

**Landscape Approach to Wildlife
Conservation in Northeast China Project**

Resettlement Plan

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1 Introduction to the Project

1.1 Brief Introduction

The Siberian tiger (*Panthera tigris altaica*) is one of the five surviving subspecies of tiger in the world, which only exist in northeast China, far east region of Russia and mountainous forests in northern areas of the Democratic People's Republic of Korea. In recent years, with the continuous population growth in northeast China, local people start to rely more and more on natural resources. This has caused increasing fragmentation of suitable habitats for the Siberian tiger and a shortage of ungulate prey resources. Moreover, with the interference of various human economic activities and the fecundity decline of small species group in isolated habitats, the distribution and population of the Siberian tiger have reduced dramatically. The Siberian tiger has become extremely endangered now.

In order to promote the protection and management of the Siberian tiger and their habitats, the State Forestry Administration and World Bank jointly applied for the GEF "Landscape Approach to Wildlife Conservation in Northeast China Project", and got approval in principle on Feb 29th, 2012. This project is implemented in Northeast China, at the junction area of Heilongjiang Province and Jilin Province, close to the Primorsky Region of Russia and Hamgyong Province of North Korea. It involves Hunchun City, Wangqing County, Dongning County, and Muling County, with a total area of 15337.08 square kilometers. The aggregate amount of the project is 18 million US dollars. The undertaking units of the project include Jilin Forestry Department, Heilongjiang Forestry Department and the General Bureau of Heilongjiang Forest Industry.

Based on the above background, the main aims of this project include:

- To promote the wildlife conservation and restoration in northeast China through improving the ecological environment and friendly management in habitats of the Siberian tiger and its preys,
- To conduct social assessment of construction projects and put forward solutions or mitigation measures for its adverse impacts, so as to meet the requirement of protecting the ecological environment in the project area.

Based on the above background and after consultation between the State Forestry Administration, the World Bank and each undertaking unit, the Planning and Design Institute of Forest Products Industry of the State Forestry Administration will take charge of the social assessment of this project and compile the social assessment report according to related regulations of each unit.

1.2 Project Content and Scale

The project consists of the following subprojects: to mainstream the wildlife protection through coordination and cooperation among various departments; to improve the habitat protection effectiveness in Northeast ecological areas through ecosystem protection methods in priority areas; to reduce human-animal conflicts in the ecological areas (capacity building, law enforcement strengthening, environmental education, and incentive mechanism to promote community participation in protection); and project management. Contents of each subproject are listed in the Table 1-1.

Table 1-1 Table of Project Contents

Project Name	Subproject Name	Project Contents	
Mainstream the wildlife protection through coordination and cooperation among various departments.	Strengthen the enforcement and management of policy framework in priority ecological regions, so as to better protect tiger habitats in forest regions of the General Bureau of Heilongjiang Forest Industry.	Recommend priority regions of tiger habitats conservation	
		Strengthen legal norms of nature reserves	
		Update protection and restoration plans of Jilin province; draw up protection and restoration plans in forest regions of the General Bureau of Heilongjiang Forest Industry	
		Set up the Siberian tiger regional conservation consultative committee	
		Discuss how to make tiger habitats conservation part of economic activities/engineering construction	
		Establish/update policies to reduce human-tiger conflicts(eg: compensation mechanism)	
		Establish China-Russia trans-boundary conservation coordination mechanism	
		Improve the habitat protection effectiveness in Northeast ecological areas through ecosystem protection methods in priority areas.	Improve the management effectiveness of five current reserves
Strengthen the capability construction of 22 conservation stations			
Expand reserve area	Expand the two existing reserves; specify the legal status and implementation arrangements; legislate rules/plans of each region; build 8 new conservation stations		
	Conduct staff training of nature reserve and local forestry bureaus		Conduct conservation management team training in reserves and local forestry bureaus
Reintroduce prey population, improve tiger habitats	Restore vegetation to improve tiger habitats		Restore vegetation, improve habitat quality
	Patrol up mountains and clear up the hunting tools (measurable indicators are demanded)		Conduct mountain patrol activities, take over hunting sets, fight against poaching activities, set up trial reward system
	Reduce human-animal conflicts in the ecological areas (capacity		Strengthen monitoring and law enforcement efforts outside reserves
Improve the capability construction of 14 conservation stations			
Conduct training for staff and leader (include staff leaders of each station) in conservative stations			

Project Name	Subproject Name	Project Contents
building, law enforcement strengthening,	Enhance publicity and education in community	Conduct publicity through television, broadcast, journal, slogan, leaflet to improve people's awareness of the Siberian tiger protection
environmental education, and incentive	Conduct trials on updating dissipation compensation method	Compensate the loss caused by the Siberian tiger and its prey to buffer human tiger conflict
mechanism to promote community participation in protection).	Conduct environmental friendly practice on improving tiger habitats and peasants' livelihood	Conduct tiger-friendly activities to create good habitats for the Siberian tiger meanwhile guarantee workers' livelihood
	Project monitoring evaluation	Monitor project progress and periodical results according to project monitoring objectives
Project management.	Monitor and control tiger and prey population quantity	Conduct surveys on the Siberian tiger and prey population quantity, master their distribution and number, which provides scientific evidence for conservation management and project implementation effectiveness evaluation
	Establish effective coordination mechanism between the country and different provinces	Set up project office in the General Bureau of Heilongjiang Forest Industry, Heilongjiang Forestry Department, Jilin Forestry Department to coordinate the project implementation
	Effective implementation	Put the project into practice through establishing institutions, staff training and effective management

The major engineering construction in this project include construction and expansion of nature reserves, tiger-friendly forest management activities and small civil engineering projects (including construction of protection stations and supplementary feeding stations). All these construction is within state-owned forest farms.

1.3 Identification of Correlated Projects

Correlated projects refer to other projects that have direct links with the functions and benefits of the current project in its preparation and implementation periods.

Based on the investigation, it is confirmed that this project is correlated with the *Notice on Implementing Pilot Work of Completely Stopping Commercial Deforestation* from the State Forestry Administration. This policy, which was promulgated in January 2014 and has been implemented by Heilongjiang Province since April 1st, 2014, involves nature reserves in this project,

1.4 Affected Areas of the Project

1.4.1 Positive Impacts of the Project

The implementation of the project will provide a better living environment for the wild Siberian tiger. Detailed improvement lies in extending separated distribution areas of the Siberian tiger into stretches; providing natural and complete food chains for the

Siberian tiger through the construction of supplementary feeding stations; enhancing the publicity of the Siberian tiger and its protection in the project; enhancing the publicity of the national policies on forestry protection.

1.4.2 Impacts of the Project on Livelihood

The project does not involve land expropriation or demolition. The construction of protection stations, supplementary feeding stations and transitional field of captive breeding, house construction of Wangqing Reserve Administration and construction of the Siberian Tiger Remote Monitoring Station in Hunchun Reserve are all within state-owned forest farms, without involving expropriation of any state-owned forest land or peasants' land. Thus, this project does not involve any issue concerning land expropriation or demolition. Some state-owned forest farms would be temporarily occupied in this project. However, the property right is held by the state. So compensation issues will not be involved.

Impacts of the project on related forest farms and the livelihood of forest farm staffs mainly include: (1) income of 25 state-owned forest farms will be affected due to the prohibition of logging; (2) 18 state-owned forest farms will be affected due to the decrease of sawdust after the prohibition of logging; (3) 4 state-owned forest farms will be affected in terms of cowboying; (4) 9 state-owned forest farms will be affected in terms of under-forest collecting.

Impacts of the project on the livelihood of peasants living in peripheral areas are as follows: (1) The establishment of Niaoqingshan Nature Reserve (expanded) in Dongning County, Heilongjiang Province, involves the resumption of state-owned forest farms which once were leased to nearby peasants. Livelihood of peasants from 2 communities will be affected. (2) The environmental improvement of these reserves will increase the rate of animal-caused accidents. Crops and livestock might be affected to some extent, involving 14 rural communities. (3) Due to the correlative project—*Notice on Implementing Pilot Work of Completely Stopping Commercial Deforestation* launched by the State Forestry Administration in January 2014, the surplus material from logging will be decreased and the cost of raw material to plant agaric will increase, which will affect 13 villages. (4) The scope where peasants can collect under-forest products such as mushrooms in state-owned farms will be restricted, which involves 14 villages.

Table 1-3 Table of Construction Contents Involved in the Project

Project Category	Project Name	Construction Unit	Location	Construction Content and Scale	Involve Land Expropriation	Involve Demolition	Decrease Livelihood Area	Remarks
Construction of Protection Stations	Construction of protection stations	Project Executive Office of the General Bureau of Heilongjiang Forest Industry.	Muling City	To maintain and renovate 13 conservation stations, with a total area of 1,615 m ²	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Project Executive Office of the General Bureau of Heilongjiang Forest Industry	Dongning County	To maintain and renovate 7 conservation stations, with a total area of 485 m ²	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Project Executive Office of Heilongjiang Province	Dongning County	To build 3 new conservation stations with a total area of 320 m ² ; maintain and renovate 2 conservation stations with a total area of 360 m ²	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Project Executive Office of Jilin Province	Wangqing County	To maintain and renovate 15 conservation stations	X	X	√	Within state-owned forest farm, no

Project Category	Project Name	Construction Unit	Location	Construction Content and Scale	Involve Land Expropriation	Involve Demolition	Decrease Livelihood Area	Remarks
				with a total area of 4,030 m ²				involvement of land expropriation or demolition
		Project Executive Office of Jilin Province	Hunchun City	To maintain and renovate 10 conservation stations with a total area of 3,874 m ²	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Subtotal		To build 3 new conservation stations with a total area of 320 m ² ; maintain and renovate 47 conservation stations with a total area of 10,364 m ²	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
	House Construction Project in the Wangqing Reserve Administration	Project Executive Office of Jilin Province	Wangqing County	1,350 m ²	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition

Project Category	Project Name	Construction Unit	Location	Construction Content and Scale	Involve Land Expropriation	Involve Demolition	Decrease Livelihood Area	Remarks
	n							
	Construction of the Siberian tiger Remote Monitoring Station in Hunchun Reserve	Project Executive Office of Jilin Province	Hunchun City	700 m ²	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
Construction or Expansion of Nature Reserves	Expansion Project of Niaoqingshan Nature reserve	Project Executive Office of Heilongjiang Province	Dongning County	17,856 hectares	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition; involving resumption of state-owned forest lands that were leased to villagers
	Construction of Wangqing	Project Executive Office of Jilin Province	Wangqing County	50,055 hectares	X	X	√	Within state-owned forest farm, no

Project Category	Project Name	Construction Unit	Location	Construction Content and Scale	Involve Land Expropriation	Involve Demolition	Decrease Livelihood Area	Remarks
	Tianqiaoling Nature protection area							involvement of land expropriation or demolition
	Construction Project of Hunchun Lanjia protected areas	Project Executive Office of Jilin Province	Hunchun City	19,800 hectares	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
Tiger-friendly Forest Management Activities	Forest Tending Project	Project Executive Office of the General Bureau of Heilongjiang Forest Industry	Muling County	3,260 hectares	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Project Executive Office of the General Bureau of Heilongjiang Forest Industry	Dongning County	6,711 hectares	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition

Project Category	Project Name	Construction Unit	Location	Construction Content and Scale	Involve Land Expropriation	Involve Demolition	Decrease Livelihood Area	Remarks
		Project Executive Office of Heilongjiang Province	Dongning County	3,000 hectares	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Project Executive Office of Jilin Province	Wangqing County	4,132 hectares	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Subtotal		17,103 hectares	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
	Vegetation Restoration (Afforestation in Glade)	Project Executive Office of Heilongjiang Province	Dongning County	500 hectares	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition

Project Category	Project Name	Construction Unit	Location	Construction Content and Scale	Involve Land Expropriation	Involve Demolition	Decrease Livelihood Area	Remarks
Construction Project of Supplementary Feeding Stations	Construction Project of Supplementary Feeding Stations	Project Executive Office of the General Bureau of Heilongjiang Forest Industry	Muling County	To build 6 new supplementary feeding stations	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Project Executive Office of the General Bureau of Heilongjiang Forest Industry	Dongning County	To build 6 new supplementary feeding stations	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Project Executive Office of Heilongjiang Province	Dongning County	To build 5 new supplementary feeding stations	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Project Executive Office of Jilin Province	Hunchun City	To build 10 new supplementary feeding stations	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition

Project Category	Project Name	Construction Unit	Location	Construction Content and Scale	Involve Land Expropriation	Involve Demolition	Decrease Livelihood Area	Remarks
		Project Executive Office of Jilin Province	Wangqing County	To build 1 transitional enclosure	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition
		Subtotal		To build 27 new supplementary feeding stations, captivate one transitional field	X	X	√	Within state-owned forest farm, no involvement of land expropriation or demolition

1.5 Total Investment and Implementation Plan of the Project

The total investment in this project is 18 million US dollars, including 3 million US dollars from the World Bank and 15 million US dollars of counterpart fund. Except for the national expenses on resettlement of forest farm staffs, the estimated expense on resettlement is about 3, 719, 710 RMB.

