

RESETTLEMENT PLAN

LIAONING ENVIRONMENTAL IMPROVEMENT PROJECT

IN THE

PEOPLE'S REPUBLIC OF CHINA

**PROJECT MANAGEMENT OFFICE OF LIAONING ENVIRONMENT
IMPROVEMENT AND FUXIN CBM/CMM DEVELOPMENT
AND UTILIZATION COMPANY**

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ABBREVIATIONS AND ACRONYMS

ADB	Asian Development Bank
APs	Affected Persons
AAOV	Average Annual Output Value (over the last three years' harvest)
CBM	Coalbed Methane
CMM	Coal Mine Methane
CO ₂	Carbon Dioxide
DMS	Detailed Measurement Survey
FCCDUC	Fuxin CBM/CMM Development and Utilization Co.
GHGs	Greenhouse Gas
GoC	Government of China
HH	Household
LA	Land Acquisition
LPG	Liquid Petroleum Gas
PPTA	Project Preparatory Technical Assistance
PRC	People's Republic of China
RP	Resettlement Plan
RRP	Report and Recommendation to the President
TGs	Township Governments
TVEs	Township and Village Enterprises
VCs	Village Committees

UNITS

<i>mu</i>	area; 15 <i>mu</i> = 1 ha
ha	area; 1 ha = 15 <i>mu</i>

LIAONING ENVIRONMENTAL IMPROVEMENT PROJECT RESETTLEMENT PLAN

1. INTRODUCTION

1.1 Objective and Scope of the Project

The objective of this ADB-financed Liaoning Environmental Improvement Project is to improve the environment in the heavily industrialized, northeastern province of Liaoning. The Project mainly consists of four (4) components: (a) establishment of commercially viable coalbed methane (CBM) and coalmine methane (CMM) production and utilization demonstration projects in Fuxin coal mining areas; (b) improvement of urban gas pipeline network in two (2) cities in Liaoning Province¹; (c) improvement of urban central heating system in four (4) cities in Liaoning province², and (d) gas/urban heating sector reforms and corporate governance improvement. The construction of the Project can be divided into 3 broad categories: CBM/CMM Development, Gas Distribution and City Central Heating. The Project is divided into seven (7) sub-projects, involving seven (7) different Project Implementation Agencies (IAs) in six (6) cities. A summary of the seven (7) sub-projects (see **Table 1-1**) and the detailed description of the Project is described below. **Figure 1-1** provides a map of Liaoning Province and the six (6) Project cities.

Table 1-1 Summary Information about the Project

#	Category	Sub-Project Name	Project IA	Location
1	CBM/CMM Development	Fuxin CBM/CMM Development	Fuxin CBM/CMM Development and Utilization Co.	Fuxin
2	Gas Distribution	Fushun CBM Gas Distribution Improvement	Fushun City Gas Co.	Fushun
3		Benxi Gas Distribution Improvement	Benxi City Gas Co.	Benxi
4	City Central Heating Supply	Benxi Central Heating Supply	Benxi General Heating Company	Benxi
5		Anshan Heating Supply	Anshan City Heating Co.	Anshan
6		Liaoyang Central Heating Supply	Liaoyang Heating Supply Co.	Liaoyang
7		Yingkou Central Heating Supply	Yingkou Heating Supply Co.	Yingkou

¹ The two (2) cities include Fushun and Benxi. They were selected by Government of Liaoning Province (GLP) based on the needs of these cities to improve their gas distributions.

² The four (4) cities include Benxi, Anshan, Liaoyang, and Yingkou. They were selected by GLP based on the needs of these cities to improve their central heating system.



Figure 1-1 Map of Liaoning Province

1.2 Descriptions of the Project

1.2.1 CBM/CMM Development Component

Fuxin CBM/CMM Development Project

The Project owner is Fuxin CBM/CMM Development and Utilization Co. (FCCDUC). The Project is located in the Fuxin coal mining area, in the west of Liaoning Province. Fuxin mining area has rich CBM resources, the total resources are estimated at 13.2 billion m³; and the gas content is averaged at 12 m³/t. The Project will recover CBM by underground gas drainage systems and vertical standard wells. Methane production will reach 68.34 million m³, of which 33.32 million m³ by underground drainage systems and 35.02 million m³ by vertical wells. Eighteen (18) vertical wells will be drained in 3 coal mines. The CBM recovered will be supplied via pipeline to the existing gas regulation plant from where the gas is distributed to residential and industrial users in Fuxin city by Fuxin Gas Company.

The Project consists of: a) installation of 18 vertical wells; b) installation of one 50,000 m³ above ground gas tank; c) construction of three mine gas extraction stations. This component will increase residential and industrial use of CBM, reducing LPG, heavy oil and consumption.

The total investment of the Project is estimated to be US\$26.672 million with an expected construction duration of 21 months.

1.2.2. Gas Distribution Component

1) Fushun Gas Distribution Improvement Project

The Fushun Gas Distribution Improvement Project will be implemented by the Fushun Gas Company. Currently, Fushun Gas Co. has a total gas storage capacity of 158,000 m³, and 426.5 km of gas pipelines, supplying methane to 160,000 households. Most of the current gas pipelines are old with 2/3 being made of cast pipes. Due to subsidence caused by mining, some cast pipe joints have been broken, causing serious leakages. The medium-pressure pipelines are not separated from the low-pressure pipelines. Due to repeated problems with the ageing pipelines, it is necessary to replace and improve the gas pipeline system.

The Project includes two components: a) replacement of 24 km ageing gas pipes, and b) improvement of 45 pressure regulation stations to reduce excessive pipeline gas losses and accidents. The total investment is US\$2.422 million with an expected construction duration of 30 months.

2) Benxi Gas Distribution Improvement

The Project will be implemented by Benxi Gas Company, which was established in 1974

as a State-Owned Enterprise (SOE), with total assets of RMB 140 million. So far, the company has developed a complete gas supply system in Benxi city with 140,000 residential users. However, the pipelines are ageing, as most of them were installed before 1985.

In order to improve the gas supply system, about 40 km of ageing gas pipeline needs to be replaced and 3 km of new pipeline needs to be installed to cut down pipeline losses and accidents. The Project will not only eliminate the hidden risk of the gas supply system, but also expand the gas supply to new household users to reduce domestic coal consumption and improve air quality.

The total investment for this project is US\$5.35 million. The duration of construction will be 26 months.

1.2.3. City Central Heating Supply Component

1) Benxi Central Heating Supply Project

The Project implementation agency is Benxi General Heating Company. The Project aims at improving the local air quality by replacing small boilers with central heating supply. The Project will construct: a) 2 x 209 GJ/hour circulating fluidized bed (CFB) hot water boilers; b) support facilities (water, power and coal supply systems); c) 7 km of heat supply pipeline; and d) 18 heat exchange stations. The Project will replace 18 existing small, inefficient and polluting boilers, and will supply central heating to 2.20 million m².

The total investment for the Project is US\$ 36.075 million. The construction duration of the Project is 16 months.

2) Anshan Central Heating Supply Project

The IA is the Anshan General Heating Company. The Project consists of the following three components: a) reuse of the heat (currently wasted) from the Anshan Steel No.1 blast furnace; b) reuse of the heat (currently wasted) from the Anshan Steel No.2 thermal power station; and c) installation of household heat supply control system; and d) closure of a substantial number of small pollution heat boilers. The Project aims to use the heat produced by the steel factory and the power station (currently wasted) for domestic and industrial heat supply. The Project will provide an additional heat source to supply 2.20 million m² of building area.

The expected construction duration for the first two components is one year, while the third component completion is expected to take up to 5 years. Construction is scheduled to begin in November 2004. The total investment of the Project is about US\$14.47 million.

3) Liaoyang Central Heating Supply Project

The Project IA is the Liaoyang Real Estate Heating Company. The Project objective is to supply heat to domestic and industrial users and consequently improve the local air quality by replacing numerous existing small boilers, which are currently causing significant air pollution. The heating supply area of the Project will cover 7.82 million m². The Project consists of: a) construct 10 (10 x 208 GJ/hour) hot water boilers and support facilities; b) construct 6.8 km of heat distribution network and 112 heat exchange stations in Liaoyang; and (c) close 174 existing small inefficient and polluting boilers in urban areas, which are currently supplying heat to 5.82 million m². The two new boiler houses will be Beicaoku boiler house (4 x 59 MW), and Doushuangshu boiler house (6 x 58 MW).

The construction of the Project will take three 38 months. The total investment for the Project is estimated at US\$38.887 million.

4) Yingkou Central Heating Supply Project

The Project is located in Yingkou city, south of Liaoning Province. The Project IA is the Yingkou Heating Company. The Project consists of: a) construction one (2 x 12 MW) combined heat and power (CHP) generation plant including three (3 x 75 t/h) steam boilers and support facilities; b) construct three (3 x 104 GL/hour) hot water boilers; c) construct 40 km of heat supply and distribution network and 12 heat exchange stations in Yingkou; and d) close 175 existing small, inefficient and polluting boilers. The Project will supply heat to 2.10 million m² of residential area.

The duration of construction will be three 38 months. The total project investment is US\$ 10.799 million.

1.3 Total Project Investment

The total cost of the Project, including physical, price contingencies, and interest and other charges during construction, is estimated at US\$158 million equivalent. Of the total amount, the foreign exchange costs of US\$73 million, or about 46.2% will come from ADB's ordinary resources and about US\$85 million equivalent will be financed with equity from the respective project implementation agencies (PIAs) and with loans from domestic banks. A breakdown of the base cost estimates is included in **Table 1-2**.

Table 1-2 Project Cost Estimates (US\$ million)

Item	Foreign Exchange	Local Cost ¹	Total Cost
I. Base Cost			
1. CBM/CMM Development	15.778	10.894	26.672
(i) Fuxin CBM/CMM Development	15.778	10.894	26.672
2. Gas Distribution Component	4.447	3.325	7.773
(i) Fushun Gas Distribution Improvement	1.697	0.726	2.422
(ii) Benxi Gas Distribution Improvement	2.750	2.600	5.350
3. City Central Heating Component	41.612	58.619	100.231
(i) Anshan City Heating Supply	9.431	5.039	14.470
(ii) Benxi City Central Heating Supply	14.021	22.054	36.075
(iii) Liaoyang City Central Heating Supply	12.711	26.177	38.887
(iv) Yingkou City Central Heating Supply	5.449	5.349	10.799
4. Institutional Strengthening	0.600		0.600
Subtotal (A)	62.437	72.838	135.275
II. Contingencies			
Physical	3.803	4.834	8.637
Price	2.135	4.064	6.199
Subtotal (B)	5.938	8.898	14.836
III. Financial Charges during Development	4.625	3.263	7.888
Total	73.000	85.000	158.000

¹ Based on an exchange rate of \$1 = CNY8.27.

² Numbers may not add up due to rounding off.

2. IMPACTS OF LAND ACQUISITION AND RESETTLEMENT

2.1 Fuxin CBM/CMM Development Project

The construction of the Fuxin CBM/CMM Development Project will affect 3 households or 12 persons by permanent land acquisition. A total of 10.4 mu (0.69 ha) of dryland will be acquired permanently in Xiwa Village of Hanjiadian Township, Xihe District, of which 2 mu will be acquired from farmers, and 4.4 mu will be the industrial land owned by the Fuxin CBM/CMM Development and Utilization Company since the establishment of the company and 4 mu owned by the village collective. The land acquired from farmers represents less than 15 percent of their dryland as the average loss per household. Some wells may be located on wasteland where possible. In addition, about 46 households (130 persons) will be affected temporarily by the construction of gas pipelines³; it is estimated that 111.47 mu (7.43 ha) of dryland will be affected for 3 months while the pipelines are laid.

The budget for the LAR is estimated at RMB 1.45 million, out of the estimated total Project investment of RMB 262 million. The construction is expected to last nineteen (19) months from January 2005 to July 2006.

