 <input type="checkbox"/> What do you think are the major problems impacting the local economic development?	Electric supply	0
	Transportation	85
	Water resource	85
	Natural resources	15
	Other	5
	No idea	0
2 <input type="checkbox"/> Do You know the construction of Er'tanggou Reservoir will be on-going very soon?	Yes	100
	No	0
3 <input type="checkbox"/> Do you think the construction of Er'tanggou Reservoir will help accelerate the local economic development?	Yes	100
	No	0
	No idea	0
4 <input type="checkbox"/> De you think the construction of Er'tanggou Reservoir is very necessary or not?	Yes	80
	No	0
	No idea	20
5 <input type="checkbox"/> The land requisition and structure demolition for the construction of Er'tanggou Reservoir will generate some impacts on the local people and local society. Do you think it is worthwhile or not?	Worthwhile	90
	Not worthwhile	0
	No idea	0
	No idea	10
6 <input type="checkbox"/> Should you think to support the national construction?	Should support	100

	No	0
	No idea	0
Questions and Answers:		
<p>1 <input type="checkbox"/> What do you think the construction of Er'tanggou Reservoir will influence on the society and your family?</p> <p>The general answers are: The construction of Er'tanggou Reservoir is a good project of poverty reduction in Shanshan County. It can help increase the financial income, reduce the burden over farmers, alleviate the pressure of irrigation water supply in the project area and alleviate the pressure of flood prevention downstream. In addition, it will help facilitate the export of local agro-products in favor of market prosperity, create better conditions for agricultural production and rural livelihood.</p>		
<p>2 <input type="checkbox"/> How do you think you will support the project construction?</p> <p>The general answers are: They will actively support the construction of Er'tanggou Reservoir by means of (i) information publicity in favor of the land requisition and resettlement, (ii) formulating practical RAP, (iii) fulfilling the resettlement tasks, (iv) strengthening the counterpart support and (iv) providing good service for the construction of Er'tanggou Reservoir.</p>		
<p>3 <input type="checkbox"/> What are your opinions and proposals on the land requisition and structure demolition for the construction of Er'tanggou Reservoir?</p> <p>The general answers are: In accordance with the laws and legal regulations, practical policies of compensation and resettlement should be worked out on the basis of opinion solicitation from the resettlers. The resettlers should be provided with varieties of facilities for the production and livelihood for the purpose that "the resettlement is smoothly carried out, the resettlers will have a stable livelihood in the resettlement areas, and the economic condition of the resettlers will be upgraded". The resettlement should be carried out on the basis of equity, impartiality and transparency. The compensation and subsidy should be timely released to the resettlers. It is forbidden to intercept or misappropriated the resettlement fund. More input of science and technology should be contributed to upgrading the agricultural production in the resettlement areas. The adjustment of agricultural structure should be accelerated. The resettlers should be exempted from irrigation tax and water tariff</p>		

## 11. Institution for RAP Implementation

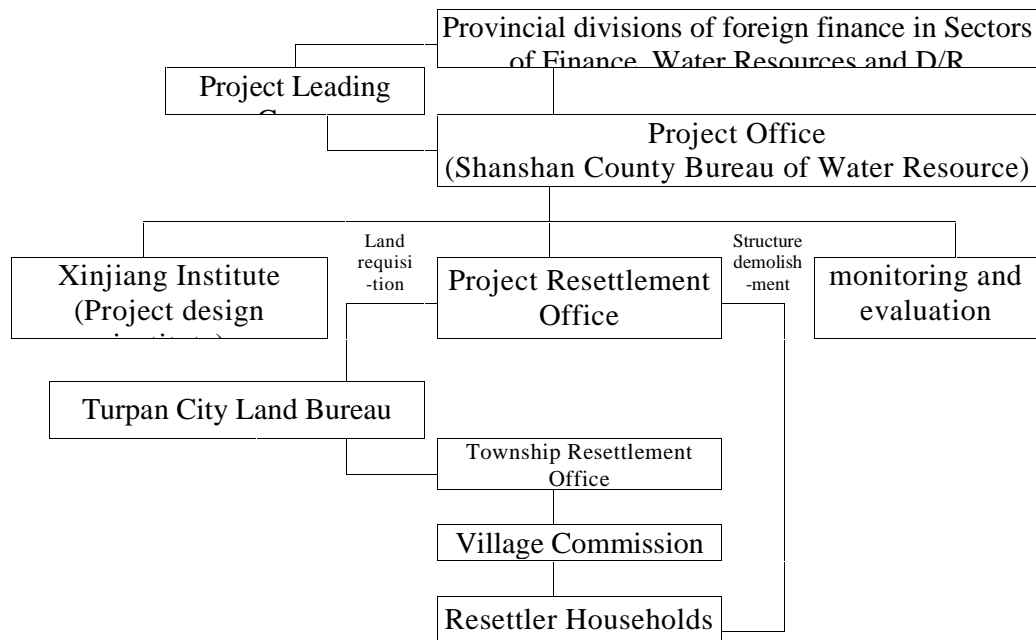
### 11.1. Resettlement Institution

For the successful implementation of the RAP, a set of resettlement institutions must be set up for the convenience of planning, coordinating and monitoring the resettlement activities. The institutions in charge of land requisition and structure demolition in the project include:

- 1 □ Provincial Level: division of foreign finance under Xinjiang Commission of Development and Reform, division of foreign finance under Xinjiang Department of Finance, division of foreign finance under Xinjiang Department of Water Resources.
- 2 □ Turpan Prefecture Leading Group for the Resettlement for the Construction of Ertanggou Reservoir
- 3 □ Shanshan County Ertanggou Reservoir Project Office
- 4 □ Turpan City Ertanggou Reservoir Project Resettlement Office
- 5 □ Project design institute
- 6 □ External independent agency of monitoring and evaluation

The provincial divisions are responsible for the coordination and decision-making as well as checking and supervision in the project implementation. Turpan prefecture leading group is responsible to coordinate the resettlement activities and formulate the relevant policies. Shanshan County project office is responsible to guide, organize, coordinate and supervise the concrete activities of resettlement in her county. Turpan City project resettlement office is responsible to formulate and implement the RAP. The project design institute is Xinjiang Survey Design & Research Institute of Water Resources and Hydropower. The external independent agency is responsible for monitoring and evaluating the resettlement.