2 Impacts of the Project

Based on field investigation, main impacts of the project include: impact of the reserve construction on deforestation of forest farms, production of villagers, collection of under-forest products, pasturing, and agaric planting, etc.

2.1 Definition of the Project Impacts

The physical investigation of the project is conducted within the existing nature reserves, newly-built nature reserves, expanded nature reserves which involves construction of protection stations and forest tending, and peripheral rural communities defined by the project planning and design units.

Contents of the project mainly include new construction and expansion of nature reserves, tiger-friendly forest management activities and small civil engineering projects (including protection stations and supplementary feeding stations). The new construction and expansion of nature reserves will have impacts on the production and livelihood of surrounding forest farms and villages. The construction of protection stations and supplementary feeding stations in original reserves will increase the activity scope of wild animals, which will also affect the production and livelihood of surrounding forest farms and villages.

Due to the difference of functional division of nature reserves, the project may have different influences in different functional zones. Based on the overall planning of nature reserves, the definition of each zone and regulations about protection and operation activities are as follows:

The core area: it's the key protection area of nature reserves. Any forms of logging, hunting or tourism is not allowed. It's only used for observation, research and resource monitoring. Nobody shall be allowed to enter the core area without approval to keep the ecology system not disturbed and make it renovate and multiply in natural condition.

The buffer zone: it's the buffer region of the core area. First, it's to mitigate the influences and disturbance of the external world to the core area. Secondly, it's allowed to conduct some scientific research, experiments, educational practice and specimen collection on the condition that the community environment is not destroyed. Tourism, production and trading activities, are prohibited in the buffer area. Thirdly, the buffer zone shall be recovered to the core area by improving the living environment of wildlife through vegetation recovery.

The experimental zone: on the condition that the original vegetation and rare wildlife resources are not destroyed, the nature resources in the experimental zone can be utilized properly to explore the effective ways of the sustainable development of nature reserves. Scientific experiments, educational training, ecological tourism and different forms of trading activities

can be conducted and some production, living and management projects can be implemented appropriately.

Definitions of the project impacts are as follows:

Permanent land occupation: forest lands which are within the project area and need to be occupied permanently.

(2) Temporary land occupation: forest lands which are within the project area and need to be excavated temporarily for the construction of the project.

(3) Prohibition of deforestation: to prohibit logging of commercial forests.

(4) Prohibition on under-forest business activities: to prohibit production and operation activities within the core areas and buffer areas of the nature reserves.

(5) Farmland resumption of forest farms: to resume lands that once were leased after the forest lands are converted into nature reserves, to stop production and operation activities and return farmland to forestry.

(6) Affected land attachments: land attachments within the project area, primarily the original protection stations.

(7) Affected public facilities: public facilities and service facilities within the project area.

(8) Affected households: households whose forest lands or farmlands are within the above-mentioned nature reserves.

(9) Affected communities: communities whose forest lands or farmlands are within the above-mentioned nature reserves.

(10) Affected state-owned forest farm staffs: state-owned forest farm staffs who will be included and have been included in nature reserves.

Vulnerable groups: social groups that are susceptible to harms and lack abilities to tackle social changes and in unfavorable conditions. These vulnerable groups mainly include lonely elder people, single-mother families, orphans, households living by the minimum living allowance and handicapped patients.

This project does not involve temporary land occupation or any affected enterprises and public institutions.

2.2 Investigation about the Impacts of the Project

Investigation for the resettlement includes two parts: one is the impact scope of the reserve construction in the project, the other is the social and economic investigation of individuals and organizations that may be affected by the reserve construction.

The contents of resettlement investigation are divided into two parts:

(1) Literature Investigation

a. Social and economic statistics of Dongning County and Muling City of Heilongjiang Province, Hunchun City and Wangqing County of Jilin Province, and other regions involved in the project.

b. National and local regulations of Heilongjiang, Jilin and other areas related to reserve construction.

(2) Investigation of Social and Economic Background

a. Basic condition of affected and fragile families in the investigated area;

b. Public opinion and recommendation;

c. Basic condition of affected forest farms, nature reserves and villages within the investigated area: population, labor, industrial structure, farmlands, etc. 25 forest farms are investigated, including 15 farms in Jilin project areas and 10 farms in Heilongjiang project areas. 14 villages are investigated, 6 in Heilongjiang project areas and 8 in Jilin project areas. 300 forest farm staffs are involved in the investigation, 120 in Heilongjiang project areas and 180 in Jilin project areas, accounting for 40% and 60% of the total respectively.

d. Basic conditions of affected nature reserves and of peripheral villages within the investigated area: population, labor, industrial structure, farmlands, etc. The original social assessment investigation, the first and second public investigations serve as statistical evidence of the sampling result (see Table 2-1): 218 households of peasants and forest farm staffs were selected randomly in Wangqing County of Jilin, accounting for 35.3% of the total investigated households; 143 households of peasants and forest farm staffs were selected randomly in Hunchun City of Jilin, 23.1% of all the total; 182 households of peasants and forest farm staffs were selected randomly in Dongning County, 29.4% of all the total; and 75 households of peasants and forest farm staffs were selected randomly in Muling, 12.1% of all the total.

Table 2-1. Sampling Situation of Investigated Households

City/County	Number of Investigated Households	Percent
Wangqing County	218	35.3%
Hunchun City	143	23.1%
Dongning county	182	29.4%
Muling city	75	12.1%

2.3 General Information of the Project Impacts

The impacts of the project on state-owned forest farm staffs and these within the nature reserves involve 25 forest farms in total (See Table 2-2). Impacts of the project on rural households involve 14 villages in total (See Table 2-3).

Table 2-2: Impact Status of the Project on Forest Farm Staffs

project	Reserve Name	Forest Farm	Prohibition of Logging			Impacts on Agaric Planting Affected by Decrease of Sawdust			Impacts on Under-forest Collecting			Impacts on Pastureing		
			Affected area (mu)	Affected households	Affected population	Affected area (mu)	Affected households	Affected population	income from collecting	Affected households	Affected population	Number of livestock	Affected households	Affected population
Construction of new nature reserves	Jilin	Shanghe	220335	18	54	4	18	54	50000	18	54	200	4	12
		Nenhe	251685	30	105	22	30	105	100000	30	105	70	1	3
	Tianqiaoling	Huapi	118245	11	36	12	11	36	110000	11	36			
	Siberian Tiger Reserve	Xiangyan	220335	52	157	52	52	157	260000	52	157			
		Xidahe	237660	15	45	14	15	45	70000	15	45			
	Jilin Hunchun Lanjia protected areas	Chunhua	690000	60	160	180	60	160						
Expansion of nature	Heilongjiang Doning	Chaoyang gou	261540	105	315	10	105	315						

project	Reserve Name	Forest Farm	Prohibition of Logging			Impacts on Agaric Planting Affected by Decrease of Sawdust			Impacts on Under-forest Collecting			Impacts on Pastureing		
			Affected area (mu)	Affected households	Affected population	Affected area (mu)	Affected households	Affected population	income from collecting	Affected households	Affected population	Number of livestock	Affected households	Affected population
reserves	Niaoqingshan Reserve													
Construction of protection stations and forest tending	Heilongjiang Laoyeling Siberian Tiger Reserve	Nuanquanhe	165240	32	108	324	32	108						
		Sanchahe	167985	40	112	1080	40	112						
		Sanjielazi	26100	50	156	756	50	156						
		Yuanshan	334800	38	114	1000	38	114						
		Zhongguli	252720	35	106	1378	35	106						
	Heilongjiang Muling Taxus Cuspidata	Gonghe	123900	28	105									
		Heping	126495	35	110	12	28	105						
		Zhongzhu	126915	20	58	360	20	58						

project	Reserve Name	Forest Farm	Prohibition of Logging			Impacts on Agaric Planting Affected by Decrease of Sawdust			Impacts on Under-forest Collecting			Impacts on Pastureing		
			Affected area (mu)	Affected households	Affected population	Affected area (mu)	Affected households	Affected population	income from collecting	Affected households	Affected population	Number of livestock	Affected households	Affected population
	Nature reserve	agou												
	Jilin Wangqing National Reserve	Duhuangzi	337000	124	170	16	124	170						
		Dahuanggou	277245	65	214	10	65	214	170000	65	214			
		Lanjia	164040	30	86				130000	30	86			
		Xinancha	354315	80	251				65000	80	251	40	1	3
		Jincang	507600	424	1202	14	424	1202	655000	424	1202	200	5	15
	Jilin Hunchun National Reserve	Chuanhua	690000	60	160									
		Qinglongtai	28968	35	110	240	35	110						
		Sandaogou	45623	74	220									

project	Reserve Name	Forest Farm	Prohibition of Logging			Impacts on Agaric Planting Affected by Decrease of Sawdust			Impacts on Under-forest Collecting			Impacts on Pastureing		
			Affected area (mu)	Affected households	Affected population	Affected area (mu)	Affected households	Affected population	income from collecting	Affected households	Affected population	Number of livestock	Affected households	Affected population
		Yangpao	15869	37	120									
		Banshi	14928	36	108									
		Jingxin	26032	41	122									
In total			5095575	1515	4344	5484	1182	3327	1610000	725	2150	510	11	33

Table 2-3: Impact Status of the Project on Nearby Peasants

project	Reserve Name	Town	Village	Animal-Caused Accidents			Impacts on Pasturing			Impacts on Under-Forest Collecting			Impacts on Agaric Planting Affected by Decrease of Sawdust			Impacts of Farmland Resumption of Forest Farms		
				Affected area (mu)	Affected households	Affected population	Number of livestock	Affected households	Affected population	income from collecting	Affected households	Affected population	Affected area (mu)	Affected households	Affected population	Affected area (mu)	Affected households	Affected population
new construction and expansion of nature reserves	Jilin Hunchun Lanjia protected areas	Chunhua	Lanjia	10000	50	149	18	5	14	15000	30	85	28	14	40			
	Heilongjiang Donging Niaoqingshan Reserve	Sanchakou	Qianying	3000	60	252	20	4	12	82000	41	126	93	31	95			
Chaoyanggou			2900	78	289	8	2	6	80000	40	123	51	17	52	151.91	42	120	
Miaoling			2800	120	480	4	1	4	74000	37	144	78	26	101	271.1	52	160	
Daduchu		Hongixng	1040	85	245	8	2	6	84000	42	134	168	56	178				

		an	Liangzichuan	2400	115	315				80000	40	77	120	40	77	24.5	28	74	
Construction of protection stations and forest tending	Jilin Hunchun National Reserve	Chunhua	Xiacaomao	19575	76	268	60	8	28	60000	30	106	9	6	21				
			Shangcaomao	14040	57	169	40	5	15	80000	40	119	15	10	30				
			Fenshuiling	21870	49	150	33	4	12	60000	30	92	7.5	5	15				
	Yangpao	Hadamen	Guandaogou	6318	91	222	30	3	7	40000	20	49	15	10	24				
			Yantonglazi	4700	38	96	10	2	5	114000	19	49	0	0	0				
			Songlin	39960	226	639	50	8	23	80000	20	57	15	10	28				
				Dongala	12500	286	849	50	8	24	25000	25	76	22.5	15	46			
	Wangqing National Reserve	Fuxing	Duhuangzi	1110	131	436	80	25	51	60000	30	62	20	10	21				
In total				142213	1462	4559	411	77	207	934000	444	1299	642	250	728	447.51	122	354	

2.4 Impacts of the Prohibition of Deforestation on State-Owned Farms

The *Notice on Implementing Pilot Work of Completely Stopping Commercial Deforestation* released by the State Forestry Administration has been promulgated in January 2014. After the state-owned forest farms are transformed to reserves, deforestation will be stopped completely. Thus related staffs will have to change their jobs. Complete deforestation has begun in Heilongjiang province since April 2014, and commercial deforestation will be banned in Jilin from April 2015.