In line with the ADB's Involuntary Resettlement Policy and the relevant laws, regulations

³ In total, 22 km of transmission line will be buried within the road ROW.

and guidelines of the Government of China (GoC), a short resettlement plan (RP) was prepared by the Fuxin CBM/CMM Development and Utilization Co. with assistance from the ADB PPTA Resettlement Specialist. The details of the RP report are provided in **Appendix A**.

2.2 Fushun Gas Transmission and Distribution Improvement Project

The construction of the Project will occupy 32,250 m² of urban road temporarily, as well as 560 m² of lawn and bushes within the right of way of urban roads owned by the city. No individual will be affected. Provided in **Table 2-1** are the details of the impacts of the temporary land occupation.

Table 2-1 Impact of Temporary Land Occupation

Affected Items	Name of Street				Unit	Total
Road for Pedestrian	Yingkou Lu	Benxi Lu	Xishi Lu	Xinhua Jie	m ²	27,750
Road for Vehicle	Yongji Lu	Guide Jie	Dongfuping Lu	Yongning Jie	m ²	4,500
Lawns (by Compression-Adjusting Station)	Dongyi Lu	Yongan Tai			m ²	450
Bushes (by Compression-Adjusting Station)	Dongyi Lu	Yongan Tai			No.	90

The urban road that will be temporarily occupied is state-owned land. The cost of urban road compensation (RMB 6,047,000) will be included in the overall project budget and will be paid to the municipal civil engineering department. The loss of lawns and bushes will be paid to the municipal landscaping department. The recipient department of the compensation will be responsible to restore the affected items to its original conditions. No loss of permanent land and resettlement will be involved. The construction will adopt the one-side earth excavation and partial-pipe-jacking, no impacts on people are expected.

2.3 Benxi Gas Pipeline Improvement Project

The construction of the gas pipeline will occupy 1,091 mu of urban road temporarily in the three districts of Benxi city. **Table 2-2** provides the impact information. The diameter of the pipeline ranges from 200 mm to 300 mm. The pipeline will be 1.5 m at width and 1.5 to 2 m at depth. The construction of each section of pipeline will only take one night to one week to complete. The impact is very minor. The Benxi Gas Company will restore the road to its original conditions once the construction is completed. No other properties will be affected. No resettlement will be involved. However, a permit must be obtained from Benxi Municipal Construction Commission and compensation for disturbance/easement will be paid to the municipal civil engineering department in the amount of RMB 8.4 million.

Table 2-2 Impact of Temporary Land Occupation

District	Temporary Land Occupation (mu)
Pingshan	654.6
Mingshan	327.3
Xihu	109.1
Total	1,091.0

2.4 Benxi Central Heating Supply Project

The Project will occupy a land area of 45,000 m² for the construction of new central heating supply Plant. The land has already been acquired several years ago by the Benxi General Heating Company. The 18 heat exchange stations will be built at the same location to replace the existing 18 small boilers. No land acquisition and resettlement will be involved. In addition, 50 mu of land will be temporarily acquired, of which 10 mu wasteland will be used for the construction material storage; and 40 mu of urban land will be used for pipeline construction (26.67 mu in Mingshan district and 13.33 mu in Pingshan district). Included in **Table 2-3** are the expected land impacts. The cost for road recovery will be RMB 6 million, which is included in the engineering cost and will be paid to the municipal civil engineering department. The 20 newly built heat exchange stations will use the existing plant of boilers. No other properties will be affected and no resettlement will be involved in the Project.

Table 2-3 Impact of Temporary Land Occupation

Project Component	Location	Temporary Land Occupation (mu)		
		Urban Road	Waste land	Total
Central Heating Supply Plant	Meitie Street of Xihu District		10	10
Pipeline	Mingshan District	26.67		26.67
	Pingshan District	13.33		13.33
Total		50	10	60

2.5 Anshan Heating Supply Project

The Project will only require the installation of the household heat supply control system on the existing facilities. As such, no land acquisition and resettlement will be involved.

2.6 Liaoyang Central Heating Supply Project

The Project will occupy 13,500 m² of industrial land for the Beicaoku Heating Supply Center (5,000 m²) and Doushuangshu Heating Supply Center (8,500 m²), which was purchased by the Liaoyang Commerce Bureau in 2002 by the Liaoyang Real Estate Heating Co. in 2002. The compensation payment totaled CNY10 million (about CNY7.5 million per ha). The construction of 6.8 km of heat distribution network will cause minor disturbance along urban roads. Compensation will be paid to the municipal civil

engineering department. The construction of 112 heat exchange stations will use the industrial land of demolished boilers. Therefore, no land acquisition and resettlement will be involved.

2.7 Yingkou Central Heating Supply Project

The construction of the boilers and heat exchange stations will require the occupation of 163.1 mu of industrial land permanently within the thermal power plant. As the land has been owned by the Yingkou Heating Company since 1992, no permanent land acquisition and resettlement will be involved. However, the Project will temporarily occupy an area of 9,360 m² urban road as a result of the pipeline construction. The pipeline will be buried within the road right of way (ROW). The cost of compensation for disturbance/easement is RMB 8.6 million⁴, which will be paid to the municipal civil engineering department.

In summary, the overall Liaoning Environmental Improvement Project will involve no land acquisition and resettlement, except the Fuxin CBM/CMM Development Project. The resettlement impacts of all Project components and budget are presented in **Table 2-4 and Table 2-5**. The master schedule and impacts occurred for each Project component is provided in **Figure 2-1**.

Table 2-4 Potential Resettlement Impacts of the Project

Components	Subprojects	Activities with Potential Resettlement Impacts
CBM Extraction	Fuxin Coal Mine	<ul style="list-style-type: none"> - 18 extraction wells require minor land acquisition (300 m² each) - 3 gathering stations require minor land acquisition (extra 100 m² for each) - gathering lines require temporary farmland disturbance for one month duration - 50 km of newly constructed main pipeline between Qinghem and Fuxin requires some temporary land disturbance alongside the main road—compensation to be paid to the civil engineering department
Gas Distribution	Fushun City	- replacement of 24 km of pipes will cause minor temporary road disruption of pedestrian road and lawn; compensation for pedestrian road restoration to be paid to the municipal civil engineering department, and compensation for lawn restoration to be paid to municipal landscaping administration department
	Benxi City	- replacement of 40 km of old pipes and construction of 3 km of new pipes will cause some temporary disturbance along urban roads—compensation to be paid to the civil engineering department
Central Heating	Benxi City	- construction of 7 km pipeline will cause some temporary disturbance along urban roads—compensation to be paid to the civil engineering department
	Anshan City	- rehabilitation of existing facilities requires no land acquisition or disturbance. No compensation will be required
	Liaoyang City	- construction of 6.8 km of heat distribution network and 112 heat exchange stations will cause minor disturbance along urban roads—compensation to be paid to the municipal civil engineering department
	Yingkou City	- construction of 12 heat exchange stations and 40 km of heat supply pipelines will cause minor disturbance along urban roads—compensation to be paid to the municipal civil engineering department

⁴ The cost of compensation for disturbance/easement includes the earlier payment for industrial land.

Table 2-5 Summary of Land Acquisition Impacts of All Project Components

Project Components		Permanent Land Acquisition (ha)	Temporary Land Occupation (ha)				APs	Total Budget (CNY 1,000)
			Dryland	Urban Road	Land Owned by PIAs	Total		
Fuxin Development	CBM/CMM	0.4	7.4	—	3.3	10.7	142	1,451
Fushun Distribution	Gas	—	—	3.3	—	3.3	0	6,047
Improvement ¹								
Benxi Gas Distribution		—	—	72.7	—	72.7	0	8,400
Improvement								
Benxi Central Heating Supply		—	—	4.0 ²	4.5	8.5	0	6,000
Anshan Heating Supply		—	—	—	—	—	0	0
Liaoyang Heating Supply	Central	—	—	4.0	1.3 ³	5.3	0	6,000
Yingkou Heating Supply	Central	—	—	14.0	10.9 ⁴	24.9	0	8,600
Total		0.4	7.4	98.0	20.0	125.4	142	36,498

Notes: AP = affected persons

¹ The compensation for pedestrian road recovery will be CNY4.44 million, asphalt road will be CNY1.553 million, which will be paid to the Municipal Civil Engineering Department, and the compensation for lawn recovery will be CNY36,000 and bushes will be CNY19,900, which will be paid to Municipal Landscaping Administration Department.

2. It includes 10 mu of wasteland.

³ The land was purchased from Liaoyang Commerce Bureau by the Liaoyang Real Estate Heating Co. in 2002. The compensation payment totaled CNY10 million (about CNY7.5 million per ha).

⁴ The 10.9 ha of industrial land for the construction of thermal power plant has been owned by the Yingkou Heating Company since 1992, therefore no land acquisition and compensation are involved.

Figure 2-1 Master Schedule and Impacts to Incur

[illegible]

Resettlement Plan for Fuxin CBM/CMM Development Project

A1. INTRODUCTION

A1.1 Project Description

The Fuxin CBM/CMM Development Project is one of the seven (7) Projects of the ADB financed Liaoning Environmental Project. The objective of the Project is to improve the environment in the heavily industrialized, northeastern province of Liaoning. The Project owner is the Fuxin CBM/CMM Development and Utilization Co. (FCCDUC). The Project is located in the Fuxin coal mining area, in the west of Liaoning Province. **Figure A1** provides the layout of the Fuxin CBM/CMM Development Project. Fuxin mining area has rich CBM resources, the total resources are estimated at 13.2 billion m³; and the gas content is averaged at 12 m³/t. The Fuxin coal mine has a 50-year mining history, and is one of the major coal mines in the People's Republic of China (PRC). At present, Fuxin coal field has ten (10) mines with capacity of 10 million tons per year. Five of the 10 mines are rich-gas mines, which are Haizhou Mine, Wulong Mine, Wuying Mine, Aiyou Mine, and Qinghe Mine.

The Project will recover CBM/CMM by underground gas drainage systems and vertical standard wells. Methane production will reach 61.9 million m³, of which 42.5 million m³ by underground drainage systems and 19.2 million m³ by vertical wells. Eighteen (18) vertical wells will be drilled in three (3) coal mines. The CBM recovered will be collected at 3 extraction station(s), sent to the storage and mixing facility in Liujiaqu, and then transmitted to the gas regulation/mixing plant in Fuxin City via the existing pipeline. From this plant, the gas is sold to the Fuxin Gas Company for distribution to residential and industrial users in Fuxin city.

The Project consists of: a) installation of 18 vertical wells; b) installation of one 50,000 m³ above ground gas tank (check this); c) construction of three (3) mine gas extraction stations; and d) installation of 3 units for CBM fired power generation plants, with a total capacity of 30 MW. In addition to providing fuel for the new power plant, this component will increase residential and industrial use of CBM, reducing LPG, heavy oil and consumption.

A1.2 Socio-Economic Benefits of the Project

It is expected that the Project will bring about substantial socioeconomic benefits to the local populations residing in the Project beneficiary areas at large, particularly the poor and women. These benefits: i) 2,700 person-years of employment opportunity generation during the Project construction and 320 full time employment opportunity

generation during the Project operation; ii) RMB 94.3 million value-added benefits through procurement of local materials; iii) stimulation of regional economic development; iv) increase of tax revenue to local governments for poverty reduction at about RMB 313,000 per year; and v) reduction of greenhouse gas (GHG) emissions, improvement of environment and health; and vi) improvement of mine workers' safety.

In particular, the extraction will replace partial coal gas produced by local coal gasification plants and hence will avoid air pollution caused by coal gasification. The Project is also likely to improve the financial status of Fuxin city as the coal gasification plant has been losing money for several years due to its high operation costs.