### 11.2. Chart of Resettlement Institutions



### 11.3. Resettlement Institution and the Responsibility

A □ Turpan Prefecture Leading Group for the Resettlement for the Construction of Ertanggou Reservoir

The members of the group are the representatives of (i) Turpan Prefecture Government, (ii) bureaus under the prefecture government such as the bureaus of land administration, water resources, environmental protection, transportation, forestry, telecommunication, postal service, broadcast/TV, civil affairs, public security, legislation, development office and (iii) the townships related with the project. The major responsibilities of the group include strengthening the leadership in favor of the project construction, making sure that the land requisition and structure demolishment are smoothly practiced, formulating the resettlement policy, coordinating all the relevant sectors and institutions in land requisition and structure demolishment, and managing the daily affairs.

B □ Shanshan County Ertanggou Reservoir Project Office

The project office is located in the county bureau of water resources. The major responsibilities of this project management office include:

- 1 □ formulating policies of land requisition and structure demolishment;
- 2 □ entrusting the design institution to identify the scope to be impacted by the project and to make field surveys related with the land requisition and resettlement;

- 3  applying for certificate of land use and planning and certificate of land use for construction;
- 4  upgrading the capacity of the staff practicing land requisition and resettlement by means of technical training;
- 5  organizing and coordinating the preparation and implementation of the RAP;
- 6  managing the resettlement fund and supervising its use;
- 7  guiding, coordinating and supervising the progress of RAP implementation; and
- 8  directing and checking the activities of internal monitoring; formulating progress report of land requisition and resettlement.

C  Turpan City Ertanggou Reservoir Project Resettlement Office

The project resettlement office is located in Turpan City Bureau of Water Resources and is composed of the staff especially in charge of the structure demolition and resettlement. The responsibilities of the office mainly include:

- 1  assisting the design institution to identify the scope to be impacted by the project and to make field surveys related with the land requisition and resettlement; keep the data;
- 2  formulating and implementing the RAP;
- 3  upgrading the capacity of the staff practicing land requisition and resettlement by means of technical training;
- 4  organizing public consultation and information publicity of resettlement policies;
- 5  guiding, coordinating and supervising the progress of RAP implementation;
- 6  practicing resettlement and releasing resettlement fund on the basis of the agreement;
- 7  carrying out internal monitoring and formulating report on internal monitoring; and
- 8  assisting the activities of external monitoring.

D  Township Resettlement Office

With the township head in charge at the leading position, the township resettlement office is composed of (i) the representatives of the land administration station, police station, civil affair station and forestry station and (ii) the heads of the villages related. The major responsibilities of the township resettlement office include:

- 1  participating in the project surveys and assisting the preparation of the RAP;
- 2  organizing public participation and information publicity of the resettlement policies;
- 3  implementing, checking, monitoring and recording the resettlement activities in the township;
- 4  proceeding the procedures of resettlement;
- 5  releasing and managing the compensation fund;
- 6  supervising the land requisition, the demolition of houses and the accessory structures and the reconstruction of new houses in the resettlement area;
- 7  reporting the activities of land requisition, structure demolition and resettlement to county bureau of land administration and county resettlement office; and
- 8  coordinating to settle the conflicts and problems in the practical works.

#### E Village Commission and Villager Group

There is a resettlement working group under village commission and villager group. The members of the working group are the major heads of village commission and villager group. The responsibilities include:

- 1  participating in the socio-economic investigation and the surveys of project impacts;
- 2  organizing public participation and information publicity of the policies on land requisition and resettlement;
- 3  selecting the sites of resettlement and distribute house sites to the resettlers;
- 4  implementing the resettlement activities such as of the reclamation, adjustment and distribution of land resources; and organizing production development;
- 5  managing and releasing the resettlement fund;

- 6 forwarding the opinions and proposals of the resettlers to the upper authorities;
- 7 reporting the progress of RAP implementation; and
- 8 helping the resettlers solve difficulties.

#### F Project Design Institute

Xinjiang Survey Design & Research Institute of Water Resources and Hydropower will serve as the project design institute. Its major responsibilities include:

- 1 conducting project designs;
- 2 identifying the scope of demolition and resettlement;
- 3 surveying the properties to be impacted by the demolition and resettlement; carrying out socio-economic investigations and impact analysis; and
- 4 assisting the resettlement offices to complete the resettlement tasks.

#### G External Independent Agency of Monitoring and Evaluation

The external independent agency of monitoring and evaluation will be responsible for:

- 1 This is an independent agency of monitoring. It will observe all the aspects related with the RAP implementation. It will submit monitoring and evaluation report to the World Bank through the project resettlement office. Its responsibilities will be described in details in the chapter on independent external monitoring;
- 2 assisting the project resettlement office to prepare the RAP; and
- 3 providing technical assistance to the project resettlement office in the aspects of data investigation and process.

### **11.4. Institutional and Personal Capacity in RAP Implementation**

For the smooth implementation of the RAP, Shanshan County Ertanggou Reservoir Project Office and Turpan City Ertanggou Reservoir Project Resettlement Office are equipped with adequate staff especially for the project activities of land requisition and resettlement, so that an effective system with smooth information exchange is established covering all the related levels. The staff are enriched with technical and administrative capacity. In particular, they are quite experienced in land requisition



and resettlement. The name list of the staff in charge of resettlement is presented in the following table.

The Name List of the Staff in Charge of Resettlement

No.	Name	Working Unit	Position	Telephone
1	Sun Jianxin	Turpan Prefecture Government	Vice Chairman	0995-8529090
	Cao Peiwu	Turpan Prefecture Government	Deputy secretary-general	0995-8535146
	Ye Yongxin	Turpan Prefecture Resettlement Bureau	Director	13699901236
2	Paerhati	Turpan City Government	Vice Chairman	13909951065
	Tang Hongchuan	Turpan City Bureau of Water Resources	Director	13909950680
3	Hua Baohua	Shanshan County Government	Vice Chairman	0995-8381768
	Zhu Jinggang	Shanshan County Bureau of Water Resources	Director	13909958286
	Wu Guitong	Shanshan County Bureau of Finance	Director	13899312618
	Li Ming	Shanshan County Bureau of Civil Affairs	Director	13909953068

### 11.5. Institutional Capacity Building in Resettlement Management

#### 1 Staffing

All levels of resettlement management institutions will be equipped with adequate staff relative rich in technical and administrative experiences.

#### 2 Technical Training

All levels of resettlement management institutions will upgrade the capacity of their staff by means of technical training, so that they will have better knowledge of the resettlement policies of both the World Bank and the local authorities.

The technical training of the township resettlement office staff will also be strengthened, so that their working capacity will be upgraded both in technical service and policy application.

#### 3 Sufficient Guarantee in Financial and Equipment Support

□4□ Database Establishment

Project database will be established for smooth information flow throughout the project. It will also help the decision-makers in resettlement management.

□5□ Reporting Mechanism

Both the reporting mechanism and internal monitoring will be strengthened to timely solve the problems observed.