The prohibition of deforestation cover an area of 5095575 mu, involving 25 forest farms, 1515 households and 4344 forest farm staffs. See Table 2-4.

Table 2-4 Impacts of Logging Prohibition on Forest Farm and Staffs

Project	Reserve Name	Forest Farm	Affected area (mu)	Affected households	Affected population
Construction of new nature reserves	Jilin Tianqiaoling Siberian Tiger Reserve	Shanghe	220335	18	54
		Nenhe	251685	30	105
		Huapi	118245	11	36
		Xiangyang	220335	52	157
		Xidahe	237660	15	45
	Jilin Hunchun Lanjia protected areas	Chunhua	690000	60	160
Expansion of nature reserves	Heilongjiang Doning Niaoqingshan Reserve	Chaoyanggou	261540	105	315
Construction of protection stations and forest tending	Heilongjiang Laoyeling Siberian Tiger Reserve	Nuanquanhe	165240	32	108
		Sanchahe	167985	40	112
		Sanjielazi	26100	50	156
		Yuanshan	334800	38	114
		Zhongguli	252720	35	106
	Heilongjiang Muling Taxus Cuspidata Nature reserve	Gonghe	123900	28	105
		Heping	126495	35	110
		Zhongzhuagu	126915	20	58
	Jilin Wangqing National Reserve	Duhuangzi	337000	124	170
		Dahuanggou	277245	65	214

		Lanjia	164040	30	86
		Xinancha	354315	80	251
		Jincang	507600	424	1202
	Jilin Hunchun Siberian Tiger National Reserve	Chuanhua	690000	60	160
		Qinglongtai	28968	35	110
		Sandaogou	45623	74	220
		Yangpao	15869	37	120
		Banshi	14928	36	108
		Jingxin	26032	41	122
	In total			5095575	1515

2.5 Impacts on Agaric Planting of State-Owned Forest Farms

After the prohibition of logging is implemented in nature reserves, the output of surplus materials from logging will be affected, which will thus affect the sources of raw material to plant agaric. 18 forest farms, covering an area of 5484 mu, are involved, including 1182 forest farm staffs, 3327 people in total.

Table 2-5 Impacts on Agaric Planting of State-Owned Forest Farms

Project	Reserve Name	Forest Farm Involved	Affected area (mu)	Affected households	Affected population
Construction of new nature reserves	Jilin Tianqiaoling Siberian Tiger Reserve	Shanghe	4	18	54
		Nenhe	22	30	105
		Huapi	12	11	36
		Xiangyang	52	52	157
		Xidahe	14	15	45
	Jilin Hunchun Lanjia Protected Areas	Chunhua	180	60	160
Expansion of nature reserves	Heilongjiang Doning Niaoqingshan Reserve	Chaoyanggou	10	105	315
Construction of protection	Heilongjiang Laoyeling Siberian Tiger Reserve	Nuanquanhe	324	32	108
		Sanchahe	1080	40	112
		Sanjielazi	756	50	156

stations and forest tending		Yuanshan	1000	38	114
		Zhongguliu	1378	35	106
	Heilongjiang Muling Taxus Cuspidata Nature reserve	Gonghe	12	28	105
		Zhongzhuagou	360	20	58
	Jilin Wangqing National Reserve	Duhuangzi	16	124	170
		Dahuanggou	10	65	214
		Jincang	14	424	1202
	Jilin Hunchun Siberian Tiger National Reserve	Qinglongtai	240	35	110
	In total			5845	1182

2.6 Impacts on Cow Raising of State-Owned Forest Farms

After the construction of newly-built and expanded nature reserves is strengthened, the activity scope of tigers and leopards will increase, and thus the possibility of cows being eaten by tigers and leopards will increase. This will affect the pasturing area and monitoring efforts. 4 forest farms in 2 nature reserves are involved, including 510 cows, 11 households and 33 people.

Table 2-6 Impacts on Cow Raising in State-Owned Forest Farms

Project	Reserve Name	Involved Forest Farm	Number of livestock	Affected households	Affected population
Construction of new nature reserves	Jilin Tianqiaoling Siberian Tiger Reserve	Shanghe	200	4	12
		Nenhe	70	1	3
Construction of protection stations and forest tending	Jilin Wangqing National Reserve	Xinancha	40	1	3
		Jincang	200	5	15
In total			500	11	33

2.7 Impacts on Under-Forest Collecting in State-Owned Forest Farms

After the construction of newly-built and expanded nature reserves is strengthened, the activity scope of tigers and leopards and the possibility of cows being eaten by tigers and leopards will increase. And under-forest activities in the core area and buffer zone of state-owned farms, such as picking

mushrooms and pine cone, will be restricted. This involves 9 forest farms in 2 nature reserves, including 725 households and 2150 people. The income from picking these under-forest products is about 1,610,000 yuan, which is a large part of the income of forest farms and staffs.

Table 2-7 Impacts on Collecting Under-Forest Products in State-Owned Forest Farms

Project	Reserve Name	Forest Farm Involved	Affected area (mu)	Affected households	Affected population
Construction of new nature reserves	Jilin Tianqiaoling Siberian Tiger Reserve	Shanghe	50000	18	54
		Nenhe	100000	30	105
		Huapi	110000	11	36
		Xiangyang	260000	52	157
		Xidahe	70000	15	45
Construction of protection stations and forest tending	Jilin Wangqing National Reserve	Dahuanggou	170000	65	214
		Lanjia	130000	30	86
		Xinancha	65000	80	251
		Jincang	655000	424	1202
In total			1610000	725	2150

2.8 Impacts of Animal-Caused Accidents on Peasants' Planting

The construction and expansion of nature reserves will increase the activity scope of wildlife including the wild boar. The possible areas where wild animals would destroy crops cover an area of 142213 mu, involving 13 villages, 1462 households and 4559 people in total.

Table 2-8: Impacts of Animal-Caused Accidents on Peasants' Crops

Project	Reserve Name	Town	Village	Animal-Caused Accidents		
				Affected area (mu)	Affected households	Affected population
New construction and expansion of nature	Jilin Hunchun Lanjia Protected Areas	Chunhua	Lanjia	10000	50	149
	Heilongjiang	Sanchakou	Qianying	3000	60	252

reserves	Doning Niaoqingshan Reserve		Chaoyanggou	2900	78	289
			Miaoling	2800	120	480
	Daduchuan	Hongixng	1040	85	245	
		Liangzichuan	2400	115	315	
Construction of protection stations and forest tending	Jilin Hunchun National Reserve	Chunhua	Xiacaomao	19575	76	268
			Shangcaomao	14040	57	169
			Fenshuiling	21870	49	150
		Hadamen	Guandaogou	6318	91	222
		Yangpao	Yantonglazi	4700	38	96
			Songlin	39960	226	639
	Dongala		12500	286	849	
	Wangqing National Reserve	Fuxing	Duhuangzi	1110	131	436
In total				142213	1462	4559

2.9 Impacts of land resumption of forest farms

Though the prohibition of pasturing is conducted in state-owned forest farms, pasturing can't be absolutely avoided in state-owned forest farms because of the difficulties of monitoring and management. After the project, the activity scope of tigers and leopards will increase, which will affect the pasturing area. 14 villages in 4 nature reserves will be involved, including about 411 livestock, 77 households and 207 people.

Table 2-9: Impacts on Peasants' Pasturing

project	Reserve Name	Town	Village	Impacts on Pasturing		
				Number of livestock	Affected households	Affected population
new construction and expansion of nature reserves	Jilin Hunchun Lanjia Protected Areas	Chunhua	Lanjia	18	5	14
			Qianying	20	4	12
	Heilongjiang Doning	Sanchakou	Chaoyanggo	8	2	6

	Niaoqingshan Reserve		u			
			Miaoling	4	1	4
		Daduchuan	Hongixng	8	2	6
			Liangzichuan			
Construction of protection stations and forest tending	Jilin Hunchun National Reserve	Chunhua	Xiacaomao	60	8	28
			Shangcaomao	40	5	15
			Fenshuiling	33	4	12
		Yangpao	Guandaogou	30	3	7
			Yantonglazi	10	2	5
			Songlin	50	8	23
	Wangqing National Reserve	Fuxing	Dongala	50	8	24
			Duhuangzi	80	25	51
In total				411	77	207

2.10 Impacts on Peasants' Collecting Under-Forest Products in State-Owned Forest Farms

Before the project, villagers nearby would collect under-forest products in state-owned forest farms. After the construction of newly-built and expanded nature reserves is strengthened, it will be not allowed for them to do that. And this will affect their income. Meanwhile, as some villages reflect, the appearance of tigers and leopards will increase. This will increase risks of collecting under-forest products. 14 villages will be involved, including 444 households and 1299 people in total. The total income from collecting under-forest products is 934000 yuan.

Table 2-10: Impacts on Peasants' Collecting Under-Forest Products in State-Owned Forest Farms

Project	Reserve Name	Town	Village	Impacts on Under-Forest Collecting		
				income from collecting	Affected households	Affected population
New	Jilin Hunchun Lanjia	Chunhua	Lanjia	15000	30	85

construction and expansion of nature reserves	Protected Areas					
	Heilongjiang Doning Niaoqingshan Reserve	Sanchakou	Qianying	82000	41	126
			Chaoyanggou	80000	40	123
			Miaoling	74000	37	144
		Daduchuan	Hongxng	84000	42	134
Liangzichuan			80000	40	77	
Construction of protection stations and forest tending	Jilin Hunchun National Reserve	Chunhua	Xiacaomao	60000	30	106
			Shangcaomao	80000	40	119
			Fenshuiling	60000	30	92
		Hadamen	Guandaogou	40000	20	49
		Yangpao	Yantonglazi	114000	19	49
			Songlin	80000	20	57
			Dongala	25000	25	76
	Wangqing National Reserve	Fuxing	Duhuangzi	60000	30	62
In total				934000	444	1299

2.11 Impacts on Agaric Planting in Nearby Communities

After the prohibition of logging is implemented in nature reserves, the output of surplus materials from logging will be affected, which will thus affect the sources of raw material to plant agaric. 13 villages are involved, coving an area of 5484 mu. 250 households, 728 people will be affected.

Table 2-11 Impacts on Peasants' Agaric Planting

Project	Reserve Name	Town	Village	Impacts on Agaric Planting Affected by Decrease of Sawdust		
				Affecte d area (mu)	Affected househol ds	Affected population
New construction and expansion of nature	Jilin Hunchun Lanjia Protected Areas	Chunhua	Lanjia	28	14	40
	Heilongjiang	Sancha	Qianying	93	31	95

reserves	Doning Niaoqingshan Reserve	kou	Chaoyanggou	51	17	52
			Miaoling	78	26	101
	Daduchuan	Hadam	Hongixng	168	56	178
			Liangzichuan	120	40	77
Construction of protection stations and forest tending	Jilin Hunchun National Reserve	Chunhua	Xiacaomao	9	6	21
			Shangcaomao	15	10	30
			Fenshuiling	7.5	5	15
		Hadamen	Guandaogou	15	10	24
		Yangpa	Yantonglazi	0	0	0
			Songlin	15	10	28
	Dongala		22.5	15	46	
	Wangqing National Reserve	Fuxing	Duhuangzi	20	10	21
	In total				642	250

2.12 Impacts of land resumption of forest farms

After the state-owned forest farms in Dongning County, Heilongjiang Province, are transformed into nature reserves, farmlands of the forest farms which are leased to rural households will be resumed. The current rent is 80 yuan/mu on a yearly base. The peasants mainly cultivate crops such as corns, soybeans, etc. After these farmlands are upgraded into the nature reserve, the state-owned Chaoyanggou Forest Farm, which is located in Niaoqingshan Nature Reserve, Dongning County, Heilongjiang Province, will resume 447.51 mu of farmlands, involving 2 towns, 3 villages, 122 households and 354 people. See Table 2-12.