A1.3 Land Acquisition Impacts

The construction of the Fuxin CBM/CMM Development Project will affect about 3 households or 12 persons by permanent land acquisition. A total of 10.4 mu (0.69 ha) of dryland will be acquired permanently in the Xiwa village, Hanjiadian township, Xihe district, of which 2 mu will be acquired from farmers, and 4.4 mu land will be the industrial land owned by the Fuxin CBM/CMM Development and Utilization Company since the establishment of the company and 4 mu owned by the village collective. The land acquired from farmers represents less than 15 percent of their dryland as the average loss per household. In addition, about 46 households or 130 persons will be affected temporarily by the construction of gas collector pipes and 111.47 mu (7.43 ha) of dryland will be affected for 3 months while the pipelines are laid. As most of the distribution/transmission pipelines will be buried within the road right of way (ROW), the number of affected households or population by temporary land occupation is relatively small.

The budget for the LAR is estimated at RMB 1.45 million, out of the estimated total Project investment of RMB 262 million. The expected construction duration is nineteen (19) months from January 2005 to July 2006.

A1.4 Preparation of RP

The resettlement plan has been developed in line with the ADB's Involuntary Resettlement Policy and the relevant laws, regulations and guidelines issued by the Government of China (GoC). The RP is based on a series of information sources, including:

- (i) relevant project reports: particularly the Project Pre-Feasibility Study Report;
- (ii) field visits to the proposed project sites;
- (iii) measurement survey in October, 2003;
- (iv) socio-economic survey of 20 households in October, 2003;
- (v) discussions with the related officials of the Fuxin Land and Resources Bureau;
- (vi) consultations with various local governments, village leaders and APs.

The RP is prepared by the FCCDUC with the assistance of the ADB PPTA Resettlement Specialist.

A2. SOCIO-ECONOMIC PROFILE OF AFFECTED AREA AND PERSONS

A2.1. Socio-Economic Profile of Affected Area

Nicknamed “the city of electricity”, Fuxin is an important base for energy and industrial centre with traditional heavy industry, but light industry and electronics have also become pillars of the economy for the municipality. There are 593,000 households or 1.92 million people, including 1.47 million in the urban area and 455,000 people in rural area. Of the total population, the number of males was 971,000 persons and females 954,000 persons. In total, there are 67 townships and 837 villages under the jurisdiction of the city.

Fuxin is abundant in mineral resources, especially natural gas and petroleum. There are over 20 kinds of non-metallic minerals, such as silica sand, marble, lime, turquoise, and over 10 kinds of metallic minerals, such as iron, molybdenum, aluminum, zinc, copper, tungsten, lithium. Fuxin is a developing and emerging city with rapid development not only in terms of the machinery, chemical, building sectors but also the food, textile, industry, medicines, electronics sectors. The GDP for Fuxin was RMB 7.03 billion in 2001. Of this, the primary industrial sector contributed RMB 1.02 billion, the secondary industry RMB 2.74 billion, and the tertiary industry RMB 3.27 billion. In total, the fiscal revenue in 2001 was RMB 453.92 million, while the fiscal expenditure was RMB 1,827 million.

In 2001, there were about 200 enterprises in the city. The industrial development experienced rapid expansion, with the total value of gross industrial products amounting to RMB 5.42 billion. The value-added industrial production reached RMB 2.14 billion. The sales income of products was RMB 3.94 billion.

The farmland area was 375,500 ha in 2001, of which 7,300 ha was paddy land and 368,200 ha dryland. The grain production in Fuxin reached 725,000 tons. The total value of gross domestic products for the agriculture, forestry, animal husbandry and fishery as a whole amounted to RMB 2.21 billion, of which agriculture contributed RMB 102.34 million.

Fuxin is a poor and isolated area in Liaoning province. The quality of farmland is poor and lacks water but the rural people have traditionally relied on employment in coal mines for the majority of their incomes. Recently, with the closure of some mines, poverty has increased. The average net income per capita for the rural farmers in 2001 was at RMB 1,123, which was much lower than that of the province at RMB 2,558. The average expenditure per capita for the rural farmers in that year was at RMB 1,633, which was closer than that of the province at RMB 1,786. Of the total expenditure in Fuxin, food

accounts for 49.23%, clothing 5.77%, housing 16.5%, medical cost 6.03%, education 9.44%, and transportation and communication 7.12%.

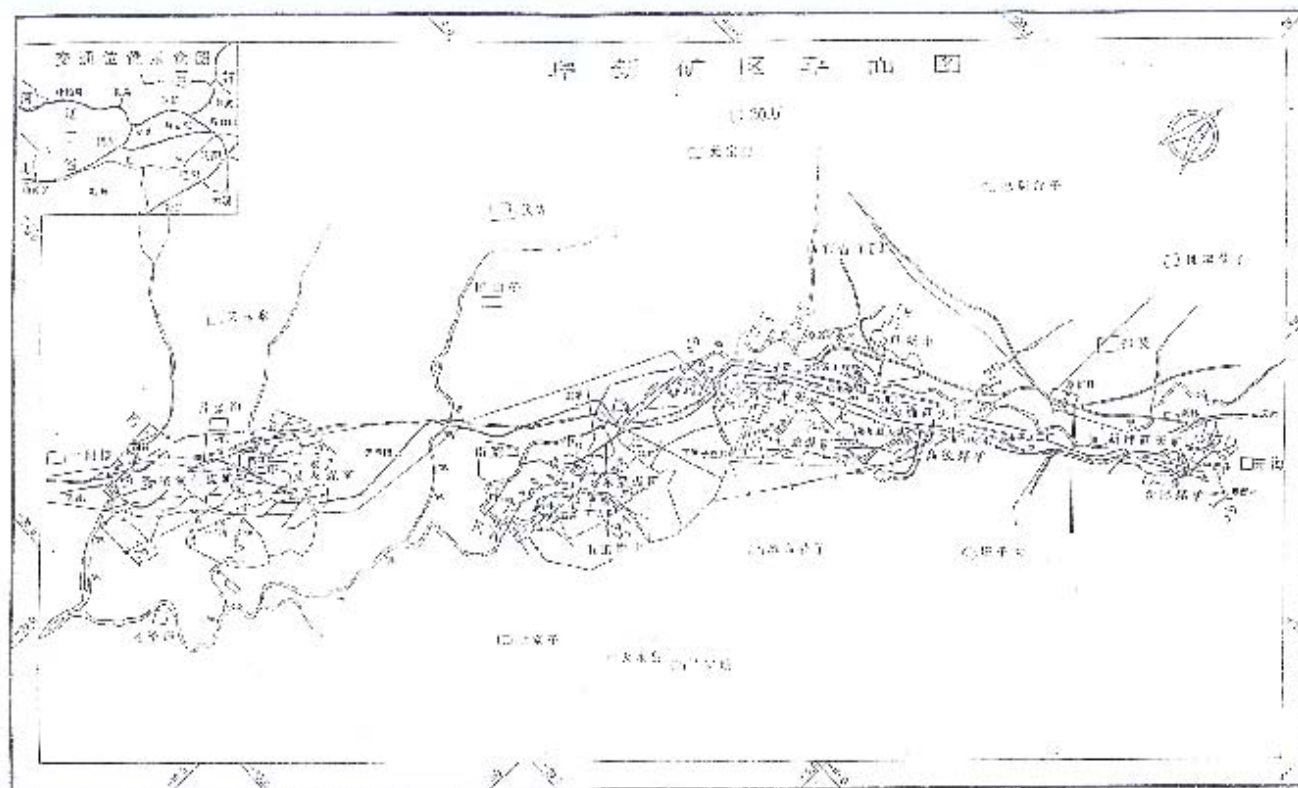


Figure A1 Layout of Fuxin CBM/CMM Development Project

A2.2. Socio-Economic Profile of Affected Persons

In order to gain a better understanding of the general socioeconomic profile of the APs and evaluate the impacts on the affected people by the Project, Fuxin CBM/CMM Development and Utilization Co. conducted a socioeconomic survey on October 20, 2003, 20 affected households were surveyed from Xiwa village, which is affected by the Project.

A2.2.1 Demographical Characters of the Affected People

Of the total surveyed population, 39 persons were male and 21 persons female. The average age is 45 years, with the youngest being 12 years old, and the oldest being 66 years old; 46 persons (77%) are married, and 12 (20%) are unmarried, 2 persons (3%) are widow.

In terms of education (see **Table A2.1**), 16 person (27%) graduated from primary school, 23 persons (38%) from middle school, 15 persons (25%) from high school, 5 persons (8%) from college, and 1 person (2%) from university.

Table A2.1 Education Level of Surveyed Population

Education	No. of Surveyed Population	% of Surveyed Population
Primary School	16	27%
Middle School	23	38%
High School	15	25%
College	5	8%
University and Above	1	2%
TOTAL	60	100%

A2.2.2 Size of Family

Of the 20 surveyed households, the total population is 60 and the family size is 3 persons, with the smallest being one (1) and the largest five (5). Detail information is given in **Table A2.2**.

Table A2.2 Family Size

	Number of Persons	Frequency	Percent (%)
Family Size	2	4	20%
	3	11	55%
	4	3	15%
	5	2	10%
	Total	20	100%
Average	3		
Min	1		
Max	5		
Total	60		

A2.2.3 Length of Residence

From the survey, of the 20 sample households, 5 (25%) have resided in the present place of residence for generations, 5 (25%) have been living here for 30-50 years, 3 (15%) for 20-30 years, 2 (10%) for 10-20 years, 3 (15%) for 5-10 years, and 2 (10%) for less than 5 years (see **Table A2.3**). The survey shows that most residents have been living here for quite a long time.

Table A2.3 Length of Residence

Length of Residence	No. of Households	Percent of Households
Less than 5 years	2	10
5-10 years	3	15
10-20 years	2	10
20-30 years	3	15
30-50 years	5	25
Generations	5	25
Total	20	100

A2.2.4 Occupations and Family Income

Of the 60 respondents, 38 have the capability to work. The ratio of labour force is 1.58. All of the surveyed households are rural families. The average annual income of the families is RMB 6,000, with the highest income being RMB 12,000 and the lowest RMB 800. The average annual per capita income is RMB 1,600, with the highest being RMB 5,000 and the lowest income RMB 375.

A2.2.5 Ethnic Minorities and Most Vulnerable Groups

In this survey, the vulnerable groups are mainly the poor, elder, and minority group. Of the

20 surveyed households, four (4) households are Mongolian and one (1) *Hui* household. The survey result shows that one (1) household is elder family, with the annual income of RMB 800, mainly from agriculture. There are two (2) families whose per-capita net income is below the international poverty line of RMB 900 recommended by the Asian Development Bank.

A2.2.6 Preferred Options of Compensation

The surveyed households generally agreed with the compensation in accordance with the land acquisition and compensation policies of Fuxin City. The compensation rate of land would be 10 times of the AAOV of last 3 years, the relocation subsidy would be 10 times of the AAOV of last 3 years, and equivalent land could be re-adjusted to re-allocate to APs by the township government and village committee. For the temporary land occupation due to the pipeline construction (normally 3 months), the APs would be compensated 1 time of AAOV of last 3 years for land recovery, and the compensation would be in cash paid directly to APs. In addition, the loss of standing crops should be compensated for the output value of one (1) season, based on the most recent market price. For the loss of farmland, 71.7% of the surveyed population requested cash compensation, 20% land re-allocation, and 6.7% employment opportunity provisions to family members, and 1.6% do not know (see **Table A2.4**).

Table A2.4 Preferred Options of Compensation for Farmland

	Preferred Options	Frequency	Percent (%)
Compensations for Farmland Loss	In cash	25	71.4%
	Land re-allocation	5	14.2%
	Employment for family members	4	11.4%
	Do not know	1	3.0%
Total		60	100.0%

A2.2.7 Willingness for Training on New Technology

Of the total surveyed population, there are 39 persons or 64.7% who are willing to take the training on new technologies if there is other job opportunity available to them, 8.8% do not know, and 12.9% no answer. But if there were no good job opportunities, they would change their minds. The results are presented in **Table A2.5**.