□6□ Establishment of the Mechanism of External Monitoring and Evaluation and the Pre-warning System

## 12. Procedures and Plan of RAP Implementation

### 12.1. Combination of RAP Implementation with Construction Progress

The schedule of RAP implementation should be formulated according to the contents of construction, amount of works, time limit for the project and the progress of resettlement. The schedule of land requisition and resettlement will be linked with the construction schedule of each of the construction items. The basic principles of the schedule formulation are as follows:

□1□ The activities of land requisition and rural resettlement should be arranged under the consideration of the features of agricultural production. Whenever possible, such activities should be arranged in farmer's leisure season so as to generate less impact as possible on the agricultural production.

□2□ The house demolition should be done step by step. The demolition of a house must be completed before the startup of the construction item that will be impacted by the house.

□3□ The compensation fund is released normally around 5 days before the house demolition.

□4□ The people to be resettled should be informed of the house demolition at least in 3 months' notice. The people are entitled to have an additional 2 months from the end of the above notice to the deadline of house demolition for the convenience that the new house is polished. The impacted people can stay in the original house until the construction of the new house is completed.

□5□ The construction of new houses will be scheduled in line with the progress of the project construction. In the case of need, the period can be elongated to a certain extent.

□6□ The land requisition and house demolition should be completed before the startup of the construction item that will be impacted by them.

□7□ The adjustment and distribution of land resources in need should be done between the 2 shifts of crop growing.

□8□ The construction of public service structures and other infrastructures should be completed at least 20 days before the completion of the resettlement houses, so as to mitigate the impact on the resettlers.

□9□ The reconstruction of the special structures impacted by the project will be arranged at the completing period of project construction at the planned reconstruction sites, so as to mitigate the impact on the reconstruction.

□10□The training of the resettlers should, if applicable, be arranged at farmers leisure time; and

□11□The resettlement of public institutions will be arranged by the competent authorities of the institutions themselves on the basis of the project construction.

## **12.2. Key Points in the Requisition and Temporary Occupation of Land Resources**

□1□The scope of land requisition and structure demolition should be finally recognized according to the design map of each of the construction items related. The field survey of the land requisition and structure demolition should be completed before the startup of the project construction.

□2□The field surveys of land requisition and structure demolition will be done in accordance with the redline map of land requisition and structure demolition. The survey should be made at the joint efforts of the project resettlement office and the property owners before signing the agreement of resettlement compensation.

□3□The project resettlement office will invite the resettlers in meetings of information publicity on the policies of land requisition, resettlement and compensation. Before signing the agreement of resettlement compensation and after the meetings of information publicity, the notice of land requisition and structure demolition will be publicized.

□4□Before the startup of any construction activities involved in land temporary occupation, the corresponding procedures of land use should be completed.

## **12.3. Key Points of Structure Demolishment and Reconstruction**

□1□The project resettlement office will invite the resettlers in meetings of information publicity on the policies of land requisition, resettlement and compensation. Before signing the agreement of resettlement compensation and after the meetings of information publicity, the notice of land requisition and structure demolition will be publicized.

□2□After the field-survey and calculation of the properties to be impacted and the publicity of notice of land requisition and structure demolition, agreement of resettlement compensation will be signed between the project resettlement office and the resettlers.

□3□The subsistence allowance in the transitional period will be released before the resettlement.

- 4□ The infrastructures should be constructed before the other items in the project. The reconstruction should be done before the demolition.
- 5□ The compensation fund should be released after signing the agreement of resettlement compensation and before the resettlement.
- 6□ The whole process of resettlement will be monitored and supervised to make the resettlers satisfied.
- 7□ Before the construction of resettlement structures, the opinions of the resettlers on the designs should be solicited to improve the designs and the construction.

#### **12.4. RAP for Rural Resettlers**

In accordance with the overall schedule, the construction of Ertanggou Reservoir will be completed in 3 years. On the basis of the RAP, the construction of resettlement area together with the rehabilitation of production and livelihood conditions will begin in March 2010 and complete by the end of December 2011. After the construction is checked as qualified, the resettlement together with the release of compensation fund and subsidies will be completed and the before June 2011.

##### **12.4.1. Rehabilitation of Temporarily Occupied Land**

The land to be temporarily occupied by the construction of Ertanggou Reservoir is of barren ground. The rehabilitation will be done in line with the evaluation report on soil conservation.

##### **12.4.2. House Construction in Resettlement area**

The house construction in the resettlement areas will begin in March 2010 and be completed by the end of the year. In June 2011, the houses and the accessory structures in the inundation-impacted area will begin to be demolished and the resettlers will move to the new houses.

##### **12.4.3. Reconstruction of the Structures to be Temporarily Impacted**

There is no structure to be temporarily impacted in the inundation area of Ertanggou Reservoir.

##### **12.4.4. Rehabilitation Plan for the Vulnerable Groups**

There are 24 people in 9 households (in addition to one disabled person) have been identified as in vulnerable groups in the inundation-impacted area by the construction of Ertanggou Reservoir. In the project implementation, a certain amount of special

subsidy for house construction will be given to these vulnerable people. In the case that a poverty-stricken household is proven to be too difficult to built his/her own house in the resettlement area. The poverty-stricken household can submit an application to the project resettlement office, which together with the local governments will make the decision on the basis of the actual situation. The rate of the special subsidy can be the lowest compensation rate for resettlement house construction, namely 28,000 Yuan/household.

In the case that the above measures are still not enough to solve the problems that the vulnerable groups suffer from, the local governments promise to take the following actions:

□1□The vulnerable groups in the project refer to disabled people, single and childless aged people, orphans and the people living under poverty line. In the project implementation, these people will be possible to enjoy a certain amount of special subsidy for house construction.

□2□In the project implementation, subsistence allowance will be provided to the resettlers considering the actual situation so as to help them overcome the possible difficulties during the resettlement.

□3□In the project implementation, a poverty-stricken household will be given priority in applying for credit from local rural credit cooperatives with the guarantee of the village collective.

□4□In the project implementation, the local village collectives will help the vulnerable groups to select house sites with their permission and organize labors to help them with resettling and new house construction.

#### **12.4.5. Rehabilitation and Reconstruction of Special Structures**

□1□On the basis of Law of Cultural Relics Protection and according to the information from Xinjiang Archaeological Institute, the cultural relics and historical sites within the inundation-impacted area will be properly protected before the construction of Ertanggou Reservoir (or December 2009).

□2□The reconstruction of the hydrological station in the inundation-impacted area of resettler will be completed before December 2011.