Table 2-12: Impacts of Reserve Construction on Peasants' Lease of State-Owned Forest Farms

Involved Reserve	Involved Town	Village Name	Area of Leased Farmland (mu)	Involved Household	Involved People
Heilongjiang Dongnin Niaoqingshan Nature Reserve	Sanchakou Town	Chaoyanggou	151.91	42	120
		Miaoling	271.1	52	160
	Daduchuan Town	Liangzichuan	24.5	28	74
In total			447.51	122	354

2.13 Impacts of Temporary Land Occupation

The project involves maintenance, renovation and new construction of protection stations within newly-built, existing and expanded nature reserves. Temporary earth excavation and piling of construction materials and garbage will be involved during the maintenance and construction of new protection station. While the lands that will be occupied are owned by the current owner units. Thus no impact of temporary land occupation will be generated.



Figure 2-1: Example of Newly-build Protection Station

2.14 Affected Vulnerable Groups

2.14.1 Identification of the Affected Vulnerable Groups

Vulnerable groups mean social groups that are susceptible to harms, stay in unfavorable conditions and lack the ability to tackle social changes. These vulnerable groups mainly include:

- Elderly person of no family. Elder single people aged above 65 and with no legal obligated supporter.
- Single-parent families. Families in which the owner is single and has under-aged children.
- Orphans. Children under 16 and having no parents.
- Poverty-stricken families.
- Handicapped people. People who has mental or physical deficiencies or disadvantages in their body structure, lack or lose certain organ or function, and people who partly or fully lack the ability to perform some activities in the normal way.

- Households with other difficulties.

The definition of vulnerable groups is based on requirements of related policies and regulations as well as field investigation.

2.14.2 Affected Households of Vulnerable Groups

There are some vulnerable households in the newly-built or expanded reserves and nearby villages of the project area. Among them, there are 17 household of forest farm workers, 40 people in total; and 8 households of peasants, 21 people in total. The detailed information is shown in Table 2-13.

Table 2-13: List and Description of Vulnerable Group

Name of reserve	Name of forest farm or village	Name of householder	Number of family members	Description
Jilin Tianqiaoling Siberian Tiger Reserve	Xidahe Forest Farm	Qi Chengquan	3	No salary income; in poor health
		Liu Xulong	2	No salary income; in poor health condition; divorced
		Lu Xueyi	3	No salary income; in poor health condition
		Li Yongjie	3	No salary income; physically disabled
		Zhao Xiuju	3	No salary income; physically disabled
	Shanghe Forest Farm	Guan Heping	3	Low-income
		Yang Haigang	4	Low-income
		Chi Fenglin	3	Low-income
	Huapi Forest Farm	Zhang Guoli	2	Low-income
		Wang Tailai	2	Low-income
		Song Yueyong	3	Low-income
		Sun Xiangbao	1	Physically disabled
Wanqing Nature Reserve	Dahuanggou Forest Farm	Zhang Jianmin	4	With old people and the couple in bad health condition; with children at school
	Jincang Forest Farm	Shi Xiuyun	1	elderly person of no family
		Sun Xigui	1	household enjoying the minimum living guarantee
		Mao Shulian	1	elderly person of no family
		Lv Shulan	1	Physically disabled
Subtotal			40	
Wanqi	Duhuangzi	Lin Zhaojun	2	The householder has cancer.

ng Nature Reserv e	Village	Zhao Benfa	2	The householder has cancer and high blood pressure.
		Jia Juguo	1	The householder has cirrhosis.
		Du Jinxing	3	household enjoying the minimum living guarantee
		Zhou Wen	2	The householder has cancer; impoverished household.
		Xu Hongcai	4	The householder has cancer.
		Xiao Ying	2	The householder has cerebral thrombosis.
	Dahuanggou Village	Li Zhigang	5	in poor health condition; with children at school
Subtotal			21	
In total			61	

3 Survey Result of Social and Economic Conditions in the Project Area

To understand the project's influence on local communities, the survey team investigate local social and economic conditions.

3.1 The general social and economic conditions of influenced areas

Impacts of this project involves all nature reserves. The analysis of social and economic conditions of project areas is as follows:

Influence on forest farm workers:

- After the construction and management of newly-built and expanded nature reserves is strengthened, prohibition policy of logging will be implemented in all state-owned forest farms within these reserves. After the prohibition policy, 60% of the income of forest farms from logging will be affected.
- For factories that produce black agaric fungi bags, the decrease of local output of saw dust will have direct influences on the raw material of fungi bags. Local producers estimate that the cost of saw dust would increase 20%; if there are no alternative materials, the cost would increase 0.1 yuan per bag and about 345 yuan per mu.
- Compared with the current condition, it's estimated that the loss of under-forest economy in state-owned forest farms is around 10% to 20%.
- 60% of the income from planting in Heilongjiang Dongning Niaoqingshan Nature Reserve, Jilin Tianqiaoling Siberian Tiger Nature Reserve (newly-built) and Muling Northeast Taxus Chinensis Nature Reserve would be lost.
- 11 forest farm workers are engaged in grazing in Shanghe Forest Farm of Jilin Tianqiaoling Siberian Tiger Nature Reserve (newly-built), Jingcang Forest Farm and Xinancha Forest Farm of Jilin Wangqing National Nature Reserve, which is a very small group that would be influenced.
- No negative impact on ecotourism is involved.

Influence on peasants near the reserves.

- 250 households who plant agaric will be affected due to the increased price of sawdust. The profit will decrease by about 5% per mu.
- 450 households of peasants in Jilin Hunchun Siberian Tiger National Nature Reserve, Jilin Lanjia Nature Reserve, Niaoqingshan Nature Reserve (planned to expand) will lose 20% of the income from under-forest economy.
- After the construction and management of newly-built and expanded nature reserves is strengthened, the possibility of animal-caused accidents would increase. Thus peasant's pasturing will be affected. About 1/3 of peasants could not find dead bodies of their cows which were eaten by tigers and thus could not get compensations from the government. If the cow pasturing was changed to captive breeding, the cost of breeding each cow will increase 2000 yuan.
- The income from local ecotourism will further increase as these nature reserves will develop better and better.
- Farm lands of Dongning Niaoqingshan Nature Reserve were released to peasants year by year. After the contract become due, the farmlands will be taken back. Thus it will have no impacts on peasants.
- There will be a higher rate of animal-caused accidents in the future. Nearby peasants would face higher risks of production and personal security.

3.2 Economic Development of Surveyed Areas

3.2.1 The economic development of Hunchun City.

In 2014, the gross domestic product reached 14.76 billion yuan, with a year-on-year growth of 7.5%; the total output value of industrial enterprises with annual revenue of 20 million yuan or more from their main business operations reached 31.8 billion yuan, with a year-on-year growth of 15%; total value form foreign trade reached 1.54 billion dollars, with a year-on-year growth of 10%; the general budgetary financial revenue in the whole area reached 2.16 billion yuan, with a year-on-year growth of 22%; the local financial revenue reached 1.66 billion yuan, with a year-on-year growth of 24%; financial expenditure reached 3.8 billion, with a year-on-year growth of 15%; retail sales reached 4.88 billion yuan, with a year-on-year growth of 12%; the per capita disposable income of urban residents reached 21291 yuan, with a year-on year growth of 12%; the per capita net income of rural residents reached 11258 yuan, with a year-on-year growth of 15%. In 2014, HunChun City won the title of Northeast Asia International Timber Trading Center. The number of leading agricultural enterprises reached 47, and there are 132 professionally managed farms. The rate of soil scale management reached 33%. The total output of grain reached 152000 tons; the total value of agricultural output reached 1.13 billion yuan, with a year-on-year growth of 6.6%. The Agriculture Financial Service Station was set up as the first of its kind in the region. The regional adjustment of the Siberian Tiger Conservation Area has passed the state assessment. 76.6 million yuan has been invested on rural environment improvement; agriculture-related loans of 0.5 billion yuan were released and preferential funds for agriculture reached 92 million yuan; 23408 rural labors were transferred; and the rate of forest coverage reached 76.5%.

3.2.2 The economic development of Wangqing County

The gross value of production of the whole county reached 6.83 billion yuan, with a year-on-year growth of 1.1%; fixed asset investment totaled 7.1 billion yuan, with a year-on-year growth of 21.2%. Full-caliber fiscal revenue reached 1.01 billion yuan, with a year-on-year growth of 1.1%; the local fiscal revenue reached 0.78 billion yuan, with a year-on-year growth of 27.6%; fiscal expenditure reached 2.66 billion yuan, with a year-on-year growth of 10%; retail sales reached 2.12 billion yuan, with a year-on-year growth of 12%. The per capita disposable income of urban residents and net income of rural residents reached 17403 yuan and 10465 yuan respectively, with a year-on-year growth of 10% and 15% respectively. Crop planting area stables at 70000 hectares, grain yield reached 272000 tons.7 planting base for edible fungi and plastic film vegetables were newly built; the number of standard husbandry area reached 90. Baicaogou Green Planting and Breeding Area and Dongguang Ecological Agriculture Garden for sightseeing and fruit picking begin to take shape. 9.7 million yuan was invested in 23 irrigation and water conservancy projects. The Xidapo Water Control Project is ready for construction. The registration of rural land contractual management right has completed in 57 villages. Policy related forest insurance was first implemented in the province. Projects like taxus cuspidata planting base have been under construction comprehensively. The transformation of forestry economy has taken firm steps. The number of tourists reached 0.3 million; Tourism revenue reached 185 million yuan. The forest coverage rate reached 89.4%.

3.2.3 The economic development of Muling City

The GDP of Muling City totaled 10.02 billion yuan in 2010. Calculated by the comparable price, it increased 27.0% than last year. The added value of the first industry is 1.72 billion yuan, increasing by 17.2%. The added value of the second industry is 5.76 billion yuan, increasing by 31.3%. The added value of the tertiary

industry is 2.54 billion yuan, increasing by 23.5%. The three industrial structure is 17.2 : 57.5 : 25.3. The regional GDP per capita reaches 33943 yuan, increasing by 26.9%. There are 25000 jobholders in the city at the end of 2010, 445 people less than last year. There are 23000 on-the-job workers, 96 people less than last year. There are 4936 new job opportunities, and the urban registered unemployment rate is controlled at 2.1%.

3.2.4 The economic development of Dongning County

There are more than 100 foreign trade enterprises of a certain scale in Dongning County, 8 of which are key trade enterprises from other provinces. It has the largest import volume of silicon steel sheets, pine nuts and mechanical and electronic products across the country. The import-export volume of seafood and meat, timber import processing and timber re-export rank the first in Heilongjiang Province and it is awarded as the advanced county of foreign trade in Heilongjiang Province. It has founded 2 industrial parks and 24 economy entities in Russia. The Kangji Economic and Trade Cooperation Zone has become one of the eight "Going Out" industrial parks, which get key support from the nation. The port has achieved 12-hour customs clearance, opened direct visas service for foreigners, and has been awarded as the civilized and efficient port in Heilongjiang Province. It has completed the construction of frontier trade zone. The total output of agaric reaches 350 million bags, up to 14 million kilograms, accounting for 20% of the output in the whole nation. The establishment and utilization of Dongning Edible Fungus Research Institute and the Primary Bacteria Industry make it become a demonstration county of bacteria production and the largest agaric producing county in the county. The annual export volume of fruit and vegetable reaches 45000 tons, and it is awarded by the Ministry of Agriculture as a demonstration base of the national pollution-free agricultural products. Dongning Economic Development Zone covers an area of 408.5 hectares, and becomes one of the five biggest Russia-oriented export processing bases in Heilongjiang Province.