Table A2.5 Willingness to New Technology Training

Willingness	No. of Surveyed Population	Percentage (%)
Willing	39	64.7%
Un-willing	8	13.6%
Do not know	5	8.8%
No answer	8	12.9%
Total	60	100.0%

A2.2.8 Knowledge about the Project

The surveyed population were asked about their knowledge of the Project. The results of the survey showed that 59 or 98.2% of the surveyed population had known the Project within half year, and 1.8% within half year and five (5) years. About 82.4% of them heard the Project from the Project investigators, 9.6% from meetings, 4% from neighbours and friends, and 3.3% from newspaper (see **Table A2.6**).

Table A2.6 Knowledge about the Project and Information Source

Length of Knowledge about the Project	Within 0.5 years	Within 0.5 - 5 years		
%	98.2%	1.8%		
Information Sources	Newspaper	Meeting	Neighbor/Friend	Project Investigator
%	3.3%	9.6%	4%	82.4%

A2.2.9 Views and Perceptions

With the consultation activities, 81.3% of the surveyed people agree with the Project. About 79.4% of the people trust that they could get fair compensation, 5.5% did not trust, and 15.1% were not sure; 65.8% believed that the relevant departments would help them, while 8.1% did not believe, and 36.1% did not know. When asked if their family could benefit from the Project, 52.2% believed so, 29.0% did not believe, and 18.8% were not sure. **Table A2.7** provides the summary of the survey results.

Table A2.7 Views and Perceptions of APs on the Project

Questions	Answers			
Do you think that your family could benefit from the Project?	Yes	No	Do not know	
	52.2%	29.0%	18.8%	
Do you think that you could be fairly compensated for your loss?	Yes	No	Do not know	
	79.4%	5.5%	15.1%	
Do you think that the relevant departments could help you?	Yes	No	Do not know	
	65.8%	8.1%	36.1%	
Do you agree with the Project?	Yes	No	Do not care	Do not know
	81.3%	0%	12.5%	6.3%

A3. OVERVIEW OF PROJECT IMPACTS

A3.1 Types of Losses

From the measurement survey conducted in October 2003, the following categories of losses have been identified: 1) permanent farmland loss (dryland); 2) temporary farmland (dryland) occupation; and 3) loss of standing crops.

A3.2 Impact Identification

A3.2.1 Baseline Information

The construction of the CBM surface extraction wells and extraction station(s) will necessitate permanent land acquisition and the pipeline will involve temporary land occupation. No demolition of houses, other structures or trees will occur.

At the time of preparing this resettlement plan (RP), the locations and areas of the CBM wells, gas extraction station(s) and pipelines have already been estimated. The exact location of wells and pipeline may subject to change based on the suggestions of technical specialists. Once the final design is complete, a Detailed Measurement Survey (DMS) will be carried out to update the impact information and revise the costing figures accordingly.

A3.2.2 Scope of Land Acquisition Impacts

1) Surface Wells and Extraction Pipelines and Station

As a result of the Project construction, one village will be affected by permanent land acquisition. The affected community is Xiwa village in Hanjiadian township of the Haizhou district, Fuxin city. The CBM Extraction component will affect about 3 rural households or 12 persons. In total, 10.4 mu (0.69 ha) of dryland will be acquired permanently, including 2 mu will be acquired from farmers, and 4.4 mu land will be the industrial land owned by the Fuxin CBM/CMM Development and Utilization Company since the establishment of the company and 4 mu owned by the village collective. The land acquired from farmers represents less than 15 percent of their dryland as the average loss per household. The gas pipeline will temporarily occupy 111.47 mu (7.43 ha) of farmers' dryland and 46 rural households (130 persons) will be affected. The three gas extraction stations will acquire 45 mu (3 ha) of industrial land in the mining site of the Fuxin CBM/CMM Development and Utilization Company.

2) Qinghemen Distribution /Transmission Pipelines

The construction of about 36 km of new gas transmission pipelines will temporarily occupy 81.01 mu (5.4 ha) of individual farmers' dryland and 43 rural households (120 persons) will be affected. In total 13 villages will be affected, namely villages of Qinghemen, Wujiayao, Lujiadian, Zhuangjiadian, Yimatu, Zhoujiajie, Dongliang, Tuhulu, Latatun, Shahai, Xindi, Xihuang, and Hanjiadian. As most of the distribution/transmission

pipelines will be buried within the road right of way (ROW), the number of affected households or population is relatively small.

3) Haizhou Distribution /Transmission Pipelines

The construction of 13.55 km of new gas transmission pipelines will temporarily occupy 30.47 mu (2.03 ha) of individual farmers' dryland and 3 rural households (10 persons) will be affected. In total 3 villages will be affected, namely villages of Wulongjie, Hanjiadian, and Minzhu. As most of the distribution/transmission pipelines will be buried within the road right of way (ROW), the number of affected households or population is relatively small.

4) Extraction (Regulation/Mixing/Storage) Stations

The three gas extraction stations will use 45 mu (3 ha) of industrial land in the mining site of the Fuxin CBM/CMM Development and Utilization Co. (the regulation/mixing stations are existing; no new ones are required). As the land is owned by the company since 1949, no land acquisition and compensation is required.

The summary impacts of the land acquisition of the Project are presented in **Table A3.1**. The impacts of permanent land acquisition and temporary land occupation are small. Therefore the impact will be limited.

Table A3.1 Permanent Land Acquisition by Fuxin CBM Development Project

Name of the Project Components		Affected Counties/ Districts	Affected Towns	Affected Villages/ Streets	Type of Land (mu)		Affected Households (no.)	Affected Population (no.)
					Permanent Acquisition (Dry Land)	Temporary Land Occupation		
Surface Drilling and Extraction Field		Haizhou	Hanjiadian	Xiwa	6.0		3	12
Qinghem Distribution /Transmission Pipelines	Qinghem - Gas Extraction Station	Qinghem	Qinghem	Qinghem		4.8	4	10
				Wujiayao		6	5	14
	Gas Extraction Station – Aiyou		Qinghem	Wujiayao		4.6	4	14
				Lujiadian		7.56	5	16
	Aiyou - Coal Gas Plant	Qinghem	Lujiadian	Lujiadian		5.05	3	7
				Zhuangjiadian		6.72	3	9
			Yimatu	Yimatu		8.58	4	13
				Zhoujiajie		4.6	3	7
		Xihe	Dongliang	Dongliang		6.5	0	0
				Tuhulu		7.6	3	8
				Lalatun		2.8	2	4
				Shahai		5.2	2	5
		Haizhou	Hanjiadian	Xindi		2.23	0	0
				Xihuang		3.2	2	5
				Hanjiadian		5.57	3	8
Haizhou Distribution /Transmission Pipelines	Haizhou Gas Well - Wulong Gas Extraction Station	Haizhou	Urban proper	Wulongjie		7.87	0	0
	Wulong Gas Extraction Station – Coal Gas Plant		Urban proper	Wulongjie		5.5	0	0
	Surface Drilling - Wulong Gas Extraction Station		Hanjiadian	Hanjiadian		3.6	0	0
			Hanjiadian	Minzhu		1.6	1	4
			Urban proper	Wulongjie		2.9	0	0
	Liujiaqu Extraction Station - Wulong Gas Extraction Station		Hanjiadian	Hanjiadian		6.1	2	6
			Urban proper	Wulongjie		2.9	0	0
TOTAL					6.0	111.47	49	142

Note: ¹The Gas Extraction Station will use 45 mu of industrial land owned by the Fuxin CBM/CMM Development and Utilization Co. since 1949, including 15 mu for industrial site of Qinghem Mine, 15 mu for industrial site of Aiyu Mine and 15 mu for industrial site of Wulong Mine. No household will be affected and thus no compensation is required to be paid.

A4. LEGAL AND POLICY FRAMEWORK

There are two sets of regulatory and policy requirements that are applicable to the land acquisition and resettlement of the Project: relevant Chinese laws and regulations at national and provincial levels, and ADB policies. These regulatory and policy requirements are summarized in the following sections.

A4.1 Chinese Laws and Regulations

1) *Land Administration Law of PRC, 1998*

The Land Administration Law of the People's Republic of China was newly amended and brought into force on January 1, 1999, according to the Decision on the Amendment to the Land Administration Law of the PRC that was adopted at the Fifth Session of the Seventh Standing Committee Meeting of the National People's Congress. It is stipulated in **Clause 2, Article 1** of the land administration law that the state can acquire collective-owned land according to the law for the sake of public interests. The law requires that agreement from two thirds of villagers or two thirds of the villagers' representatives be obtained before making adjustments to the land, and be verified by the agricultural administration department of the county or township government.

Article 47 stipulates that in case land acquisition shall take place, compensation shall be made in accordance with the original usage of the acquired land, which shall include a land compensation fee, a relocation subsidy and a compensation fee for the attachment of the land and standing crops. The land compensation fee for the acquired cultivated land is 6-10 times the average annual output value (AAOV) of the land in the previous three years before land acquisition. The relocation subsidy of acquired farmland shall be calculated according to the agricultural population to be resettled. The agricultural population to be resettled is computed with the quantity of acquired farmland divided by farmland quantity per person of the acquired unit. The relocation subsidy for the agricultural population to be resettled shall be 4-6 times the AAOV in the previous three years. But the relocation subsidy for farmland shall not exceed 15 times the AAOV. However, in special cases a higher relocation subsidy may be given to a maximum of 15 times the AAOV over the last three years. The provinces or municipalities directly under the central authority shall determine the standards of compensation for the attachment of the land and standing crops.

2) *Liaoning Management Guidelines for Implementation of the PRC Land Administration Law, 2002*

The relevant stipulations of the ***Liaoning Management Guidelines for Implementation of the PRC Land Administration Law*** applicable to the Project include Articles of 23, 25 and 44 in Chapter 5, which are summarized as follows:

Article 23 of the guideline stipulates that compensation for land and relocation subsidy should be paid according to the following standards: i) The acquisition of farmland shall

be compensated at six (6) to seven (7) times of the AAOV of last three years before the land acquisition; ii) the relocation subsidy of acquired farmland shall be four to six (4-6) times of the AAOV in the previous three years. But the relocation subsidy for farmland shall not exceed 15 times the AAOV of last three years. According to the above regulated land and relocation subsidy, the living standards of farmers still cannot reach original level, additional compensation should be considered with the approval from provincial people's government. But the sum of the land and relocation subsidy shall not exceed 30 times of the AAOV of last three years.

Article 25 stipulates that the attachment of the land and crops shall be compensated according to the standards: 1) attachment on the land will be compensated based on its actual value and loss; and 2) the compensation for standing crops is based on the production value of one season's crops. Since the date of public announcement, no compensation shall be paid to the trees and crops to be planted and other structures to be constructed.

Articles 44 states that the for less than one (1) ha of temporary land occupation of state- and collective-owned land due to a construction project and geological investigation, the approval shall be obtained from the county land administration department; for temporary land occupation of over one (1) ha to less than three (3) ha, the approval shall obtained from the municipal land administration department; and over 3 ha of temporary land occupation from the provincial land administration department.

3) ***Regulation on State-Owned Land Use Rights Transfer through Open Bidding, May 9, 2002, Document No. 11, Ministry of State Land and Resources of PRC***

According to the 4th provision of the ***Regulation of State-Owned Land Use Rights Transfer through Open Bidding***, issued on May 9, 2002 and effective as of July 1, 2002, the current land acquisition procedure, all commercial land use of business, tourism, entertainment and commercial housing must go through an open bidding and transfer process. The supply plan for other types of land except above land use has been publicized, if the same land has over two intended land users to use the land, it shall also go through open bidding for land transfer.

However, taking into consideration of the land required by the Project will only have land user for this specific type of land for CBM/CMM development, the regulation will not be applied to the Project.