#### **12.5. Social Security for Resettling Landless Farmers**

All levels of project resettlement offices will encourage public participation, information disclosure and public supervision in handling issues of social security for resettling landless farmers. By means of strengthening internal and external

monitoring and setting up effective and smooth mechanism of information feedback, the time required to solve problems will be shortened in favor of the project implementation.

## 12.6. RAP for the Construction of Ertanggou Reservoir

In accordance with the overall schedule, the RAP implementation will begin in 2010 and be completed in 2011. The details are illustrated in Table 12-1.

Table 12-1. Schedule of RAP Implementation for the Construction of Ertanggou Reservoir

No.	Planned Actions	Planned Time	Remarks
1.	Land requisition		
1.1	Identifying the inundation line of the reservoir and setting permanent boundary marks	2009	
1.2	Investigating the present situation of land use	2009	
1.3	Formulating policy of compensation	2009	
1.4	Signing agreements of land requisition and compensation	2009	
1.5	Releasing compensation fund for land requisition	2010	
1.6	Proceeding procedures of land requisition	2009	
1.7	Distributing land resources and house sites	2011	
1.8	Publicizing compensation policy and compensation rate for land requisition	2009	
2	House demolition and construction		
2.1	Surveying houses and the accessory structures in the inundation-impacted area	2010	
2.2	Publicizing the properties of the resettlers to be inundation-impacted	2008	Done
2.3	Publicizing compensation policy and compensation rate for house	2009	
2.4	Releasing compensation fund for land requisition for house and the accessory structures	2010	
2.5	House construction in the resettlement area	2010	On-going
2.6	Demolishing houses in the inundation-impacted area	2011	
2.7	Releasing compensation fund	2010	
2.8	Resettlers moving into the new houses	2011	
2.9	Signing compensation agreements with the resettlers	2010	
3	Reservoir bed clearance		
3.1	Carrying out reservoir bed clearance	2012	
3.2	Checkup and acceptance of the achievement of reservoir	2012	

	bed clearance		
4	Rehabilitation of special structures		
4.1	Reconstructing hydrological station	2010	Done
4.2	Excavating and protecting ancient tombs	2009	Done
4.3	Rehabilitation and reconstruction of grazing channel	2011	Done
5	Others		
5.1	Releasing compensation fund for growing crops	2011	
5.2	Releasing subsistence allowance for the transitional period to the resettlers	2012	
5.3	Releasing expenditures for traveling, temporary housing, transportation, medical care and so on	2011	Optional in time



### 13. Financial Management for Resettlement

#### 13.1. Financial Balance for Resettlement

The static total investment to the compensation for the land requisition and resettlement for the construction of Ertanggou Reservoir will be Yuan 22,156,800. The breakdowns are:

Items	Compensation (Yuan)	% in Total Compensation
resettlement	11,906,200	53.74
rehabilitation and reconstruction of special items	2,647,000	11.95
reservoir bed clearance	100,000	0.45
other expenditures	1,458,500	6.58
contingencies	1,611,200	7.27
tax and charges	4,434,000	20.01

On the basis of 100 m<sup>2</sup>/HH, the houses of brick-wood structure for 21 households will require Yuan 1,475,900. On the basis of 80 m<sup>2</sup>, the houses of brick-wood structure for public service will require Yuan 96,000 (Note: The compensation fund of Yuan 21,700 (40m<sup>2</sup>×542.88 Yuan/m<sup>2</sup>) for the public service house in the previous plan will be used for the construction of gate and fencing walls). On the basis of 80 m<sup>2</sup>, the houses of brick-wood structure for clinic will require Yuan 60,000. The house construction in the resettlement area will required Yuan 1,631,900. The compensation fund for private houses will amount to 2,811,800 (excluding the compensation funds for school, house of public service, accessory, but including the compensation funds for sub-houses and the special subsidy for the poverty-stricken households). According to financial analysis, the compensation fund for private houses is Yuan 1,335,900 more than the cost of house construction. This surplus will be distributed to the resettlers on the basis of their new floorage, or be used for enlarging the floorages or constructing accessory structures on the basis of the opinion solicitation from the resettlers. The compensation fund for private accessory structures will be released to the due owners. The compensation fund of Yuan 75,200 (138.5m<sup>2</sup>×542.88 Yuan/m<sup>2</sup>) for school will be used for the enlargement or maintenance of Bakaner Village School.

According to the production recovery plan in Chapter 5.5.3, a total of Yuan 2,907,800 will be required for the production recovery in the resettlement area. The compensation fund for land requisition will amount to 2,980,700 (excluding the compensation for growing crops and trees). The compensation fund for land requisition is Yuan 72,900 more than the cost of land reclamation. The surplus can be used to mend up the monetary deficiency in RAP implementation. According to the feasibility study report from Xinjiang Agricultural University, the inundation-impacted forest is natural protection forest, and the ownership belongs to the

collective. Therefore, the compensation fund for forest land will be used for the production recovery in the resettlement area, while the compensation fund for the trees will be used for agricultural/animal husbandry production or managed by village collectives. The forest vegetation rehabilitation charge will be used for tree-planting in the resettlement area or suitable forestry land.

### **13.2. Annual Investment Plan**

#### **A Principles of Fund Release**

□1□ All the costs related with land requisition and structure demolition should be calculated into the total budget of the project construction. The compensation funds for land requisition and structure demolition as well as other funds will be released to the due person or institution by the project resettlement office.

□2□ The compensation fund for land requisition will flow from the project resettlement office to the impacted administrative village through banking system. On principle, this fund will be used for the production recovery in the villager groups directly impacted by the project.

□3□ The project resettlement office will release the compensation fund for house to the resettlers before the construction of new houses. In the case that the fund is released in installments, the last installment will be realized by the completion of the new house.

□4□ The compensation fund for land will be released 3 months before the actual land requisition.

□5□ The compensation fund for the special structures will be released 3 months before starting up the construction.

□6□ For the smooth implementation of the RAP, all levels of the project offices must set up financial and monitoring agencies to make sure that all the project funds are timely positioned.

#### **B Financial Agency for Resettlement**

□1□ The financial agencies respectively in the project resettlement office, Turpan City Bureau of Land Administration, the project townships and the project village commissions will be responsible for the management of the compensation fund for rural land requisition.

□2□ The financial agency in the project resettlement office will be responsible for the management of the compensation fund for rural houses and the special structures.

□3□The resettlement fund will flow level by level on the basis of financial management mechanism. All levels of institutions will strictly follow the regulations of financial settlement and auditing. The financial management will be regularly checked and reported to timely solve the problems.

□4□The resettlement fund should be used only for the designated purposes. It is forbidden to intercept or misappropriated the resettlement fund.