3.2.5 Investigation Results of the General Situation of Surveyed Forest Farms

1552 forest farm staffs from 25 households are affected in this project. In this survey, we randomly select 860 staffs from 300 households. Among them, there are 387 women, accounting for 45% of the total surveyed people; 610 people belong to labor forces, accounting for 71% of the total surveyed people, and 216 of them are women.

(1) Distribution of Age

Among the 860 staffs from 300 households that are investigated, there are 103 people aged 0~16, accounting for 12% of the total surveyed people; 627 people aged 16~60, 73.5% of the total surveyed people; 124 people aged over 60, 14.5% of the total surveyed people.

(2) Distribution of Education Degree

Among the 860 staffs from 300 households that are investigated, 9 people are illiterate, accounting for 1% of the total surveyed people; 67 people are at primary school level, accounting for 7.7% of the total surveyed people; 102 people are at middle school level, accounting for 11.9% of the total surveyed people; 628 people are at high school and technical school level, accounting for 73% of the total surveyed people; 55 people are at and above junior college level, accounting for 6.4% of the total surveyed people.

(3) Situation of Labor Forces

Among the 860 staffs from 300 households that are investigated, there are

662 people belonging to labor forces. Among them, 264 people are engaged in agriculture, 40% of the total labor forces; 166 people are engaged in agricultural, 40% of the total labor forces; 166 people are industrial labor forces, 25% of the total labor forces; 232 people are engaged in the third industry, 35% of the total labor forces.

(4) Situation of Family Income and Expenditure

Based on the investigation statistics of these 300 households, the average annual income of each household is 42408.02 yuan. Thereinto, 111134 yuan is agricultural income, accounting for 26.26% of the average annual income; 9462.9 yuan is forestry income, accounting for 26.31% of the average annual income; 134.41 yuan is industrial income, accounting for 0.32% of the average annual income; 2179.57 yuan is income from working for others, accounting for 5.14% of the average annual income; 298.92 yuan is business income, accounting for 0.70% of the average annual income; 14062.86 yuan is income from salary, accounting for 33.16% of the average annual income; 860.22 yuan is income from breeding, accounting for 2.03% of the average annual income; 2411.29 yuan is income from agritainment, accounting for 5.69% of the average annual income; 1863.44 yuan is income from other ways, accounting for 4.39% of the average annual income.

The average annual expenditure of each household is 19594.02 yuan. Thereinto, expenditure on water and electricity is 1219.07 yuan, accounting for 6.22% of the average annual expenditure. Expenditure on sewage and garbage is 222.32 yuan, accounting for 1.13% of the average annual expenditure. Expenditure on entertainment is 161.13 yuan, accounting for 0.82% of the average annual expenditure. Expenditure on living is 7159.14 yuan, accounting for 36.54% of the average annual expenditure. Expenditure on clothing is 1855.65 yuan, accounting for 9.47% of the average annual expenditure. Expenditure on production is 1454.84 yuan, accounting for 7.42% of the average annual expenditure. Expenditure on operating is 873.66 yuan, accounting for 4.46% of the average annual expenditure. Expenditure on house-renting is 280.11 yuan, accounting for 1.43% of the average annual expenditure. Expenditure on education is 3434.95 yuan, accounting for 17.53% of the average annual expenditure. Expenditure on medicine and treatment is 1626.94 yuan, accounting for 8.3% of the average annual expenditure. Expenditure on transportation is 1241.45 yuan, accounting for 6.34% of the average annual expenditure. Expenditure on taxes is 64.78 yuan, accounting for 0.33% of the average annual expenditure. The structure of income and expenditure is shown in Table 3-1.

Table 3-1. Household Income and Expenditure of Investigated Forest Farm Staffs

	Items	Yuan Per House hold	Yuan per Capital	Percentage
The average annual income of each household	Agriculture	11134.41	4123.86	26.26%
	Forestry	9462.90	3504.78	22.31%
	Industry	134.41	49.78	0.32%
	Working for others	2179.57	807.25	5.14%
	Business	298.92	110.71	0.70%
	Salary	14062.86	5208.47	33.16%
	Breeding	860.22	318.60	2.03%
	Agritainment	2411.29	893.07	5.69%
	Other income	1863.44	690.16	4.39%

Items		Yuan Per House hold	Yuan per Capital	Percentage
	Total income	42408.02	15706.67	
The average annual expenditure of each household	Water and electricity	1219.07	451.51	6.22%
	Sewage and garbage	222.32	82.34	1.13%
	Entertainment	161.13	59.68	0.82%
	Living	7159.14	2651.53	36.54%
	Clothing	1855.65	687.28	9.47%
	Production investment	1454.84	538.83	7.42%
	Operation expense	873.66	323.58	4.46%
	Renting houses	280.11	103.74	1.43%
	Education	3434.95	1272.20	17.53%
	Medicine and treatment	1626.94	602.57	8.30%
	Transportation	1241.45	459.80	6.34%
	Taxes	64.78	23.99	0.33%
	Total expenditure	19594.02	7257.05	
Net income		22814	8449.63	

Based on the above investigation, the average net income is 22814 yuan per household. The proportion of income from agriculture, forestry and salary account for 81.7%. and income from under-forest economy, pasturing and breeding takes a relatively small proportion.

3.2.6 Investigation Results of the General Situation of Peasants

393 peasants from 134 households are involved in this survey. Among them, 261 people of them are engaged in agriculture. There are 190 women, accounting for 48% of the total surveyed people; 285 people belong to labor forces, accounting for 72% of the total surveyed people, and 126 of them are women.

(1) Distribution of Age

Among the 393 peasants from 134 households that are surveyed, there are 80 people aged 0~16, accounting for 20% of the total surveyed people; 289 people aged 16~60, 74.7% of the total surveyed people; 60 people aged over 60, 15.3% of the total surveyed people.

(2) Distribution of Education Degree

Among the 393 peasants from 134 households that are surveyed, 8 people are illiterate, accounting for 1% of the total surveyed people; 72 people are at primary school level, accounting for 7.7% of the total surveyed people; 127 people are at middle school level, accounting for 13.6% of the total surveyed people; 703 people are at high school and technical school level, accounting for 75% of the total surveyed people; 35 people are at and above junior college level, accounting for 3.4% of the total surveyed people.

(3) Situation of Labor Forces

Among the 393 peasants from 134 households that are surveyed, there are 285

people belonging to labor forces. Among them, 200 people are engaged in agriculture, 70% of the total labor forces; 31 people are engaged in agricultural, 11% of the total labor forces; 23 people are industrial labor forces, 25% of the total labor forces; 232 people are engaged in the third industry, 8% of the total labor forces.

(4) Situation of Family Income and Expenditure

Based on the investigation statistics of these 134 households, the average annual income of each household is 66456.15 yuan. Thereinto, 36840.77 yuan is agricultural income, accounting for 55.44% of the average annual income; 3076.92 yuan is animal husbandry, accounting for 4.63% of the average annual income; 8461.53 yuan is income from working for others, accounting for 12.73% of the average annual income; 9230.77 yuan is business income, accounting for 13.89% of the average annual income; 6615.38 yuan is income from salary, accounting for 9.95% of the average annual income; 1923.07 yuan is income from breeding, accounting for 2.89% of the average annual income; 307.69 yuan is income from other ways, accounting for 0.46% of the total average annual income of each household.

The average annual expenditure of each household is 35031.15 yuan. Thereinto, expenditure on water and electricity is 1843.75 yuan, accounting for 5.84% of the average annual expenditure. Expenditure on living is 12937.5 yuan, accounting for 41.17% of the average annual expenditure. Expenditure on clothing is 1781.25 yuan, accounting for 5.67% of the average annual expenditure. Expenditure on production is 10750 yuan, accounting for 34.21% of the average annual expenditure. Expenditure on education is 1062.5 yuan, accounting for 3.38% of the average annual expenditure. Expenditure on medicine and treatment is 2487.5 yuan, accounting for 7.92% of the average annual expenditure. Expenditure on transportation is 562.5 yuan, accounting for 1.79% of the average annual expenditure. The structure of income and expenditure is shown in Table 3-2.

Table 3-2. Household Income and Expenditure of Investigated Peasants

Items		Yuan Per Household	Yuan per Capital	Percentage
The average annual income of each household	Agriculture	36840.77	15931.14	55.44%
	Animal husbandry	3076.92	1330.56	4.63%
	Working for others	8461.53	3659.04	12.73%
	Business	9230.76	3991.68	13.89%
	Salary	6615.38	2860.71	9.95%
	Breeding	1923.07	831.60	2.89%
	Other income	307.69	133.06	0.46%
	Total annual income	66456.15	28737.80	100.00%
The average annual expenditure of each household	Water and electricity	1843.75	797.30	5.87%
	Living	12937.5	5594.59	41.17%
	Production investment	1781.25	770.27	5.67%
	Education	10750	4648.65	34.21%
	Medicine and treatment	1062.5	459.46	3.38%
	Transportation	2487.5	1075.68	7.92%
	Other expenditure	562.5	243.24	1.79%
	Total expenditure	31425	13589.19	100.00%
Net income		35031.15	15148.61	

Based on the above investigation, the average net income of each peasant household is 35031.15 yuan. The proportion of income from agriculture, business and working for others account for 82.6%. and income from under-forest economy and pasturing takes a relatively small proportion.

3.3 Economic conditions of state-owned forest farm staffs in project areas.

3.3.1 The income of forest farm workers

Based on the investigation of state-owned forest farms in project areas and related staffs, we get to know the sources of their income and analyze the influences of the project on their livelihood. Among the 25 surveyed forest farms, salary income accounts for more than 70%, even up to 100% for staffs in Jilin Hunchun Siberian Tiger National Nature Reserve, Wangqing National Nature Reserve, Jilin Hunchun Lanjia protected areas (newly-built), Heilongjiang Niaoqingshan Nature Reserve (planned to expand) and Heilongjiang Laoyeling Siberian Tiger Nature Reserve; for staffs in Jilin Tianjiaolin Siberian Tiger Nature Reserve (newly-built) and Muling Northeast Taxus Chinensis Nature Reserve, self-employed income accounts for more than 40%, which is a large portion of their income. See Table 3-3. According to the survey on the income sources of forest farm staffs, it can be seen that in 2013, some self-employed income of forest farms still came from logging. In Wangqing National Nature Reserve, the income from logging accounts for 43% in Dahuanggou Forest Farm; 10% in Jincang Forest Farm; 10% in Xinancha Forest Farm. In Chaoyanggou Forest Farm of Heilongjiang Niaoqingshan Nature Reserve, the income from logging accounts for 10% as well.