A4.2 ADB's Involuntary Resettlement Policy

The Asian Development Bank sets out its official requirements in the Involuntary Resettlement Policy adopted in 1995. The Bank's policy on involuntary resettlement is aimed to: (i) avoid involuntary resettlement wherever feasible; and (ii) minimize resettlement where population displacement is unavoidable, and ensure that displaced people receive assistance, preferably under the Project, so that they would be at least as

well-off as they would have been in the absence of the Project. Appropriate land, housing, infrastructure, and other compensation, comparable to the without project situation, should be provided to the adversely affected population, including indigenous groups, ethnic minorities, and pastoralists who may have usufruct or customary rights to the land or other resources taken for the Project.

According to the Bank policy, the contents and level of detail of a resettlement plan, which may vary with circumstances, especially the magnitude of resettlement, should normally include a statement of objectives, policies and strategy, and should cover the following essential elements: (i) organizational responsibilities; (ii) community participation and integration with host population; (iii) socioeconomic survey; (iv) legal framework, including mechanisms for resolution of conflicts and appeals procedures; (v) identification of alternative sites and selection; (vi) valuation of and compensation for lost assets; (vii) land ownership, tenure, acquisition and transfer; (viii) access to training, employment and credit; (ix) shelter, infrastructure and social services; (x) environmental protection and management; and (xi) implementation schedule, monitoring and evaluation.

The Bank policy also requires that cost estimates should be prepared for these activities; they should be budgeted; and implementation of the activities should be scheduled with time-bound actions in coordination with the civil works for the main investment project. The resettlement plan should have an executive summary. A summary resettlement plan should be included in the draft Report and Recommendation of the President (RRP) for Management Review Meeting, and in the final RRP for Board circulation.

A4.3 Objectives and Principles of Land Acquisition

The primary objectives of this land acquisition plan are to restore the income and living standards of the affected persons (APs) within a short period of time after land acquisition and with as little disruptions as possible in their own economic environment. Particular attention will be given to the needs of the poorest and vulnerable groups to be affected. The RP for this Project has been prepared with these in mind as the guiding principles. To meet the ADB requirements as outlined in the Involuntary Resettlement Policy and ADB Handbook on Resettlement, the following principles and approaches are employed:

LAR Principles: i) Land acquisition should be avoided or minimized where feasible from an economic, engineering, social and environmental perspective; ii) The plan should be prepared for those affected; iii) All people residing cultivating or making a living within the areas acquired for project prior to a formally recognized cut off date should be considered as affected people. They should receive compensation for all losses, including assets and livelihoods regardless of land tenure status, and should be entitled to rehabilitation assistance sufficient to assist them to improve or at least maintain their pre-project living standards, income earning capacity and production levels; iv) APs should be informed of and consulted on land acquisition and compensation standards; v) Land acquisition should be an integral part of project design. No land acquisition will take place prior to the satisfactory compensation of APs; and vi) Land acquisition program

should be monitored by the Government and ADB.

A4.4 Principles of Compensation

In accordance with the legal and policy requirements of the Chinese Government and the Asian Development Bank, the principles of the compensation and entitlements established for the Project include: 1) Compensation and entitlements provided to APs are adequate to at least maintain their pre-project standard of living, with the prospect of improvement; 2) Land temporarily occupied and the period of disruption are kept to a minimum; 3) All APs, legal and illegal, are taken into consideration and accounted for; 4) The per-capita land holding after land acquisition is sufficient to maintain the previous livelihood standards; 5) Where land allocation per capital is not sufficient to maintain previous livelihood standards, other income generating activities are provided for; 6) All APs are adequately informed on eligibility, compensation standards, livelihood and income restoration plans, and project timing; and 7) No land acquisition will take place prior to satisfactory compensation of the APs.

A4.4.1 Definition of APs and Compensation Eligibility

Affected persons (APs) refer to all persons whose livelihood or living standard is adversely affected through the loss of land, other assets, income as a consequence of the Fuxin CBM Extraction Project by the FCCDUC **Table A4.1** below summarizes the types of people who are eligible for compensation and entitlements.

Table A4.1 Summary of Eligibility Criteria

Project Component	Eligibility
CBM Extraction	All of the people losing their land and standing crops within right-of-way (red line) by the CMB component
Pipelines	All affected people due to the land occupation by newly constructed pipelines for sections from wells to compress station

All APs losing land, standing crops or sources of income will be compensated or rehabilitated in accordance with the type and amount of their losses and they are included in the final Detailed Measurement Survey (DMS) to be completed within the deadline specified by the government, or are identified as affected temporarily during construction. The deadline specified by the government is set as the final date for compensation eligibility. APs cultivating land and other productive assets after the deadline will not be eligible to compensation or subsidies.

A4.4.2 Basis of Compensation Rates

According to the Liaoning Management Guideline of PRC Land Administration Law and the permanent and temporary land acquisition policy of local State Land and Resources Bureau, the following compensation standards are finalized for the Project. It will be discussed with the APs.

Permanent loss of agricultural land will be compensated in cash to the affected villages at a rate equivalent to 10 times the AAOV. Individuals or entities legally and illegally using affected plots will be compensated in terms of "land for land" mechanisms through redistribution of land within the village territory or other means.

All APs affected by permanent agricultural land losses will be entitled to receive a land relocation allowance equivalent to 10 times the AAOV. The loss of standing crops and trees will be compensated in cash to the APs at a rate equivalent to one (1) times the AAOV.

According to the PRC Land Administration Law, the compensation of land losses consists of land compensation as well as land relocation subsidy and standing crops compensation. Combined together, they are equal to 21 times the AAOV. The detailed standards of compensation are presented in **Table A4.2**.

Table A4.2 Compensation Rate of Permanent Agricultural Land Acquisition

Type of Land	Output (kg/mu)	Unit Price (yuan/kg)	Compensation Factor (x AAOV)			Total (RMB/mu)
			Land	Relocation Allowance	Standing Crops	
Dryland	800	1.25	10	10	1	21,000

Temporary agricultural land losses will be compensated in cash to the APs through a land recovery subsidy equivalent to one (1) time the AAOV relative to the crops cultivated in the affected plot. Land cannot be occupied for more than 2 years. All APs will directly receive full compensation in cash for the crops lost calculated at output value of crop for one season, in addition to the land recovery subsidy. As a result, the compensation for the crop loss and land rehabilitation of temporary land occupation will be RMB 7,667 per mu for dryland (RMB 1,000 per mu for crops loss to be paid to APs directly and RMB 6,667 per mu for land recovery to be paid to the respective Township Land Administration Office).

It should be noted that land compensation funds will be paid to the local governments to develop the productive capacity of the remaining land in their jurisdiction and/or develop other economic activities and/or village infrastructure in combination with the annual investment of local government. The measures will include: (1) re-allocation of land in the village/township; (2) development of productive capacity of the remaining land; and (3) village infrastructure development.

A4.5 Special Considerations

Incorporation of the needs and interests of the poor, women, elderly and children will be ensured during the Project planning and implementation phases through intensive consultations. Special attention will be given to the potential difficulties faced by low-income earners in the affected communities in land acquisition planning and implementation. Focused consultation and participation programs will be carried out. When there are adverse impacts on women, elderly and children, and poor families; additional social development fund of RMB 5,000 per households will be provided to them.

A4.6 Entitlement Matrix

From the census survey by the FCCDUC, the major impacts of land acquisition have been identified based on the nature of losses; an entitlement matrix has been prepared as a guide to compensation payments. The matrix is presented in **Table A4.3**.

Table A4.3 Entitlement Matrix

Type of Losses	Level of Impact	Entitled Persons	Compensation Policy and Standards	Implementation Issues
Permanent land loss (<i>No illegal APs</i>) (3 households or 12 persons)	Permanent loss of dryland and crops. 6.0 mu of land in total for the Project	<p>All users with or without legal papers including AP settled on the land after 29/08/98 (Land Law) as long as they are included in the final AP list or are able to prove their occupation of affected plots before the cut-off date. The cut-off date is the date of conclusion of the inventory survey in project area, i.e. by the end of October 2003</p> <p>All users (including encroachers) shall receive compensation for loss of standing crops only</p>	<ul style="list-style-type: none"> Land compensation for permanent land loss. The compensation rate shall be RMB 10,000 per mu to be paid to the affected village. The tax on permanent land acquisition will be paid to the local land administration bureau Relocation subsidy for loss of land permanently. The compensation rate shall be RMB 10,000 per mu to be paid the affected household or village collective depending upon land use contract. Cash compensation for loss of standing crops at market prices. The compensation rates for crops shall be around RMB 1,000 per mu which will be paid to APs <p>AND</p> <ul style="list-style-type: none"> As a priority, provision of land with an area closing that of the lost land and satisfaction to the AP, OR If the land lost is marginal, the AP have the option of receiving cash compensation at full replacement cost if they wish 	
Temporary Land Occupation (46 households or 130 persons)	Loss of use of land and crops during construction period. 111.47 mu in total for the Project	<p>All users with or without legal papers including AP settled on the land after 29/08/98 (Land Law) as long as they are included in the final AP list or are able to prove their occupation of affected plots before the cut-off date. The cut-off date is the date of conclusion of the inventory survey in project area, i.e. by the end of October 2003</p> <p>All users (including encroachers) shall receive compensation for loss of standing crops only</p>	<ul style="list-style-type: none"> Cash compensation for loss of standing crops at market price. The compensation rates for crops shall be like this: RMB 1,000 per mu for dryland which will be paid to APs directly. Land recovery at the cost of RMB 6,667 per mu will be paid to the respective township land administration office <p>AND</p> <ul style="list-style-type: none"> Restoration of land to its previous or higher quality when land are returned 	Measures shall be taken to improve land quality in cases of land quality being adversely affected. Mainly keeping the surface rich soil and levelling and modifying the land by the user of the land when they are returned.

A4.7 Gaps Between ADB and Chinese Policies

According to Chinese regulations, no entitlement is considered for illegal land developers, tenants and renters, whereas the ADB policy requires the above APs to be compensated the same way as the regular APs.

The FCCDUC will follow the ADB policy in this regard. It is agreed that all APs, legal and illegal, are taken into consideration and accounted for. Therefore APs without legal title will directly receive full compensation as the regular APs. Tenants/labourers will be guaranteed a rental contract equal to the remaining years of their previous contract and contract terms will be equivalent to those of the old contract.

Chinese regulations require giving all APs the same treatment without gender consideration. However, the ADB policy requires giving special consideration to women, female-headed households and other venerable groups. The FCCDUC has followed the policy of the Bank and has incorporated the issues of vulnerable groups and gender equity into the land acquisition and resettlement planning and implementation through the provisions of social development fund, special considerations of their needs, and preferential employment policy to them.

A5. RESETTLEMENT AND INCOME RESTORATION PLAN

The ultimate objective of the RP is to improve the living conditions of the affected households and host communities. Given the fact that the permanent loss of land to the Project will reduce the availability of the resources to the rural communities who depend largely on land for their livelihood, the achievement of the better-off objective will necessitate the establishment of income restoration programs that will offer the APs.

All of households to be affected by the land acquisition are farmers. The purpose of this section is to identify and assess possible options available for the income restoration program.

A5.1 Livelihood Rehabilitation Plan

A5.1.1 Employment of APs by the Project

It is stipulated in the Land Administration Law of the PRC of 1998 that all levels of local governments shall support the affected rural collective economic enterprises and individual farmers to establish and operate new enterprises. To this effect, the local governments will make use of the compensation for acquired land to expand employment opportunities in the affected communities, along with a host of other measures such as increased agricultural production, employment of APs in project activities, social

assistance to the most vulnerable groups.