#### C□Plan of Annual Investment

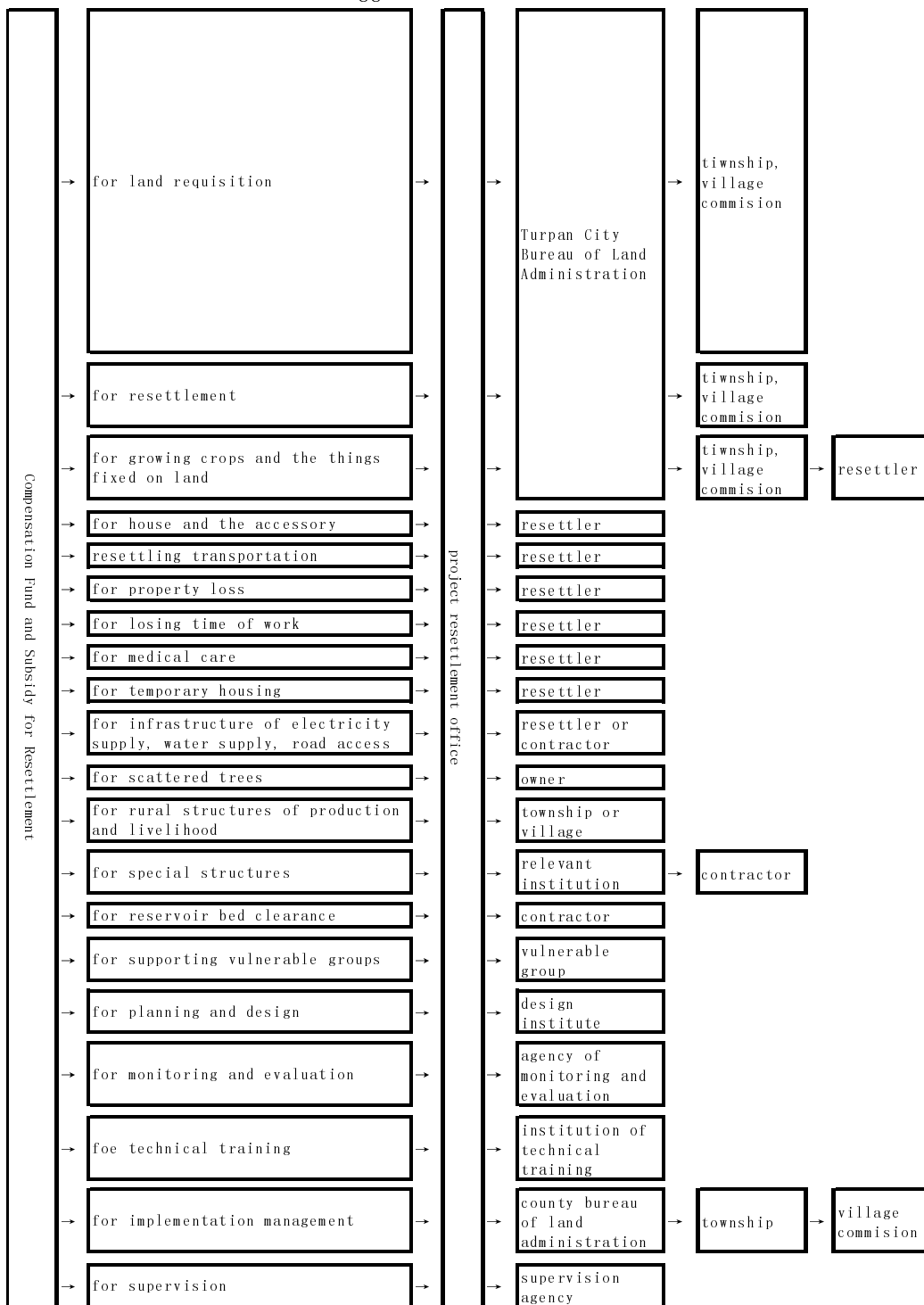
According to the preliminary plan of annual investment to the construction of Ertanggou Reservoir, the investment for the 1<sup>st</sup>, the 2<sup>nd</sup> and the 3<sup>rd</sup> year will amount to 60%, 20% and 20% of the total investment to compensation, respectively.

### **13.3. Financial Source and Cash Flow**

According to the project schedule, the resettlement fund will be composed of 2 parts i.e. subsidy from the Central Government (70%) and local counterpart fund (30%).

On the basis of the compensation policy and rates in the RAP, the compensation agreement for land requisition will be signed between the project resettlement office and Turpan City Bureau of Land Administration, the compensation agreements for land requisition and the things fixed on it will be signed between Turpan City Bureau of Land Administration and the project townships and the project village commissions, the compensation agreements for houses and the accessory structures will be signed between the project resettlement office and the project resettlers, the compensation agreements for the rehabilitation of special structures will be signed between the project resettlement office and the relevant institutions. The compensation fund will be released on the basis of the items, quantity, time and cost as stipulated in the compensation agreement for land requisition and houses. The project resettlement office will pay the compensation fund for land requisition to township resettlement offices through banking system, and the township resettlement offices will transfer the money to the village commissions or villager groups. The compensation fund for the things fixed on land will flow to their due owners through the village commission. The project resettlement office will release the compensation fund for house directly to the owner. The compensation fund for the rehabilitation of special structures will flow from the project resettlement office to the relevant institutions through banking system. The cash flow chart is presented below:

Cash Flow of Resettlement Compensation Fund  
for Ertanggou Reservoir Construction



## 14. Mechanism of Monitoring and Evaluation and Reporting

The World Bank involuntary resettlement policy (OP4.12) and the World Bank guidelines on monitoring and evaluation (M&E) for the resettlement projects in China will be highly respected for the smooth implementation of the RAP. The resettlement activities in this project will be regularly monitored and evaluated by means of internal and external monitoring and evaluation.

### 14.1. Internal Monitoring and Evaluation

#### □1 □ Objectives

The objective of internal monitoring is to make all levels of the project resettlement institutions function properly in the project implementation. By means of internal supervision over the whole process of resettlement preparation and implementation, the progress of resettlement is timely managed to make sure that the works of land requisition and resettlement are smoothly completed as scheduled in the RAP.

#### □2 □ Institutions and Staff

The internal monitoring agency for the project resettlement will be composed of the provincial project office, prefecture/county project offices and the relative institutions such as bureaus of land administration. These institutions will be equipped with leaders specially in charge of the resettlement in the project. These leaders should have rich experience in resettlement issues and be capable enough to coordinate all the sectors involved in resettlement. The staff in the institutions should also knowledgeable enough in dealing with resettlement and social issues to fulfill its due responsibility.