Table 3-3: Income Sources of Forest Farm Staffs

Reserve Name	Forest Farm	Average Annual Income of Forest Farm Staffs (yuan)	Salary from forest farm (%)	Self-employed Income (%)	Percent of Self-employed Income (%)				
					Under-forest Economy	Planting	Breeding	working	others
Jilin Hunchun Siberian Tiger National Nature Reserve	Qinglongtai Forest Farm	39000	74.3	25.7	34.1	27.9	7.4	13.5	17.1
	Chunhua Forest Farm	39000	74.3	25.7	42.1	16.3	8.1	14.3	19.2
	Sandaogou Forest Farm	39000	74.3	25.7	37.4	17.5	6.3	12.1	26.7
	Yangpao Forest Farm	39000	74.3	25.7	41.2	19.7	9.2	14.6	15.3
	Banshi Forest Farm	38000	73.6	26.4	33.5	29.8	14.6	11.6	10.5
	Jingxin Forest Farm	39000	74.3	25.7	27.6	8.3	11.7	31.2	21.2
Wangqing National Nature Reserve	Dahuanggou	18000	74	26	/	/	57	15	2
	Jincang	20000	80	20	10	20	10	60	/
	Xinancha Forest Farm	23000	90	10	10	30	10	50	/
	Duhuangzi Forest Farm	21550	90	10	/	50	30	20	/
Jilin Hunchun Lanjia	Lanjia Forest Farm	22000	95	5	20	/	20	60	/

Reserve Name	Forest Farm	Average Annual Income of Forest Farm Staffs (yuan)	Salary from forest farm (%)	Self-employed Income (%)	Percent of Self-employed Income (%)				
					Under-forest Economy	Planting	Breeding	working	others
protected areas (newly-built)									
Heilongjiang Niaoqingshan Nature Reserve (planned to expand)	Chaoyanggou Forest Farm	8400	90	10	/	50	/	30	20
Jilin Tianjiaolin Siberian Tiger Nature Reserve (newly-built)	Xidahe Forest Farm	6000	30	70	100	/	/	/	/
	Xiangyang Forest Farm	5000	40	60	50	50	/	/	/
	Nenhe Forest Farm	4000	40	60	60	40	/	/	/
	Shanghe Forest Farm	4000	40	60	30	50	15	5	/
	Huapi Forest Farm	4000	40	60	20	80	/	/	/
Muling Northeast Taxus Chinensis Nature Reserve	Heping Forest Farm	4200	62.8	37.2	/	80	20	/	/
	Gonghe Forest Farm	4560	58	42	/	85	15	/	/
	Longzhuagou Forest Farm	4320	61.1	38.9	/	83.2	16.8	/	/
Heilongjiang Laoyeling Siberian Tiger Nature Reserve	Nuanquanhe Forest Farm	2200	100	/	/	/	/	/	/
	Sanchahe Forest Farm	2200	100	/	/	/	/	/	/
	Yuanshan Forest Farm	2200	100	/	/	/	/	/	/
	Sanjie Lazi Forest Farm	2200	100	/	/	/	/	/	/
	Zhongguli Forest Farm	2200	100	/	/	/	/	/	/

3.3.2 Impacts of the Project on Forest Farm Staffs' Income from Logging

After the construction and management of newly-built and expanded nature reserves is strengthened, prohibition of logging will be implemented in all state-owned forest farms within these reserves and in experimental areas of other reserves. After the prohibition policy, 60% of the income of forest farms from logging will be affected.

3.3.3 Impacts of the Project on Forest Farm Staffs' Income from Agaric Planting

Since the Natural Forest Conservation Project was implemented, the quota of

logging is decreasing year by year in Heilongjiang and Jilin Province. Now 60% of saw dust (raw material for agaric planting) is imported from Russia, 20% from local logging areas and 20% from alternative materials. At present, the cost of agaric is about 1.1 yuan per bag, in which saw dust accounts for 41.1%. The output value is about 2.4 yuan per bag and the profit is about 1.2 to 1.5 yuan per bag. Due to the comprehensive prohibition on logging, the decrease of local saw dust will directly affect the production of fungi bags. It's estimated by local producers that the cost of saw dust would increase by 20%, and if there are no alternative materials, the cost would increase 0.1 yuan per bag, 345 yuan per mu.

Table 3-4: Cost Component Ratio of Agaric Planting in 2013

Cost Component	Manual work	Fungi bags	Saw dust	Chaff	Straw curtain	Fuel	Plastic board	Clot h	Equipment	Land rent	Others	In total
Amount (yuan)	2705	467	4189	585	381	752	40	112	120	405	435	10191
Ratio (%)	26.54	4.58	41.10	5.74	3.74	7.38	0.39	1.10	1.18	3.97	4.27	26.54

3.3.4 Impacts of the Project on Forest Farm Staffs' Income from Collecting Under-Forest Products

With the establishment of nature reserves and the improved management and protection, the living space of forest farm staffs and their activities of producing and gathering forest resources in the forest area will be further reduced. It's estimated by forest farm staffs that income from under-forest economy in state-owned forest farms will be reduced by 10% to 20%. In the three nature reserves involving under-forest economy, the state-owned forest farm in Tianjiao Siberian Tiger Nature Reserve suffers the biggest loss, followed by state-owned forest farms in Hunchun Siberian Tiger Nature Reserve and Hunchun Lanjia protected areas. See table 3-5.

Table 3-5: Impacts of the Project on Under-forest Economy

Reserve Name	Forest Farm	Average income from under-forest economy per capita (yuan)	Percent of loss per capita (%)	Average loss per capita (yuan)
Jilin Wangqing National Reserve	Dahuanggou	17000	15	119
	Lanjia	13000	15	227
	Xinancha	65000	15	39
	Jincang	655000	15	82
Jilin Tianjiaolin Siberian Tiger Nature Reserve (newly-built)	Xidahe	70000	15	233
	Xiangyang	260000	15	248
	Nenhe	50000	15	185
	Shanghe	100000	15	143
	Huapi	110000	15	458

3.3.5 Impacts of the Project on Forest Farm Staffs' Income from Raising Cows

With the establishment of nature reserves and the improved management and protection, areas of breeding and grazing would be further reduced. However, statistics shows that only 11 staffs, a small group of people, are engaged in grazing in Shanghe

Forest Farm of Jilin Tianqiaoling Siberian Tiger Nature Reserve (newly-built), Jincang Forest Farm and Xinancha Forest Farm of Jilin Wangqing National Nature Reserve.

3.3.7 Impacts of the Project on Income from Ecotourism

With beautiful surroundings, the ecotourism in Jilin Hunchun Siberian Tiger National Nature Reserve enjoys sound development. In its subordinate Jingxin Forest Farm, 41.7% of the self-employed income comes from ecotourism at present. It has already been a national nature reserve. The project will not exert negative impacts on the income from ecotourism of each forest farm. If the cow pasturing was changed to captive breeding, the cost of breeding each cow will increase 2000 yuan.

3.4 Impacts of the Project on Peasants' livelihood

3.4.1 Peasants' income condition in the nature reserves.

The project involves 12 administrative villages in Jilin and Heilongjiang Province. According to the statistics of residents' income, villagers' income from planting accounts for about 80% to 90% in Heilongjiang Niaoqingshan Nature Reserve (expanded), Muling Northeast Taxus Chinensis Nature Reserve and Wangqing National Nature Reserve. In Jilin Hunchun Siberian Tiger Nature Reserve and Jilin Lanjia protected areas (newly-built), villagers' income are mainly from planting, breeding and non-agricultural business. There are some base for agritainment in Chunhua County. Some households are also engaged in agritainment business, the profit of which accounts for about 10% of their total income. See Table 3-6

Table 3-6: Peasants' Income Condition in Surrounding Rural Areas

Reserve Name	Involved Town	Village	Average Annual Income per Household (yuan)	Under-forest Economy (%)	Planting (%)	Breeding (%)	Non-agricultural Income (%)
Jilin Hunchun National Nature Reserve and Jilin Lanjia protected areas (newly-built)	Chunhua	Lanjia	12600	30	35	20	15
		Guandaogou	18000	10	70	10	10
		Xiacaomao	15000	10	60	15	15
		Shagcaomao	16000	10	60	15	15
		fenshuiling	12000	5	80	5	10
	Yangpao	Yantonglazi	12686.2	30	25	25	20
		Songlin	15000	10	60	15	15
		Dongala	10600	20	50	20	10
Heilongjiang Niaoqingshan Nature Reserve (expanded)	Sanchakou	Qianying	25000	10	80	5	5
		Chaoyanggou	25000	10	83	2	5
		Miaoling	30000	13	84	1	2
	Daduchuan	Hongixng	10000	10	84	2	4
		Liangzichuan	8000	15	80	0	5
Wangqing National Nature Reserve	Duhuangzi		3000	9	81	8	2

3.4.2 Impacts of the Project on Peasants' Income from Agaric Planting

There are 13 communities, 250 households and 728 peasants planting agaric in the project area. With the establishment of the nature reserves and the comprehensive prohibition of logging, these peasants will face shortages of saw dust. At present, the cost of agaric is about 1.1 yuan per bag, in which saw dust accounts for 41.1% (see table 3-3). The output value is about 2.4 yuan per bag; the profit is about 1.2 to 1.5 yuan per bag and 10 000 yuan per mu. It's estimated by local producers that the cost of saw dust would increase by 20%, and if there are no alternative materials, the cost would increase 0.1 yuan per bag, 345 yuan per mu.

Table 3-7: Areas and Population of Peasants Who Plant Agaric in Surrounding Communities

Project	Reserve Name	Town	Village	Impacts on Agaric Planting Affected by Decrease of Sawdust		
				Affected area (mu)	Affected households	Affected population
New construction and expansion of nature reserves	Jilin Hunchun Lanjia protected areas	Chunhua	Lanjia	28	14	40
	Heilongjiang Dongning Niaoqingshan Reserve	Sanchakou	Qianying	93	31	95
			Chaoyanggou	51	17	52
			Miaoling	78	26	101
		Daduchuan	Hongxing	168	56	178
			Liangzichuan	120	40	77
Construction of protection stations and forest tending	Jilin Hunchun National Reserve	Chunhua	Xiacaomao	9	6	21
			Shangcaomao	15	10	30
			Fenshuiling	7.5	5	15
		Hadamen	Guandaogou	15	10	24
		Yangpao	Yantonglazi	0	0	0
			Songlin	15	10	28
	Dongala		22.5	15	46	
	Wangqing National Reserve	Fuxing	Duhuangzi	20	10	21
In total				642	250	728

3.4.3 Impacts of the Project on Peasants' Income from Under-forest Economy

Before the establishment of these nature reserves, there are many peasants (about 450 households) gathering forest resources in state-owned forest farms. After the reserves are established, the management and protection will be strengthened. The living space of nearby peasants will be restricted and their activities of producing and gathering forest resources in the forest area will be further reduced. It's estimated by forest farm staffs and villagers that income from under-forest economy in state-owned forest farms will be reduced by 20%. In the three nature reserves involved with under-forest economy, local peasants in Jilin Hunchun Siberian Tiger National Nature Reserve, Jilin Lanjia protected areas and Niaoqingshan Nature Reserve (planned to expand) are involved in under-forest resources collection. It's estimated that the average income loss from under-forest economy would be about 462.5 yuan per household in Chunhua Town; 553.5 yuan in Yangpaoxiang Town. In Heilongjiang Dongning Niaoqingshan Nature Reserve, the loss would be 1000 yuan in Qianying Village; 750 yuan in Chaoyanggou village; 1950 yuan in Miaoling village; 500 yuan in Hongxing village and 600 yuan in Liangzichuan village. See table 3-8.

Table 3-8 Loss Ratio of Peasants' Income from Under-Forest Economy

Reserve Name	Involved Town	Village	Average Annual Income per Household (yuan)	Annual Income from Under-forest Economy (%)	Planting (%)	Breeding (%)	Non-agricultural income (%)
Jilin	Chunhua	Lanjia	12600	1260	10	20	252

Hunchun National Nature Reserve and Jilin Lanjia protected areas (newly-built)		Guandaogou	18000	1800	10	20	360
		Xiacaomao	15000	1500	10	20	300
		Shagncaomao	16000	1600	10	20	320
		fenshuiling	12000	600	5	20	120
	Yangpao	Yantonglazi	12686	3805.86	30	20	761
		Songlin	15000	1500	10	20	300
		Dongala	10600	2120	20	20	424
Heilongjiang Niaoqingshan Nature Reserve (expanded)	Sanchakou	Qianying	20000	2000	10	20	400
		Chaoyanggou	15000	1500	10	20	300
		Miaoling	30000	3900	13	20	780
	Daduchuan	Hongixng	10000	1000	10	20	200
		Liangzichuan	8000	1200	15	20	240
Wangqing National Nature Reserve		Duhuangzi	13000	270	9	20	54

3.4.4 Impacts on Peasants' Income from Pasturing and Cow Raising

There are 77 households engaged in pasturing in Jilin Hunchun Siberian Tiger National Nature Reserve, Wangqing National Nature Reserve and Heilongjiang Niaoqingshan Nature Reserve. With the establishment of these reserves and the strengthened management, it will be not allowed to pasture in state-owned forest farms. After state-owned forest farms are transformed to nature reserves and the management of current nature reserves is strengthened, the ecological environment will be greatly improved and the possibility of animal-caused accidents would increase. Thus peasant's pasturing will be affected. About 1/3 of peasants could not find dead bodies of their cows which were eaten by tigers and thus could not get compensations from the government. If the cow pasturing was changed to captive breeding, the cost of breeding each cow will increase 2000 yuan.