On the basis of the Law and the wishes of the APs, Fuxin CBM/CMM Development and Utilization Co. will provide employment and training opportunities to the affected people as first priority during construction and operational phases if they choose so. According to estimates, the Project will provide 2,700 person-years of employment opportunity generation during the Project construction and 320 full time employment opportunity generations during the operational phase of the Project. The affected people will be given first priority to be employed in the Project as workers, safety guards, cleaners and so on, if they wish. On average, they can make about RMB 500 to RMB 800 salary per month. Their income will be increased substantially.

A5.1.2 Land Re-Adjustment and Agricultural Extension

For those who would like to choose land re-adjustment, the local governments will adjust the allocation of land to the APs through re-allocation within the village. As only three (3) households will be affected by the loss of permanent land acquisition, the impact of land acquisition is very small. In addition, the local governments will design and undertake programs to intensify and diversify farm operations for the APs in order to raise the value of production and income per unit of land.

According to consultations with local government agencies, the introduction of economic crops and new technologies will be promoted to farmers in the affected communities. Specific measures being considered include introduction of high-quality and high value economic products, green houses, animal breeding, more efficient application of fertilizers, and so on. Agricultural technicians and cadres will be dispatched to the affected villages and farmer households to provide workshops and hands-on training. The workshops and training will be provided semi-annually. FCCDUC will cover all of the training costs.

A5.5 Gender Considerations

In the affected areas, women play a very active role in the economic development activities as well as household work. Apart from family responsibilities, women are playing an active role in the agricultural production process, both on farm and non-agricultural activities. Women also account about half of the population in the affected area. In addition, women in affected areas earned large proportion of family income. If without consideration of unpaid household work, women contribute more labour than male counterpart. Women will need special attention and support to maintain their sources of livelihood and traditional production pattern.

FCM and the local government will pay special attention and support to women, concerning their household needs, particularly women-headed households, and maintain their sources of livelihood and traditional production pattern. Proper employment arrangement will be made to women through the employment generation of the Project to maximize the benefits to women.

A6. PUBLIC INFORMATION, CONSULTATION AND PARTICIPATION

The public consultation is carried out during the Project design and planning phase by the FCCDUC, particularly through the following activities:

- Interviews with affected households;
- ADB PPTA Resettlement Specialist and technical staff of the Project had an site visit and informal discussion with the village leaders and selected APs in August and September, 2003;
- Measurement surveys conducted in October 2003;
- Socio-economic survey of the APs in October 20, 2003;
- Meetings with various stakeholders held between August and October, 2003
- Meetings with village representatives in October 2003 (see **Appendix A-1** and **Appendix A-2** for the summary meeting notes).

The *Land Administration Law* requires the disclosure and consultation with the APs (**Articles 48 and 49**). The APs will be notified about the key elements of the land acquisition plan on village meetings to be held in November and participated in the planning and design of the land acquisition program. It is planned that a number of village meetings and interviews to discuss key elements of the land acquisition program will be convened in affected villages. Results of these consultations were integrated into the final RP.

The RP booklet (**Appendix B-2**) was prepared and distributed to the APs in November, 2003. In addition, the RP will be available to anyone at the villages wishing to consult. Copies of the RP in Chinese will also be made available in the village committees while copies in English will be submitted to ADB in September 2004.

Further consultation with the APs will continue so that all issues may be addressed prior to the start of the Project construction and implementation of the RP. The meetings will be arranged by the FCCDUC in association with village committees. Each affected household will have the opportunity to negotiate on a valuation contract. The final RP will be submitted to ADB before September 2004. In order to address the problems and needs of the APs properly and timely regarding land acquisition, further consultation with APs will continue through the land acquisition process so that all issues may be addressed prior to the start of construction and implementation of the RP.

The public participation and consultation plan is shown in **Table A6.1**.

Table A6.1 Public Participation Plan

Purpose of Event	Form of Event	Timing	Implementing Agencies	Target Participants	Remarks
1. Provide briefings to APs on Project & LA. Solicit comments from APs.	Public meetings	Completion of PPTA Draft Final Report (Nov'03)	FCCDUC, township government, and village committees	All APs	Meetings to be held in each village
2. Conduct final detailed census survey	Site investigations and household interviews	Loan-Fact Finding (Nov'03)	FCCDUC, township land administration office, and village committees	All APs affected by land acquisition of the Project	Inventory of all assets and land holdings Extraction of socio-economic data
3. Present draft final RP to APs	Public & community meetings and focus group discussion	Draft final report and Implementation (Sept'04)	FCCDUC, township government, and village committees	All APs	Distribution of the draft final RP to APs to discuss concerns & gaps relating to RP Undertake discussions with various focus groups to solicit comments & suggestions
4. Inform beneficiaries of project progress, final design, and timing	Community meetings and focus group discussion	Loan approval	FCCDUC, township government, and village committees	Stakeholders, beneficiaries, and APs	Meetings to be held with beneficiary population, and with APs
5. Advise APs of entitlements and dates of disbursement	Public meetings	Implementation (Jan'05 – Jul'06)	FCCDUC, township government, and village committees	All APs	Household meetings to outline entitlements
6. Monitoring of APs, beneficiaries and health impacts.	Household interviews	Post land acquisition (Apr'05 – Jul'06)	FCCDUC, township government, and village committees, independent external monitor	Random samples	Identify need for additional support, particularly for vulnerable and disadvantaged group Provide recommendations and update RP monitoring plan Identify health improvements

A major issue in land acquisition implementation and management is the appropriate institutional framework for both the executing agency and field levels. It is important to ensure timely establishment and effective functioning of appropriate organisations mandated to plan and implement land acquisition, compensation, income restoration and livelihood programs.

A7. INSTITUTIONAL ARRANGEMENT

A major issue in land acquisition implementation and management is the appropriate institutional framework. It is important to ensure timely establishment and effective functioning of appropriate organizations mandated to plan and implement land acquisition, compensation, income restoration and livelihood programs. For a successful implementation of the RP, an institutional framework has been developed. The respective responsibilities of the FCCDUC and other relevant organizations are developed and summarized in **Table A7.1**.

Table A7.1 Institutional Responsibility Matrix

Institution	Responsibility
FCCDUC	<ol style="list-style-type: none"> 1) Coordinating construction and implementation of RP, including: contracting the relevant design Institutes to determine the boundary of construction according to Project design, applying to Municipal Planning Bureau for land-use permit, and applying to provincial State Land and Resources Bureau for construction land use permit 2) Conducting measurement survey of land acquisition within the construction boundary 3) Negotiating and signing LA contracts 4) Disbursing compensation funds 5) Insurance of the employment of APs for the positions generated by the Project 6) Conducting internal monitoring on the progress of RP 7) Supervising the implementation of the RP 8) Review monitoring reports and adopt corrective measures if necessary 9) Disburse funds for LA to APs and village committees/township 10) Inspect land use conditions after LA
Fuxin Planning Bureau	<ol style="list-style-type: none"> 1) Review the application from FCCDUC for land use permit and preliminary approval document 2) Verify the boundary of land and property acquisition 3) Issue “planned land use permit”
Fuxin State Land and Resources Bureau	<ol style="list-style-type: none"> 1) Issue “construction land use permit”, in accordance with the land use application of the FCCDUC and the “planned land use permit” issued by Fuxin Planning Bureau 2) Supervise the implementation of the RP for compliance with approved plan and approval documents 3) Handle complaints and grievances from APs
Township Government/Village Committees	<ol style="list-style-type: none"> 1) Conduct detailed survey 2) Negotiate compensation amounts and sign LA compensation agreements with FCCDUC for land loss 3) Reassign collective agricultural land to APs 4) Provide income restoration and livelihood rehabilitation programs to APs 5) Provide necessary assistance to APs during land acquisition process 6) Ensure that APs receive adequate training 7) Carry out the internal monitoring of RP implementation
Project Leading Group	<ol style="list-style-type: none"> 1) Supervise and monitor the implementation of LA 2) Review internal monitoring reports 3) Review summary reports and independent reports prepared by relevant institutions 4) Propose corrective actions if problems are discovered in reviewing the progress reports and supervising implementation 5) Review external monitoring reports prepared by the independent monitoring agency 6) Propose mitigation measures for any gaps in the RP to ensure that the objectives of the RP will be achieved

In order to ensure that the staff of FCCDUC and township/village committees can properly and smoothly handle the land acquisition. A training program will be organized. During implementation, the officers in FCCDUC will interact with the various local governments and other agencies, identify problems early and bring them to the attention of the Project Leading Group.

One of the major responsibilities of the land acquisition office staff is to conduct internal monitoring of the LA program. The staff of the land office of FCCDUC and township/village committees will be provided with special training in project monitoring before the initiation of field activities related to land acquisition.

A8. GRIEVANCE PROCEDURES

FCCDUC will make every effort to reach an agreement with each affected household on the land compensation on the basis of the policy and compensation principles mentioned in Section 4 above. To ensure that the affected people have avenues for redressing their grievances in the event that some issues occurred related to any aspect of land acquisition, detailed procedures have been established for the Project. The grievance procedures can be as follows:

- i) Affected people can appeal to the village committees;
- ii) If the village committee cannot solve the issue, it is taken to any of the following:
 - Fuxin CBM/CMM Development and Utilization Co. (FCCDUC)
 - Township Government
 - Fuxin State Land and Resources Bureau
- iii) Reply should be made by the above agencies on the appeal within 15 days;
- iv) If AP is not satisfied with response or if the complaint is of a serious nature, then the appeal is taken to the Fuxin State Land and Resources Bureau;
- v) Reply should be made by the Fuxin State Land and Resources Bureau on the appeal within 30 days;
- vi) If the AP is still not satisfied with the response then they have the legal right to submit the appeal to the court.

A9. LA BUDGET

A9.1 Costs and Budget

The costs to of land acquisition are included in the overall budget of the Project. The total costs of land acquisition are estimated to be **RMB 1.45** million at the prices of September 2004, including RMB 126,000 for permanent land acquisition of the CBM Extraction Component and 854,640 for the temporary land occupation of the pipelines,

and RMB 281,120 for taxes and other costs, and RMB 189,265 for contingency. More than 90% of the budget will be used for the first year of the civil work construction. The detailed cost estimates are presented in **Table A9.1**.

Table A9.1 Detailed Cost Estimate of Land Acquisition

Compensation	Type of Land	Quantity	Unit	Unit Price	Total (RMB)
1. CBM Extraction					
Permanent Land Acquisition ¹	Dryland	6.0	mu	21,000	126,000
	Subtotal	6.0	mu		126,000
2. Pipelines					
Temporary Land Occupation (dryland)	Land user	111.47	mu	1,000	111,470
	Township fee	111.47	mu	6,667	743,170
	Subtotal	111.47	mu		854,640
3. Taxes and Other Costs					
Land Tax ²	Dryland	6.0	mu	16,000	96,000
Land Administration Fee ³	Dryland	6.0	mu	2,520	15,120
Social Development Fund		20	Hh	5,000	100,000
Administration					20,000
Training					50,000
	Subtotal				281,120
4. Contingency	15%				189,265
	Subtotal				189,265
TOTAL					1,451,025

Note: ¹ The cost of permanent land acquisition excludes 4.4 mu of land which is owned by FCCDUC.

² The land tax is RMB 24 per square meter.

³ Based on 12% of permanent land acquisition cost.

The compensation for land loss shall be paid to the affected village. The compensation rate shall be RMB 10,500 per mu. The tax on permanent land acquisition at the rate of RMB 16,000 per mu shall be paid to the local land administration bureau. The land recovery cost of the temporary land occupation shall be paid to the respective township land administration office at the rate of RMB 6,667 per mu. The affected land user will receive RMB 1,000 per mu; the construction will only affect one crop season.

A9.2 Flow of Funds

FCCDUC will be responsible for the financing of land acquisition cost under the Project. In accordance with the compensation policies and rates given in this RP, FCCDUC will sign compensation agreements with the following recipients and disburse the payments:

- respective township government/village committees for: a) the losses of farmland land by permanent land acquisition; b) the losses of farmland by temporary land occupation.