#### □3 □ Contents of Internal Monitoring

According to the internal monitoring plan, the contents of internal monitoring will include:

- resettlement, the distribution of house sites and the construction of new houses;
- the release and use of the compensation fund for land requisition, and the progress and quality of the production development activities;
- the resettling progress of the public institutions, the release of the compensation funds, and the rehabilitation of the public structures;

- the reconstruction and rehabilitation of infrastructure and the special structures, and the recovery of the production and livelihood of the vulnerable groups;
- the investigation and management of the major problems within the resettlers and the project resettlement institutions in RAP implementation;
- the income recovery of the resettlers after resettlement;
- the release and use of the resettlement compensation funds;
- the public participation and consultation in the RAP implementation;
- technical training and the effect in the resettlers; and
- the working units, training, working time and efficiency of the local resettlement offices.

#### 4 Implementation Procedures

In the project implementation, the project offices at county and prefecture levels should timely record and submit the information of the rural resettlement according to the monitoring formats so as to keep the monitoring activities continuous. All levels of the project offices from provincial to county levels will regularly check the project implementation.

In the above mechanism of monitoring operation, information tables of stipulated format should be prepared in favor of the continuous information flow from the grass-root level of the project implementation to the provincial project office. All levels of the project management offices and resettlement offices are important components of the internal monitoring system, and regular checks will be done.

#### 5 Reporting Mechanism of Internal Monitoring

The project resettlement offices will submit quarterly reports of project progress to county and provincial project offices. Provincial project office will be responsible to submit semi-annual report of internal monitoring to the World Bank. The data in the report tables will be the latest information of the previous 6 months. By means of information comparison, the progress of land requisition, resettlement and compensation fund release will be presented. The some of the table formats are as follows.

Table 1. Progress Report of Land Requisition and Structure Demolishment

County \_\_\_\_\_ Township \_\_\_\_\_

Up to the Date: \_\_\_\_\_ Year \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_

Date of Reporting: \_\_\_\_\_ Year \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_

Items		Unit	Quantity Planned	Quantity Achieved	Accumulation	% Achieved
Land	Permanent occupation	mu				
	Temporary occupation	mu				
	Release of compensation fund	10,000 Yuan				
House	Demolishment	m <sup>2</sup>				
	Release of compensation fund	10,000 Yuan				
Compensation for infrastructure and special structures		10,000 Yuan				
Training		person				
Employment		person				
Land adjustment		mu				

Prepared by: \_\_\_\_\_ Approved by: \_\_\_\_\_ Official seal: \_\_\_\_\_

Table 2 Progress of Financial Management

County \_\_\_\_\_ Township \_\_\_\_\_

Up to the Date: \_\_\_\_\_ Year \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_

Date of Reporting: \_\_\_\_\_ Year \_\_\_\_\_ Month \_\_\_\_\_ Day \_\_\_\_\_

Items Impacted	Description*	Unit/Quantity	Fund Required (10,000 Yuan)	Compensation Received (10,000 Yuan)	Compensation Adjusted	% of compensation
Village 1						
Collective						
Household						
Institution						

Prepared by: \_\_\_\_\_ Approved by: \_\_\_\_\_ Official seal: \_\_\_\_\_

Note: \* describe the information such as of training, employment and/or subsidy to vulnerable groups and so on.

## 14.2. External Monitoring and Evaluation

The external monitoring and evaluation is mainly to carry out regular M&E over the activities of land requisition and resettlement from outside the resettlement

institutions so as to evaluate whether the objectives of resettlement are achieved. Through external M&E, evaluation remarks and proposals will be contributed concerning to the whole process of resettlement and the rehabilitation of the production and livelihood conditions, so that it can also serve as a pre-warning system of the project implementation agencies and a channel through which the resettlers can express themselves.

#### □1□ Benchmark Investigation

The external M&E agency will make benchmark investigations of the villages, villager groups and resettlers to be impacted due to land requisition, so that the benchmark information of production and livelihood of the resettlers to be monitored will become available. The investigation of the production and livelihood will be carried out semi-annually so as to follow up the changes in the production and livelihood. The methodology of the investigation will include case study (Percentage of Random Sampling: 5% of the impacted households due to land requisition, and 20% of the impacted households due to house demolition), interview and field observation. The data collected will then be analyzed and the evaluation is made.

#### □2□ Regular Monitoring and Evaluation

During the RAP implementation, the external M&E agency will carry out regular follow-up monitoring (twice a year) by means of field observation, case study and interview. The monitoring activities will include:

- a. the release of compensation fund (including quantity);
- b. the preparation of the resettlement site, whether it is sufficient;
- c. the construction of residential houses;
- d. the resettlement of the impacted people;
- e. training;
- f. the support to the vulnerable groups;
- g. the rehabilitation and reconstruction of infrastructures and special structures;
- h. the arrangement and recovery of production;
- i. the compensation for the lost properties;
- j. the compensation for the lost time of work;



- k. the subsidy for the transitional period;
- l. the schedule of the above activities (applicable any time);
- m. the organizational network of resettlement institutions;
- n. the use of the compensation fund for collective land resources, and the income of the resettlers;
- o. the employment of the labor forces, and income generating; and
- p. whether the impacted people have benefited from the project?

3 Public Consultation

The external M&E agency will attend the meetings of public consultation in the RAP implementation so as to evaluate the effect of public consultation.

4 Complain Issue

The external M&E agency will regularly visit the impacted villages and villager groups. It will also visit all levels of the project management offices and the project resettlement offices that are to receive and deal with the complaints. The management of the complaints will be learnt. The agency will visit the complaining resettler. To solve the existing problems, the agency will contribute proposals so as further to push forward the RAP implementation.

### **14.3. Monitoring Indicators**

- a. socio-economic indicators: per capita net income, GDP, employment rate and so on;
- b. institutional indicators: staff constitution, staff capacity and capability, regulations and systems, equipments, rate of the managed issues;
- c. impacts of land requisition on the resettlers: the releasing rate of compensation fund, patterns of production arrangement, change rate of economic income, employment rate, rate of satisfaction with the resettlement and so on;
- d. resettler: the releasing rate of compensation fund, location of house sites, house reconstruction, rate of satisfaction with the resettlement and so on; and
- e. infrastructure: the releasing rate of compensation fund, rate of function rehabilitation and so on.