3.4.5 Impacts of the Project on Peasants' Income from Crop Planting

This project would have impacts on peasants who rent lands from state-owned forest farms. 447.51 mu of farm lands in Heilongjiang Dongning Niaoqingshan Nature Reserve have been leased to 122 households from Chaoyanggou, Miaoling and Liangzichuan for 1 year. The rental is 80 yuan per mu every year. They mainly grow corns and soybeans. Farm lands of Dongning Niaoqingshan Nature Reserve were released to peasants year by year. After the contract become due, the farmlands will be taken back. Thus it will have no impacts on peasants.

3.4.6 Impacts of Animal-caused Accidents

There would be more animal-caused accidents after the state-owned forest farms are transformed into nature reserves. Take Dongning County, Heilongjiang province as an example, there were several severe animal-caused accidents in recent years (See Column 3-1). It is predicted that animal-caused accidents would increase and local peasants would face more risks in production and personal security.

Column 3-1: Record of Major Animal-caused Accidents in Dongning County, Heilongjiang Province

There are wild Siberian tigers, wild boars, black bears appearing in the forest of Dongning County. Warnings have been released to peasants to remind them of prohibition on hunting and personal safety. However, animal-caused accidents still happened.

In August, 2006, Lenghongwen, a villager from Miaoling was bit by a tiger in Erheidingzi. He received 30 000 yuan for compensation after verification by local government.

In January, 2010, 4 cattle of Miaozaisheng, a villager from Dadu, were killed by tigers. Miao received 5000 yuan for compensation after verification by local government.

In September, 2013, a villager of Xinli Village was bit to death by a black bear at the north mountain of Xinli Village. Detailed situation was unknown (illegal poaching)

4 Legal and Policy Framework

4.1 Policies Applicable to this Project

4.1.1 Policies at the State Level

➤ *Regulations of the People's Republic of China on Nature Reserves*

The aim of the project is to protect the living environment of the Siberian tiger, so Regulations of the People's Republic of China on Nature Reserves is of top concern. Take Niaoqingshan Nature Reserve (planned to expand) as an instance, it can be seen from the layout map that there are peasants' farmlands in the northeast Sino-Russian border areas. However, as these farmlands are situated in the experimental zone of the planned nature reserve, rather than the buffer zone nor the core area, they have no influences on functional positioning of these nature reserves. This can be demonstrated in the following articles of the Regulations of the People's Republic of China on Nature Reserves:

Article 18. Nature reserves may be divided into three parts: the core area, buffer zone and experimental zone. The intact natural ecosystems and the areas where the rare and endangered animals or plants are intensively distributed within nature reserves, shall be included in the core area into which no units or individuals are allowed to enter. Scientific research activities are generally prohibited in the core area except for those approved according to Article 27 of the Regulations. Certain amount of area surrounding the core area may be designated as the buffer zone, where only scientific observations and other research activities are allowed. The area surrounding the buffer zone may be designated as the experimental zone, where may be entered for various activities such as scientific experiment, educational practice, visit and investigation, tourism, and the domestication and breeding of rare and endangered wild animal or plant species. If the people's government responsible for the approval of the establishment of the nature reserves thinks it necessary, certain amount of area surrounding the nature reserve may be designated as the outer protection area.

Article 29. With respect to the visiting and sightseeing tourist activities in the experimental zone of national nature reserves, the administrative agency of the nature reserves shall put forward the activity program. After it is reviewed by the competent administrative department of nature reserves of the people's government of the province, autonomous region or the municipality directly under the central government, the program shall be submitted to the competent administrative department of nature reserves under the State Council for final approval. With respect to the visiting and sightseeing tourist activities in the experimental zone of local nature reserves, the administrative agency of the nature reserve shall put forward the activity program, and submit it to the competent administrative department of nature reserves of the people's government of the province, autonomous region or the municipality directly under the central government for final approval. Visiting and sightseeing tourist activities in nature reserves shall be conducted according to activity program approved. The management of such activities shall be strengthened. All units and individuals who enter the nature reserves for visiting or sightseeing tour shall submit themselves to the management of the administrative agency of nature reserves. The visiting and sightseeing tourist projects that violate the protection guidelines of nature reserves shall be prohibited.

Article 32. No production installations shall be built in the core area and buffer zone of nature reserves. In the experimental zone, no production installations that cause environmental pollution or do damage to the natural resources or landscapes shall be

built. Other installations to be built in these areas must not exceed the discharge of pollutants prescribed by national or local discharge standards. If the installations that have been built discharge more pollutants than are specified by the national or local discharge standards in the experimental zone of nature reserves, such pollution shall be eliminated or controlled within a prescribed period of time. Remedial measures shall be adopted to the damage caused. The projects constructed in the outer protection zone of nature reserves must not affect the environmental quality inside the nature reserves. If the damage has been done, the relevant units shall be ordered to eliminate and control the pollution within a prescribed period of time. The decision to eliminate and control pollution within a prescribed period of time shall be made by the agencies specified by relevant laws and regulations. Any enterprise or institution receiving such an order shall complete its Tasks of eliminating and controlling pollution on time.

➤ ***The State Forestry Administration: Notice on Implementing Pilot Work of Completely Stopping Commercial Deforestation***

According to the *Notice on Implementing Pilot Work of Completely Stopping Commercial Deforestation* issued by the State Forestry Administration: based on the guideline of the No.1 Central Document in 2014, the State Forestry Administration shall take concrete measures to accelerate the recovery and cultivation of forestry resources and fully suspend commercial deforestation in key state-owned forest areas. It's ordered that Heilongjiang Forest Industry and the Great Khingan Mountains Forestry Group Company should cease commercial deforestation on a full scale from April 1, 2014 (see Appendix for details).

➤ ***Regulations on State-Owned Forest Farms***

According to the *Regulations on State-Owned Forest Farms* (2011.11.17):

Provision No. 6: all state-owned forest resources within the business scope of state-owned forest farms shall belong to the State and be managed by state-owned forest farms in accordance with the law. No organization or individual shall recapture, merge, encroach, embezzle, occupy or damage state-owned forestry resources in any form.

Provision No. 20: forest cutting in state-owned forest farms shall be conducted in strict accordance with the national quota, the permit system of forest cutting and the technical regulations on deforestation and afforestation. Afforestation shall be implemented according to the law. For state-owned forest farms with separately-compiled quota, their annual forest cutting quota shall be issued by provincial forestry department specifically.

Provision No. 21: occupation of state-owned forest farms and forest lands shall be tightly controlled. Regulatory agencies of state-owned forest farms in relevant forestry departments at and above provincial level shall participate in feasibility assessment of any construction project that involves occupying state-owned forest farms.

Provision No. 22: only with the approval of regulatory agencies of state-owned forest farms in relevant forestry departments at and above provincial level can the set-up of forest parks, wetland parks, nature reserves, scenic spots, and geological parks be submitted to a higher authority for approval through established procedure. The establishment of scenic spots and geological parks shall not change the right ownership to use the state-owned forest lands, and the ways of income distribution shall be clarified.

➤ ***Guidance on State-owned Forest Farms Reform***

The State Forestry Administration has drafted the *Guidance on State-owned Forest Farms Reform* and it is planned to be released in the first half of 2015 after summing up reform experiences in five pilot areas of state-owned forest farms in the

country. At present, current pilot reform measures and the National Forestry Administration Directors Meeting can shed some light on the contents of state-owned forest farms, and local forestry departments also indicated their forthcoming function reform. The reform draft calls for appropriate settlement and full employment for staffs in accordance with the principle of fairness and justice. Redundant staffs will be appropriately designated with jobs of forest tending, management and protection of forest resources, etc. For those at the age of 40 to 50, they could apply for early retirement in accordance with relevant national policies.

➤ ***Law of the People's Republic of China on the Protection of Wildlife***

Article 5. Citizens of the People's Republic of China shall have the duty to protect wildlife resources and the right to inform the authorities of or file charges against acts of seizure or destruction of wildlife resources.

Article 6. The governments at various levels shall strengthen the administration of wildlife resources and formulate plans and measures for the protection, development and rational utilization of wildlife resources.

Article 14. If the protection of wildlife under special state or local protection causes losses to crops or other losses, the local governments shall make compensation for them. Measures for such compensation shall be formulated by the governments of provinces, autonomous regions and municipalities directly under the Central Government.

4.1.2 Policies at Local Level

➤ ***Interim Regulations on Featured Industry Development Special Fund Management of Jilin Province (On trial)***

Since the introduction of *Interim Regulations on Featured Industry Development Special Fund Management of Jilin Province*, Jilin has set up special projects concerning forestry industry to provide assistance to local industry development, such as the Interim Regulations on Forestry Industry Development Special Fund Management of Jilin Province (On trial) (Jilin Fiscal Budget of Agriculture [2010] No. 344) that followed the Interim Regulations on Featured Industry Development Special Fund Management of Jilin Province, and the Notice on Reporting of the Special Fund Project for 2013 Wood Frog Industry Development.

➤ ***Regulations on Compensation for Physical or Property Damage Caused by Terrestrial Wildlife Animals under Special Protection of Jilin Province***

The Second Provision: victims have the right to obtain government compensation in accordance with this Regulation if he or she has been rendered physical or property damage within the administrative region of Jilin Province, caused by terrestrial wildlife animals under special protection of the state or Jilin Province (hereinafter, wild animals), as illustrated in the following circumstances:

(1) Caused physical damage or death to citizens engaged in normal working or life process;

(2) Caused great damage to crops planted in legally delineated areas;

(3) Caused injury or death to livestock, grazed or captive in legally delineated areas;

(4) Other circumstances that are legally considered as causing physical or property damage.

Article 6: Compensation management institutions of the province and cities are responsible for accepting compensation cases within the areas under administration. The procedure is that victims propose compensation application to their compensation

management institutions of cities and counties they are in and fill in the *Application Form of Compensation Methods of Damage to Person and Property Caused by Terrestrial Wildlife under Special Protection of Jilin Province*; After the compensation management institutions of cities and counties receive the form, they should file the case in time and send out more than two professional investigators to investigate and verify the whole case. If the compensation is affirmed to be below 4000 yuan(including 4000), the *Affirmation Form of Compensation Methods of Damage to Person and Property Caused by Terrestrial Wildlife under Special Protection of Jilin Province* should be filled in truthfully. And the local compensation management institutions should make compensations after the provincial compensation management institutions verify the case. It is proposed initially that if the compensation is above 4000 yuan, the county level compensation management institutions submit the investigation results and the *Affirmation Form of Compensation Methods of Damage to Person and Property Caused by Terrestrial Wildlife under Special Protection of Jilin Province* to the provincial compensation management institutions. After the provincial compensation management institutions send out the investigation and evaluation groups to check and verify on the scene, the amount of compensation should be checked and determined based on their opinions. Then, the local compensation management institutions make compensations.

Article 9: If the personal and property damage belongs to one of the situations within the range of the second article of this regulation after being identified by the provincial compensation management institutions according to law, the compensation should be given after the provincial compensation management institutions verify the case. The amount of compensation should be calculated according to the following rules:

If crops are harmed, the compensation is given according to the average yield per unit area of damaged crops over the past three years and sixty percent of the price in the local market at that time.

If the livestock are harmed, the maximum amount of compensation of the medical fee of harmed livestock is thirty percent of the value of this livestock. The amount of compensation for dead livestock is given according to the actual loss value of this livestock. If there are other cases, the city or county compensation management institutions report to the provincial compensation management institutions, check and verify the case and make compensations for them.