- APs for compensation of standing crops;
- Hanjiadian Township Land Administration Office for land tax and land administration fee.

An external and independent auditor will audit the disbursement of land acquisition fund.

A9.3 Administrative Costs

The Project Construction Unit of FCCDUC will be budgeted 2% of the total amount of compensation payable for the implementation of land acquisition.

A9.4 Contingencies

The cost estimates for land acquisition implementation include provision of contingencies, both price and physical (5% and 10% respectively).

FCCDUC is responsible for provision of adequate funds to carry out the implementation of the RP. Cost over-runs, if any, in the case of RP implementation will be incurred by FCCDUC.

A10. SUPERVISION AND EVALUATION

A10.1 Monitoring, Evaluation Objectives and Requirements

The objectives of monitoring and evaluation are to assess if the RP is implemented on schedule and within budget and if the goals and principles of the RP are achieved. Monitoring and evaluation will include, but not be limited to: (1) monitor the progress and effectiveness of RP implementation; (2) ensure that the standard of living of APs are restored or improved; (3) assess if rehabilitation measures and compensation are sufficient; (4) identify problems or potential problems; and (5) identify methods of responding immediately to mitigate problems.

A monitoring and evaluation program will, accordingly, be implemented to (i) record and assess project inputs and the number of persons affected and compensated; and (ii) confirm that former subsistence levels and living standards are being re-restored and re-habilitated.

Specifically, monitoring and evaluation will focus on the following aspects of the APs' situation and land acquisition process: i) land acquisition and transfer procedures; ii) compensation payments; iii) economic situation prior to and after land acquisition /use; iv) restoration or rehabilitation of income levels. Monitoring and evaluation should include: establishment of socio-economic background data of the APs prior to actual land acquisition and regular monitoring of their situation for a period of 2 years after land acquisition. In addition, qualitative and quantitative evaluation will be made on the

sustainability of at least the pre-project standard of living of the APs.

A10.2 M&E Indicators and Mechanisms

In order to ensure that the implementation of the land acquisition plan in accordance with the requirements, monitoring of implementation, both “internal” and “external”, will be carried out during and after the implementation of the Project. For internal monitoring, the Construction Unit of the FCCDUC, will take full responsibility for conducting regular internal monitoring of the RP. For external monitoring and evaluation, a qualified and independent monitoring agency will be engaged by the FCCDUC to undertake supervision, monitoring and evaluation of land acquisition and livelihood and income rehabilitation from the Project beginning to completion.

Table A10.1 summarizes a range of monitoring and evaluation indicators established to ensure attainment of objectives of land acquisition.

Table A10.1 Monitoring and Evaluation Indicators

Type	Indicator	Examples of Variables
Process Indicator	Staffing	<ul style="list-style-type: none"> ● Number of FCCDUC staff on Project, by component and job function ● Number of other line agency officials available for tasks
	Consultation, Participation, and Grievance Resolution Procedures in Operation	<ul style="list-style-type: none"> ● Number of consultation and participation programs held with various stakeholders ● Grievances by type and resolution ● Speed of redress of grievances ● Number of field visits by FCCDUC staff ● Effectiveness of compensation payment ● Coordination between FCCDUC and other line agencies
Output Indicator	Acquisition of Land	<ul style="list-style-type: none"> ● Area of permanent land acquired ● Area of land occupied temporarily
	Standing Crops and Trees	<ul style="list-style-type: none"> ● Standing crops destroyed by area, type and number of owners
	Compensation and Rehabilitation	<ul style="list-style-type: none"> ● Number of households affected (land, crops) ● Number and amount of compensation paid ● Amount of cultivated land re-allocation of cultivated land ● Type of agricultural technology and products introduced to the APs ● Number of job opportunities available to APs ● Number of APs trained. ● Number of employed or unemployed
Impact Indicator	Household Earning Capacity	<ul style="list-style-type: none"> ● Employment status of economically active members ● Landholding size, area cultivated and production volume, by crop ● Changes to income-earning activities (off-farm): pre- and post land acquisition/land lease

During implementation of the land acquisition, internal monitoring will be undertaken every six (6) weeks. Post-land acquisition monitoring will be undertaken internally every three (3) months. The independent monitoring agency will undertake external monitoring every six (6) months. The information of monitoring will be checked from three sources: 1) the affected persons; 2) the affected village committees; 3) the respective Township Government; and 3) the Hanjiadian Land Administration Office. The external monitoring agency will also carry out a comprehensive socio-economic survey after the completion of implementation to document the standards of living and the conditions of the APs after land acquisition. A monitoring report will be prepared by the independent monitoring agency, including among other things: i) conclusion of evaluation; ii) major existing and potential problems; iii) recommendations of mitigation or prevention measures; and iv) resettlement completion report.

The report of land acquisition monitoring in English will be forwarded to the Bank. FCCDUC shall ensure that the monitoring agency includes information on the progress and status on all aspects of land acquisition activities. FCCDUC will also submit a final report to the Bank, to be followed by a post-land acquisition impact evaluation by the monitoring agency, which should provide further evidence whether adverse effects of the Project have been mitigated adequately, and at least pre-land acquisition income have been restored.

A11. IMPLEMENTATION SCHEDULE

Based on the time schedule of the Projects, a preliminary land acquisition compensation schedule reflecting the linkage land acquisition tasks and civil works construction tasks shall be consistent with the time schedule of the Projects.

The permanent land acquisition will be completed one month before the start of the civil work construction. All of the land acquisition activity will be completed within the first three month (January to March, 2004) before the start of the Project construction. The temporary land occupation will be from April 2005 to July 2006.

The proposed schedule is expected to ensure that all APs, prior to the land acquisition: i) will have been adequately consulted about the Project, its impacts and compensation entitlements; ii) will have received compensation entitlements in a timely manner; and iii) have been provided with means to establishing livelihood.

Appendix A-1

Summary of Interview with Leaders of Village and Township and Representatives of Villagers Affected by Land Acquisition

Place: Minzhu Village, Hanjiadian Township, Haizhou District, Fuxin City
Date: Oct 10, 2003
Participants: Wang Hongzhi (Project Office of FCCDUC); Zhang Fengguo (General Engineer of CBM Development Co.); Zhao Xin and Liu Chunxiang (Office of CBM Development Co.); Yin Jingdong (Safety Office of CBM Development Co.); Wang Zhi (Vice Head of Hanjiadian Township); Zhang Chunguang (Secretary General of Communist Party of Minzhu Village); Li Yi (Vice Director of Minzhu Village Committee); and Wu Shuguo, Wang Jian, Li Yukui, Li Guiqin and Zhang Tianjiao (Representatives of the Villagers)

The Project Office organized the interviews to survey the land acquisition issues with the leaders and the villagers in Minzhu Village to be affected by the Project, and the surveys of the villagers in the villages that pipelines will pass through. The surveys have been conducted on the socioeconomic situations and income, and on opinions of APs about the Project construction and the compensation issues of land acquisition. The general situation of the village affected by the Project and the summary of the meetings and surveys are as follows.

I) General Socio-Economic Situation

Minzhu Village is located in the west suburb of Haizhou District, Fuxin City, which is affected by the land acquisition by CBM/CMM surface drilling. The village is relatively close to the city, and has a better economic situation. In total, there are 325 households in the village, with a total population of 1,248; most of them are engaged in agriculture. Minzhu Village has 1,872 mu of farmland. The average land holding per capita is 1.5 mu. The major agricultural crops are corn, millet and wheat. Some farmers also grow vegetables in green house. All of the farmland is dry land.

II) Summary of the Surveys

With the assistance of the village leaders, interviews have been made to the selected villagers, with focus on the villagers mostly affected by the permanent land acquisition. Those living along the pipelines have also been interviewed. The results are summarized as follows:

- a) Introduction by the Project officer to the villagers on the briefings of the Project, the importance of the Project, the construction period, and the location of permanent land acquisition and the temporary land occupation by the construction of pipelines.

- b) Introduction of the land acquisition compensation policies and obtaining the villagers' opinions on the land acquisition.
- c) The villagers affected by the Project requested that they should be compensated in accordance with the concerned national policies on land acquisition, and temporary land occupation should be compensated for land recovery and standing crops.

The specific compensation measures are suggested as follows:

Permanent land acquisition: Compensation should be paid at the 10 times of the AAOV of last three years, and the APs should be re-allocated with equivalent size of land by the village and township.

Temporary land occupation: Compensation should be made at one time of the AAOV of last three years for land recovery, and the young crops should be compensated for about RMB1,000.

- d) Assurance should be made to pay compensation timely. The agreement should be reached before land acquisition to ensure the normal livelihood of affected villagers not to be affected. The temporary land occupation should not be more than 2 years. The land should be restored after the construction.

III) Opinions of Villagers

- a) Most of the affected villagers expressed that they support the Project, and they trust that the Project would enhance the utilization of the local resources, protect the local environment, increase the profitability of enterprises, reduce the discharge of CBM into air, and stimulate the local economic development in line with social and environmental benefits.
- b) Most affected villagers generally understand the relevant national land acquisition laws and policies. They agreed with the compensation rates in accordance with the related national laws and policies. They requested to be compensated in cash timely for the loss of land and properties. Otherwise, the Project should not be constructed.

Appendix A-2

Summary of Socio-Economic Survey of Affected Village

Place: Minzhu Village, Hanjiadian Township, Haizhou District, Fuxin City, and Other Villages along the Pipeline
Date: Oct 10, 2003
Participants: Wang Hongzhi (Project Office of FCCDUC); Zhang Fengguo (General Engineer of CBM Deveopment Co.); Zhao Xin and Liu Chunxiang (Office of CBM Development Co.); Yin Jingdong (Safety Office of CBM Development Co.)

Minzhu Village is located in the west suburb of Haizhou District, Fuxin City, which is affected by the land acquisition by CBM/CMM surface drilling. The village is relatively close to the city, and has a better economic situation. In total, there are 325 households in the village, with a total population of 1,248; most of them are engaged in agriculture. Minzhu Village has 1,872 mu of farmland. The average land holding per capita is 1.5 mu. The major agricultural crops are corn, millet and wheat. Some farmers also grow vegetables in green house. All of the farmland is dry land.

Minzhu Village is close to the urban proper of the city, roads and railways, with a relatively good transportation, and also close to the coalmines. Its economic base is average. It has a primary school with an average education condition. There is a small clinic in the village.

The villages along pipelines are located far away from the city, where economic conditions are worse than Minzhu Village. However, the land holding per capita is almost similar to Minzhu Village. Agriculture is the dominant sector. Foods and vegetables are for subsistence.

The survey result shows that the villagers considered that the Project is in line with the national industry policies and is good to increase the economic benefits of the industry, reduce the CBM discharge into air, improve the local environment, increase the utilization of resources, stimulate the economic development, and produce relatively greater socio-economic and environmental benefits. The APs expressed their support for the Project.

Resettlement Plan Booklet

1. INTRODUCTION

The Fuxin CBM/CMM Development Project is located in the Fuxin coal mining area, in the west of Liaoning Province. The Project will recover CBM/CMM by underground gas drainage systems and vertical standard wells. Twenty-four (24) vertical wells will be drained in three (3) coal mines. The Project consists of: a) installation of 18 vertical wells; b) installation of one 50,000 m³ above ground gas tank; c) construction of three (3) mine gas extraction stations; and d) installation of three units for CBM fired power generation plants, with a total capacity of 30 MW. The CBM recovered will be supplied to residential and industrial users in Fuxin city. It is expected that the Project will bring about substantial socioeconomic benefits to the local populations residing in the Project beneficiary areas at large, particularly the poor and women, including increase of employment opportunities and income for local residents during the Project construction and operation; stimulation of regional economic development; reduction of greenhouse gas (GHG) emissions, improvement of environment and health; and improvement of mine workers' safety.