#### **14.4. Post Monitoring and Evaluation**

After the completion of the project implementation and on the basis of monitoring and evaluation, the project will be post-monitored over the activities of resettlement. The contents of the evaluation will mainly include the successful experiences and learnt lessons in house demolition and land requisition so as to accumulate experiences in favor of the future similar projects. The institute that is to carry out the post-evaluation will formulate evaluation guidelines, set up system of evaluation indicators, make socio-economic investigation and analysis and prepare Post-evaluation Report on Resettlement due to the Construction of Ertanggou Reservoir Funded by the World Bank Loan. This report will be submitted to the provincial project office and the World Bank.

#### **14.5. Plan of Report Formulation**

The draft of this RAP was completed in December 2008 and preliminarily evaluated by the resettlement experts of the World Bank. In accordance with the recommendations of the resettlement experts of the World Bank, the revised draft of this RAP was completed and passed the pre-evaluation of the World Bank in March 2009. In accordance with the remarks for improvement in the pre-evaluation, the re-revision was completed in August 2009 and will be submitted to the World Bank through Xinjiang Foreign Fund Financed Project Office.

### 15 Table of Resettlers Rights

Table of Resettlers Rights due to the Construction of Ertanggou Reservoir

Impacts	The Impacted	Policy of Compensation	Criteria
Permanent occupation of land	Land users, village commissions	<ol style="list-style-type: none"> <li>1) The compensation funds for land and collective properties as well as resettlement subsidy will be released directly and in full to the village economic organization or the village commission.</li> <li>2) The compensation funds for growing crops and the things fixed on land will be released to the owner.</li> </ol>	<p>Criteria of land compensation fund and resettlement subsidy:</p> <p>farmland -- 14096.96 Yuan/mu, fruit plantation -- 30233.92 Yuan/mu, artificial pasture -- 14096.96 Yuan/mu, natural grassland -- 880 Yuan/mu, forest land -- 14069.68 Yuan/mu, growing crops -- 881.06 Yuan/mu, alfalfa -- 1762.12 Yuan/mu, house site/threshing ground/abandoned land -- 5286.36 Yuan/mu</p>
Demolishment of houses	Owner	<ol style="list-style-type: none"> <li>1) The compensation for house: On the basis of the structure type, quality and reconstruction cost.</li> <li>2) The resettlement subsidy will be calculated on the basis of travel distance, quantity of properties, means of transportation and time.</li> <li>3) The infrastructure compensation fee will be calculated on the basis of the designed structures at resettlement area, including new site requisition and site leveling as well as the structures of protection, drainage, water supply, electricity supply, rural roads and so on.</li> <li>4) The subsistence allowance in the transitional period will be calculated under the combination of the plan of livelihood arrangement.</li> </ol>	<p>The compensation rates for rural houses and the accessory structures: Stone-wood structure -- 542.88 Yuan/m<sup>2</sup>, clay-wood structure -- 542.88 Yuan/m<sup>2</sup>, sub-house -- 300 Yuan/m<sup>2</sup>, shed/stable -- 200 Yuan/m<sup>2</sup>, stone fencing wall -- 80 Yuan/m, wood or wire fence -- 60 Yuan/m, toilet and stove -- 300 Yuan/set, over -- 350 Yuan/set, cellarage -- 400 Yuan/set.</p> <p>Resettlement transportation -- 1000Yuan/person, subsistence allowance in the transitional period -- 1800 Yuan/person, post-support -- 600 Yuan/person annually</p>

<p>Special structures and the things fixed on land</p>	<p>Owner</p>	<p>1) Upon the project office releasing compensation fund for the impacted special structure to the owner institution, the owner institution will be responsible for the rehabilitation and reconstruction. Another option is: The project office rehabilitate and reconstruction in line with the original standard and scale.</p> <p>2) The compensation for the things fixed on land will be calculated according to the relevant stipulation.</p>	<p>Rates of construction: Grazing channel (sand-gravel surface) – 500000 Yuan/km, protection of ancient tombs and petroglyphs – 180000 Yuan, hydrological station – 966950 Yuan/set, timbre tree – 25 Yuan/pc, fruit tree – 60 Yuan/pc, tomb removal -- 1530 Yuan/set</p>
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## 16. Annexes and Maps

### 16.1. Annexes

Annex 1. Opinion Letter on The Protection of Cultural Relics in the Construction of Ertanggou Reservoir, Turpan (2008 No. 78)

Annex 2. Approval on Resettlement due to the Construction of Ertanggou Reservoir (2998 No. 178)

Annex 3. Letter on Surveys of Index in Terms of Material Products in the Inundation-Impacted Area of Ertanggou Reservoir (2008 No. 74)

Annex 4. Resettlement Scheme of Ertanggou Hydrological Station

Annex 5. Summary Table of the Conformed Index in Terms of Material Products in the Inundation-Impacted Area of Ertanggou Reservoir in Shengjin Township

Annex 6. Notice on the Establishment of Shanshan County Leading Group for the Resettlement for the Construction of Ertanggou Reservoir (2009 No. 67)

Annex 7. Application for the Forest Land Occupation and Tree Harvest in the Inundation-impacted Area for the Construction of Ertanggou Reservoir in Qialekan Village of Shengjin Township, Shanshan County (2009 No. 31)

Annex 8. Resettlement Scheme for the Construction of Ertanggou Reservoir in Shanshan County (2009 No. 68)

Annex 9. Scheme of Resettlement Land Distribution due to the Construction of Ertanggou Reservoir in Shanshan County, Xinjiang

Annex 10. Letter of Commitment on Vegetation Rehabilitation at Other Places due to the Forest Land Occupation for the Construction of Ertanggou Reservoir in Shanshan County (2009 No. 89)

Annex 11. Letter of Explanation on the Covering Impact of Ertanggou Reservoir Construction on Underground Resources (2009 No. 120)

Annex 12. Forum of Resettler Representatives

Time: On the afternoon of the 6 <sup>th</sup> Nov 2008			
Site: Planned area for Ertanggou Reservoir construction			
Participants:			
Name	Sex	Occupation	Peoples

Yiming/Kadier	m	Herdsmen	Uyгур
Simayi/Maitiniyazi	m	Herdsmen	Uyгур
Abudula	m	Herdsmen	Uyгур
Rengbi/Aibibula	m	Herdsmen	Uyгур
Mutalipu/Maihemuti	m	Herdsmen	Uyгур
Aimaiti	m	Herdsmen	Uyгур
Rexiti/Simayi	m	Herdsmen	Uyгур

Abstract of Forum Talks:

All the people to resettle have learnt that the construction of Ertanggou Reservoir is to begin soon and the construction will involve them in land requisition, house demolition and resettlement. They are willing to take the interests of the whole into account and follow the arrangement of land requisition and structure demolition. They believe that after the completion of the project construction the pressure of irrigation water supply downstream will be alleviated in favor of the local economic development.

Concerning the perspective for future development, around 90% of the people are willing to move to the new resettlement area. They hope that (i) they can obtain reasonable compensation on the basis of the legal regulations relevant and (ii) there should be as few inter-links as possible – preferably the compensation fund can be released to the owner themselves, since they are worried that the compensation would be intercepted.

The current places where the future resettlers live are not access to electricity and the transportation conditions are very poor. Therefore, they suggest that the new resettlement area will be access to electricity and convenient transportation.

Since the current place where the future resettlers live is within the zone to construct Ertanggou Reservoir, it is pretty convenient to have water. The resettlers suggest to exempt them from water tariff.

Annex 13 Name List of the Working Staff Surveying Index in Terms of Material Products in the Inundation-Impacted Area of Ertanggou Reservoir (2008 No. 74)

Name	Institution	Position
Cao Peiwu	Turpan Prefecture Bureau of Water Resources	Director
Barui	Turpan City Bureau of Civil Affairs	Director
Zhu Jinggang	Shanshan County Bureau of Water Resources (SCBWR)	Director
Wupuer	Ertanggou Catchments Station under SCBWR	Director
Jiapaer	Ertanggou Catchments Station under SCBWR	Deputy Director
Li Ping	Shengjin Township Government of Turpan City	Party Secretary
Aibudula	Shengjin Township Government of Turpan City	Chairmen
Ayixiamu	Turpan City Bureau of Civil Affairs	Section Chief
Abulaiti	Shengjin Township Government of Turpan City	Party Secretary Deputy
Akebaer	Shengjin Township Government of Turpan City	Technician
Alimu	Shengjin Township Government of Turpan City	Technician
Aihemaiti	Shengjin Township Government of Turpan City	Technician



Annex 14 Socio-economic Situation in Turpan Prefecture by the End of 2007

No.	Items	Units	Quantity			
			Turpan Prefecture	Turpan City	Shanshan County	Tuokexun County
1	Population	10 <sup>4</sup> persons	60.061	26.9152	21.8164	11.3294
1.1	Agricultural Population	10 <sup>4</sup> persons	43.2051	18.3768	16.498	8.3303
1.2	Non-agricultural Population	10 <sup>4</sup> persons	16.8559	8.5384	5.3184	2.9991
2	Population Density	Person /km <sup>2</sup>	8.8896	19.8066	5.6989	7.2199
3	Land Area	km <sup>2</sup>	67563	13589	38282	15692
3.1	Area of Cultivated Land	10 <sup>3</sup> ha	34.8	11.69	10.08	13.03
3.1.1	Per capita Cultivated Land Occupation	mu/person	0.8691	0.6515	0.6931	1.7252
3.2	Grassland Area	10 <sup>4</sup> mu	1152			
4	Amount of Livestock on hand at the end of the year	10 <sup>4</sup> heads	121.07	39.03	39.03	43.01
5	Total Industrial and Agricultural Production Value	10 <sup>4</sup> yuan	2056228.25	371111.86	1474546.85	210569.54
5.1	Agricultural Production Value	10 <sup>4</sup> yuan	267171.25	108651.86	98124.85	60394.54
5.1.1	Animal Husbandry Production Value	10 <sup>4</sup> yuan	52359.23	18289.58	17866.60	16203.05
5.1.2	Per capita Agricultural Production Value	yuan/person	4448.3	4036.8	4497.8	5330.8
5.2	Industrial Production Value	10 <sup>4</sup> yuan	1789057	262460	1376422	150175
5.2.1	Per capita Industrial Production Value	yuan/person	29787.3329	9751.3673	63091.1608	13255.3357
5.3	Agricultural Production Value/Total Industrial and Agricultural Production Value	%	12.99	29.28	6.65	28.68
5.4	Industrial Production Value/Total Industrial and Agricultural Production Value	%	87.01	70.72	93.35	71.32
6	GDP	10 <sup>4</sup> yuan	1720268	355586	1196928	161288
6.1	Ratio of First Sector	%	9.57	20.60	4.85	21.72
6.2	Ratio of Second Sector	%	68.25	24.94	83.85	44.36
6.3	Ratio of Third Sector	%	22.18	54.46	11.29	33.92
6.4	Per capita GDP	yuan/person	28907	13505	55285	14349
7	Total Production of Crops	t	475802	215947	150684	109171
7.1	Per capita occupation of crop production	kg/person	792.1979	802.3236	690.6914	963.6080
8	Per capita net income of farmers and herdspeople	yuan	4483	4633	4632	3917
9	Total Employment	10 <sup>4</sup> persons	32.5329	12.2429	14.6858	5.6042



9.1	Rural Laborers	10 <sup>4</sup> persons	23.71	9.97	9.10	4.64
10	Enrollment Ratio of Kids of Primary School Age	%	98.75	98.75	92.8	99.36
11	Ratio of Teachers to Students of Primary Schools	%	9.54	8.29	8.63	14.68
12	No. of People Responsible by Each Medical Care Staff Member on average	person	231.11	211.42	254.13	242.25

### Annex 15 Forum of Women Representatives

Time □ Evening of September 25, 2008  
 Location □ Dam Site of Ertanggou Reservoir  
 Participants □

Names	Nationality	Occupation	Type of Resident Registered
Nurehan	Uygur	Grazier	Animal Husbandry
Maremuguli	Uygur	Grazier	Animal Husbandry
Rebiyahan	Uygur	Grazier	Animal Husbandry
Patanmuhan	Uygur	Grazier	Animal Husbandry

Record of Topics Discussed □

**Status of Women in House and Society:** In the local area women are basically playing role of making decisions for the family, but big decisions in the family are normally made by the couple based on discussions. For instance, if a spouse needs money to help his/her relative(s), the couple would discuss before giving the money. Most of the family heads are male, and the male heads of the families are normally representing the families in social occasions. But women are not excluded from discussion and consultation. Though it's common to see quarrels between the spouses if any conflict arises between them, women are not discriminated, instead, they basically enjoy equal rights with men.

**Economic and Social Activities of the Women:**

Women in the local area work in the field together with men, they also take additional responsibilities such as housework, and participate in family planning training and medical care and sanitation education courses.

**Needs of Women of Medical Care and Resettlement:**

At present, there is no clinic in the resettlement area people will move into, thus medical care service to the women can not be guaranteed. Thus, the hope is to be located closer to the hospital and schools and that medical care conditions can be improved after the resettlement, along with improvement of other basic infrastructures.

## **16.2 Sketch Maps**

- 1  Inundation Map of Ertanggou Reservoir
- 2  Map of Production Plan for the Resettlement Area
- 3  Map of Living Plan for the Resettlement Area