2. LAND ACQUISITION IMPACTS

The construction of the Fuxin CBM/CMM Development Project will affect one village in one township and one district by permanent land acquisition, which is located in Xiwa village, Hanjiadian township of the Xihe district, Fuxin city. The CBM surface extraction component will affect three (3) rural households or 12 persons and acquire 10.4 mu (0.69 ha) of dryland permanently. The gas pipeline will temporarily occupy 111.47 mu (7.43 ha) of individual farmers' dryland and 46 rural households (130 persons) will be affected. The summary impacts of the land acquisition of the Project are presented in **Table 1**. The impacts of permanent land acquisition and temporary land occupation are small. Therefore the impact will be limited.

Table 1 Permanent Land Acquisition by Fuxin CBM Development

Name of the Project Components		Affected Counties/ Districts	Affected Towns	Affected Villages/ Streets	Type of Land (mu)		Affected Households (no.)	Affected Population (no.)	
					Permanent Acquisition (Dry Land)	Temporary Land Occupation			
Surface Drilling and Extraction Field		Haizhou	Hanjiadian	Xiwa	6.0		3	12	
Qinghem Distribution Pipelines	Qinghem - Gas Extraction Station	Qinghem	Qinghem	Qinghem		4.8	4	10	
				Wujiayao		6	5	14	
	Gas Extraction Station – Aiyou		Qinghem	Qinghem	Wujiayao		4.6	4	14
					Lujiadian		7.56	5	16
	Aiyou - Coal Gas Plant	Qinghem	Lujiadian	Lujiadian		5.05	3	7	
				Zhuangjiadian		6.72	3	9	
			Yimatu	Yimatu		8.58	4	13	
				Zhoujiatie		4.6	3	7	
		Xihe	Dongliang	Dongliang		6.5	0	0	
				Tuhulu		7.6	3	8	
				Lalaton		2.8	2	4	
				Shahai		5.2	2	5	
		Haizhou	Hanjiadian	Xindi		2.23	0	0	
				Xihuang		3.2	2	5	
				Hanjiadian		5.57	3	8	
Haizhou Distribution Pipelines	Haizhou Gas Well - Wulong Gas Extraction Station	Haizhou	Urban proper	Wulongjie		7.87	0	0	
	Wulong Gas Extraction Station – Coal Gas Plant		Urban proper	Wulongjie		5.5	0	0	
			Hanjiadian	Hanjiadian		3.6	0	0	
	Surface Drilling - Wulong Gas Extraction Station		Hanjiadian	Minzhu		1.6	1	4	
			Urban proper	Wulongjie		2.9	0	0	
	Liujiaqu Extraction Station - Wulong Gas Extraction Station		Hanjiadian	Hanjiadian		6.1	2	6	
Urban proper		Wulongjie		2.9	0	0			
TOTAL					6.0	111.48	49	142	

3. LEGAL AND POLICY FRAMEWORK

There are two sets of regulatory and policy requirements that are applicable to the land acquisition and resettlement of the Project: relevant Chinese laws and regulations at national and provincial levels, and ADB policies. The legal and policy framework and compensation standards are summarized as follows:

A. Legal and Policy Framework

The RP is based on the following major legal documents:

- 1) The Land Administration Law of the People's Republic of China was newly amended and brought into force on January 1, 1999.
- 2) Liaoning Management Guidelines for Implementation of the PRC Land Administration Law, 2002
- 3) ADB's Involuntary Resettlement Policy

The primary objectives of this RP are to restore the income and living standards of the affected persons (APs) within a short period of time after land acquisition and with as little disruptions as possible in their own economic environment.

B. Compensation Eligibility and Standards

Affected persons (APs) refer to all persons whose livelihood or living standard is adversely affected through the loss of land, other assets, income as a consequence of the Fuxin CBM/CMM Development Project by the FCCDUC. **Table 2** below summarizes the types of people who are eligible for compensation and entitlements.

Table 2 Summary of Eligibility Criteria

Project Component	Eligibility
CBM Extraction	All of the people losing their land and standing crops within right-of-way (red line) by the CMB component
Pipelines	All affected people due to the land occupation by newly constructed pipelines for sections from wells to compress station

All APs losing land, standing crops or sources of income will be compensated or rehabilitated in accordance with the type and amount of their losses and they are included in the final Detailed Measurement Survey (DMS) to be completed within the deadline specified by the government, or are identified as affected temporarily during construction. The deadline specified by the government is set as the final date for compensation eligibility. APs

cultivating land and other productive assets after the deadline will not be eligible to compensation or subsidies.

According to the Liaoning Management Guideline of PRC Land Administration Law and the permanent and temporary land acquisition policy of local State Land and Resources Bureau, the following compensation standards for the Project are:

For permanent loss of agricultural land, compensation for land will be paid in cash to the affected villages at a rate equivalent to 10 times the AAOV. Compensation for relocation subsidy will be paid in cash equivalent to 10 times the AAOV to the APs. The loss of standing crops and trees will be compensated in cash to the APs at a rate equivalent to one (1) times the AAOV. Combined together, they are equal to 21 times the AAOV. The detailed standards of compensation are presented in **Table 3**.

Table 3 Compensation Rate of Permanent Agricultural Land Acquisition

Type of Land	Output (kg/mu)	Unit Price (RMB/kg)	Compensation Factor (x AAOV)			Total (RMB/mu)
			Land	Relocation Allowance	Standing Crops	
Dryland	800	1.25	10	10	1	21,000

Temporary agricultural land losses will be compensated in cash to the APs through a land recovery subsidy equivalent to one (1) time the AAOV relative to the crops cultivated in the affected plot. Land cannot be occupied for more than 2 years. All APs will directly receive full compensation in cash for the crops lost calculated at output value of crops for one season. As a result, the compensation for the crop loss and land rehabilitation of temporary land occupation will be RMB 7,667 per mu for dryland (RMB 1,000 per mu for crops loss to be paid to APs directly and RMB 6,667 per mu for land recovery to be paid to the respective Township Land Administration Office).

It should be noted that land compensation funds will be used by local governments to develop the productive capacity of the remaining land in their jurisdiction and/or develop other economic activities and/or village infrastructure. The measures will include: (1) re-allocation of land in the village/township; (2) development of productive capacity of the remaining land; and (3) village infrastructure development.

When there are adverse impacts on women, elderly and children, and poor families, additional social assistance will be provided to them.

The compensation entitlement matrix for the Project is presented in **Table 4**.

Table 4 Entitlement Matrix

Type of Losses	Level of Impact	Entitled Persons	Compensation Policy and Standards	Implementation Issues
Permanent land loss (<i>No illegal APs</i>) (3 households or 12 persons)	Permanent loss of dryland and crops 6.0 mu of land in total for the Project	<p>All users with or without legal papers including AP settled on the land after 29/08/98 (Land Law) as long as they are included in the final AP list or are able to prove their occupation of affected plots before the cut-off date. The cut-off date is the date of conclusion of the inventory survey in project area, i.e. by the end of October 2003</p> <p>All users (including encroachers) shall receive compensation for loss of standing crops only</p>	<ul style="list-style-type: none"> Land compensation for permanent land loss. The compensation rate shall be RMB 10,000 per mu to be paid to the affected village. The tax on permanent land acquisition will be paid to the local land administration bureau Relocation subsidy for loss of land permanently. The compensation rate shall be RMB 10,000 per mu to be paid the affected household or village collective depending upon land use contract. Cash compensation for loss of standing crops at market prices. The compensation rates for crops shall be RMB 1,000 per mu which is paid to APs. As a priority, provision of land with an area similar to that of the lost land and satisfaction to the AP, OR If the land lost is marginal, the AP have the option of receiving cash compensation at full replacement cost if they wish 	
Temporary Land Occupation (46 households or 130 persons)	Loss of use of land and crops during construction period. 111.47 mu in total for the Project	<p>All users with or without legal papers including AP settled on the land after 29/08/98 (Land Law) as long as they are included in the final AP list or are able to prove their occupation of affected plots before the cut-off date. The cut-off date is the date of conclusion of the inventory survey in project area, i.e. by the end of October 2003</p> <p>All users (including encroachers) shall receive compensation for loss of standing crops only</p>	<ul style="list-style-type: none"> Cash compensation for loss of standing crops at market price. The compensation rates for crops shall be like this: RMB 1,000 per mu for dryland which will be paid to APs directly. Land recovery at the cost of RMB 6,667 per mu will be paid to the respective township land administration office AND Restoration of land to its previous or higher quality when land are returned 	<p>Measures shall be taken to improve land quality in cases of land quality being adversely affected.</p> <p>Mainly keeping the surface rich soil and levelling and modifying the land by the user of the land when they are returned.</p>

4. RESETTLEMENT AND INCOME RESTORATION PLAN

The ultimate objective of the LAR program is to improve the living conditions of the affected households and host communities. As a result, the income restoration plan has been prepared which is as follows:

4.1 Employment of APs by the Project

According to estimates, the Project will provide 2,700 person-years of employment opportunity generation during the Project construction and 320 full time employment opportunity generations during the operational phase of the Project. The affected people will be given first priority to be employed in the Project as workers, safety guards, cleaners and so on, if they wish. On average, they can make about RMB 500 to RMB 800 salary per month. Their income will be increased substantially.

4.2 Land Re-Adjustment and Agricultural Extension

For those who would like to choose land re-adjustment, the local governments will adjust the allocation of land to the APs through re-allocation within the village. As only three (3) households will be affected by the loss of permanent land acquisition, the impact of land acquisition is very small. In addition, the local governments will design and undertake programs to intensify and diversify farm operations for the APs in order to raise the value of production and income per unit of land.

The introduction of economic crops and new technologies will be promoted to farmers in the affected communities. Specific measures being considered include introduction of high-quality and high value economic products, green houses, animal breeding, more efficient application of fertilizers, and so on. Agricultural technicians and cadres will be dispatched to the affected villages and farmer households to provide workshops and hands-on training. The workshops and training will be provided semi-annually. The FCCDUC will cover all of the training costs.

FCCDUC and the local government will pay special attention and support to women, concerning their household needs, particularly women-headed households, and maintain their sources of livelihood and traditional production pattern. Proper employment arrangement will be made to women through the employment generation of the Project to maximize the benefits to women.

5. GRIEVANCE PROCEDURES

FCCDUC will make every effort to reach an agreement with each affected household on the land compensation on the basis of the policy and compensation principles mentioned in Section 4 above. To ensure that the affected people have avenues for redressing their

grievances in the event that some issues occurred related to any aspect of land acquisition, detailed procedures have been established for the Project. The grievance procedures can be as follows:

- i) Affected people can appeal to the village committees;
- ii) If the village committee cannot solve the issue, it is taken to any of the following:
 - FCCDUC
 - Township Government
 - Fuxin State Land and Resources Bureau
- iii) Reply should be made by the above agencies on the appeal within 15 days;
- iv) If AP is not satisfied with response or if the complaint is of a serious nature, then the appeal is taken to the Fuxin State Land and Resources Bureau;
- v) Reply should be made by the Fuxin State Land and Resources Bureau on the appeal within 30 days;
- vi) If the AP is still not satisfied with the response then they have the legal right to submit the appeal to the court.

6. LA BUDGET AND IMPLEMENTATION SCHEDULE

The total costs of land acquisition are estimated to be RMB 1.45 million at the prices of September 2004, of which RMB 126,000 for permanent land acquisition of the CBM surface extraction component and 854,640 for the temporary land occupation of the pipelines, RMB 281,120 for taxes and other costs, and RMB 189,265 for contingency. More than 90% of the budget will be used for the first year of the civil work construction. The costs to of land acquisition are included in the overall budget of the Project.

The permanent land acquisition will be completed one month before the start of the civil work construction. All of the land acquisition activity will be completed within the first three month (January to March, 2005) before the start of the Project construction. The temporary land occupation will be from April 2005 to July 2006.