Provincial and city finance will each undertake 50% of medical treatment fee of personal injury caused by wildlife, damage compensation and compensation for damage to crops and livestock.

If the property loss is caused by the harm of wildlife, the price appraisal institution, which belongs to the price administration department, would appraise the case according to the law. People who have personal injuries would be appraised by medical and health appraisal institutions. The appraisal fee would be included in compensation.

➤ **Implementing Rules of Regulations on Compensation for Physical or Property Damage Caused by Terrestrial Wildlife Animals under Special Protection of Jilin Province**

Provision No. 6: that the component units for provincial office of compensation management shall coordinate and cooperate closely, ensuring the successful delivery of the following obligations:

The provincial forestry administration is mainly in charge of accepting and hearing compensation cases reported by regulatory agencies at city or county level,

ordering experts to investigate, verify and confirm relevant individual cases, coordinating other departments to confirm relevant compensation contents, proposing opinions on appropriating compensation fund, as well as assuming daily office work;

Provision No. 15: compensation management offices at city or county level shall settle all compensation cases by the end of a year. Compensation funds received by city or county level offices shall be paid to victim within one month after confirmation of provincial compensation management offices. Provincial compensation management offices shall pay part of the compensation fund it confirms, which will first be paid by city or county level offices and paid back by provincial offices by the end of each October.

Provision No. 16: provincial compensation management office shall collect all data on compensation funds for physical or property damage of the year (from the last November to the October), organize it into written material, and report to provincial department of finance by October 30 each year, which shall appropriate its part of the compensation fund to city or county financial or other relevant departments by the end of the year.

➤ ***Regulations on State-owned Key Forestry Areas in Heilongjiang Province***

Provision No. 12: management departments of state-owned key forestry areas at each level shall, in accordance with relevant rules and regulations of the state and province, establish ecological function protection areas in state-owned key forestry areas, and launch key forest ecological projects such as wild forests protection.

Provision no. 13: forestry and wetlands resources in state-owned key forestry areas shall be managed as public welfare establishment, for the purpose of utilizing their ecological benefits, be strictly protected, and ecological benefit compensation mechanism shall be set up in compliance with relevant regulations of the state and province.

4.1.3 Policy at County Level

➤ ***Heilongjiang Overall Plan of Agaric Industry Development of Dongning County (2014--2018) (Issued by the People's Government of Dongning County)***

According to the Plan:

Accelerate promotion of greenhouse cultivation. Build 15000 new greenhouses, with the total amount to 18500, and the overall cultivation volume to 500 million bags, covering 50% of the total cultivation. Elevate product quality comprehensively, and achieve win-win between efficiency enhance and pollution control.

Promote industrialization of fungi bags and bacteria strains. Build two secondary bacteria strains factories with annual production capacity of 5 million bags, with high-quality strains' self-sufficiency of over 60%. Build twenty large fungi bag factories with daily production capacity of over 100 thousand bags, with industrialization of fungi bags over 50%. Fully carry out campaigns to attract businesses, focusing mainly on Jilin Heizun and Suifenhe Baisheng, distribute rationally in towns, accelerate construction of large fungi bag factory construction with a view to give bacteria production capacity a revolutionary enhance.

Propel industrialization of bacteria production mechanics. Make Dongning Agaric (edible fungus) production mechanics processing zone as the main platform, while attract surrounding bacteria production mechanics into the processing zone. Develop 10 bacteria production mechanics enterprises, with annual production of 300 million RMB, producing mill, purifier, vibrator, sack filler, hemming machine, puncturing machine, sterilization boiler, and well-equipped greenhouse, etc., aiming at forming a

well-associated industry full of market competitive vigor.

Boost industrialization of agaric food processing. Vigorously expand the agaric food processing industry and accelerate transferring value-added of agaric products. Advance deep and profound processing of the product; develop refined-packaged products such as gift boxes, and instant food such as appetizers, and functional food such as polysaccharides. The processing rate of agaric reached 20%, with annual production worth of 300 thousand RMB.

5 Compensation Standard

Since the established conservation stations, supplementary feeding sites and temporary captivity factories are all within the range of the state forest farms, the problem of compensation for land acquisition is not involved. However, the case of wildlife accidents are involved in the project, such as the Siberian tiger, so compensation policies and measures of surrounding peasant households of reserves are surely involved in this project.

5.1 Compensation for Comprehensive Ban on Logging in Forest Farms

According to the contents of state-owned forest farm reform from the “**State Forestry Administration Directors Conference**” and the upcoming *Reform Guidance of State-owned Forest Farm*, local forest departments also proposed that they would carry out function reform. The reform draft requires: employees should be properly designated and the full employment should be ensured based on the principle of fairness and justice. Redundant staffs will be appropriately designated with jobs of forest tending, management and protection of forest resources, etc. For those at the age of 40 to 50, they could apply for early retirement in accordance with relevant national policies. Employees’ salary will be transferred to local financial payment. Based on the issued policy which is going to be introduced, after the ban on deforestation is implemented, a subsidy not lower than 1000 yuan per m³ will be given to each forest farm based on the amount of prohibited deforestation.

Table 5-1 Compensation Standard for Prohibited Deforestation

Compensation Content	Compensation Standard	Compensation Unit	Form of Distribution
ban on deforestation	not lower than 1000 yuan per m ³	Suiyang Forestry Department; Wangqing Forestry Department; Hunchun Forestry Department; Tianqiaoling Forestry Department; Dongning Forestry Department; and Muling Forestry Department.	Paid by each forestry department to affected forest farms in the form of salary.

Based on the current price of woods, the price of pine is about 1300 yuan per m³. The average cost of loggers and transportation is above 300 yuan per m³. The compensation standard is higher than the current income.

5.2 Compensation Methods of Damage to Personal Security and Property Caused by Terrestrial Wildlife under Special Protection of Jilin Province

Article 6: Compensation management institutions of the province and cities are responsible for accepting compensation cases within the areas under administration. The procedure is that victims propose compensation application to their compensation

management institutions of cities and counties they are in and fill in the *Application Form of Compensation Methods of Damage to Person and Property Caused by Terrestrial Wildlife under Special Protection of Jilin Province*; After the compensation management institutions of cities and counties receive the form, they should file the case in time and send out more than two professional investigators to investigate and verify the whole case. If the compensation is affirmed to be below 4000 yuan(including 4000), the *Affirmation Form of Compensation Methods of Damage to Person and Property Caused by Terrestrial Wildlife under Special Protection of Jilin Province* should be filled in truthfully. And the local compensation management institutions should make compensations after the provincial compensation management institutions verify the case. It is proposed initially that if the compensation is above 4000 yuan, the county level compensation management institutions submit the investigation results and the *Affirmation Form of Compensation Methods of Damage to Person and Property Caused by Terrestrial Wildlife under Special Protection of Jilin Province* to the provincial compensation management institutions. After the provincial compensation management institutions send out the investigation and evaluation groups to check and verify on the scene, the amount of compensation should be checked and determined based on their opinions. Then, the local compensation management institutions make compensations.

If crops are harmed, the compensation is given according to the average yield per unit area of damaged crops over the past three years and sixty percent of the price in the local market at that time. If the livestock are harmed, the maximum amount of compensation of the medical fee of harmed livestock is thirty percent of the value of this livestock. The amount of compensation for dead livestock is given according to the actual loss value of this livestock.

The compensation standards for different crops and livestock are based on the compensation standard and current compensation cases.

Table 5-2 Compensation Standard for Animal-Caused Accidents

Compensation Content	Compensation Standard	Remarks
Rice	1104 yuan/mu	
Corn	852 yuan/mu	
Cattle	7500 yuan/each	Based on the lowest compensation standard at present.

In the project area, there will be cases in which wild geese eat the rice; wild boars destroy the farmlands; tigers and leopards eat the livestock. In the compensation cases, villagers are satisfied with the compensation. This indicates that the compensation standard confirms to their expectation.

5.3 Compensation Methods of Damage to Personal Security and Property Caused by Terrestrial Wildlife under Special Protection of Heilongjiang Province

Heilongjiang Province still doesn't introduce relative recognizing methods and

standards of compensation. However, according to Article 14 of *Law of the People's Republic of China on the Protection of Wildlife*, “If the protection of wildlife under special state or local protection causes losses to crops or other losses, the local governments shall make compensation for them. Measures for such compensation shall be formulated by the governments of provinces, autonomous regions and municipalities directly under the Central Government.” So, damage caused by wildlife under special state protection should be made compensations. In some places, wolves and wild boars are not wildlife under special protection, so damage caused by them is not within the range of governmental compensation.

In this project, compensation methods of Heilongjiang Province can refer to the *Compensation Methods of Damage to Person and Property Caused by Terrestrial Wildlife under Special Protection of Jilin Province*. “If crops are harmed, the compensation is given according to the average yield per unit area of damaged crops over the past three years and sixty percent of the price in the local market at that time. If the livestock are harmed, the maximum amount of compensation of the medical fee of harmed livestock is thirty percent of the value of this livestock. The amount of compensation for dead livestock is given according to the actual loss value of this livestock.” The compensation standard is shown in Table 5-2.

6 Recovery Scheme of Immigrants' Production and Life

6.1 Objectives of Resettlement

Immigrants should be given reasonable compensation and be resettled properly due to the project. It should be ensured that immigrants would get compensations for all their loss and they could share the benefits of the project. We should offer help to them to get over their temporary difficulties, and improve their income, living standards and enterprises' production and profitability, at least up to the higher level when the project was implemented.

6.2 Principles of Resettlement

➤ Principle of Trying to Reduce Impacts on Immigrants

This project doesn't involve land requisition and demolition, but the project design still needs to be optimized. Living areas of peasants and core living areas of forest farm staffs should be avoided in the reserves. We shall try to minimize the impacts on the livelihood of nearby residents and forest farm staffs.

➤ Principles of Equivalent Compensation

The transformation of state-owned forest farms to reserves shouldn't be conducted at the cost of lowering the living standards of forest farm staffs and surrounding peasants. Their living standards should be ensured not to be lowered due to the project. Equivalent compensation should be implemented.

(1) If the agricultural land is occupied, all the damages would be compensated properly. The obtained compensation belongs to the affected people and couldn't be used in other aspects. Resettlement subsidies should be given to resettlement units or installed persons or used to pay the installed persons' premium.

(2) Compensation for houses and other properties should accord with the replacement cost, without deductions from depreciation or other forms of discount. Compensation could be offered by means of money or in kind. Compensation in any form should be equal to buy a house with equal area, similar structure and conditions in the same region.

(3) Public facilities would be restored comprehensively. Their functions should at least not be lower than the original level to maintain the normal life of people that don't migrate in the project area.

(4) Immigrants who are temporarily affected by the project and these who need not to migrate, while some properties of whom are damaged, would also get equivalent compensation.

➤ Principles of Focusing on Key Points

1. The project would pay key attention to the vulnerable groups (old people without adult child living with them, widows, single-parent families, disabled people, people with chronically disease and poverty-stricken families). When their livelihood is affected, preferential policies would be offered in terms of housing, employment, medical treatment. When the project is finished, we will pay regular return visits and help them if they have any special difficulty until they are transferred to the local civil affair departments.

2. In order to make full use of the resettlement fund and achieve the best effect of resettlement, we will strive to maximize the cost-benefit of immigrant resettlement, improve the working ability of resettlement institutions, standardize their work specification, establish perfected mechanism of internal control, avoid wasting or holding back money, avoid embezzlement and corruption in the project.

6.3 Resettlement Scheme

6.3.1 Resettlement for Ban on Logging

People who are engaged in logging would be affected by the comprehensive ban on commercial forest cutting, which directly involves 25 forest farms in Heilongjiang Province, covering an area of 5095575 mu. 4344 forest farm staffs from 1515 households are affected. (See Table 2-1 for detailed information)

Resettlement measures for forest farm staffs who are affected by the ban on logging are as follows:

According to the draft document--*Guidance on State-owned Forest Farms Reform* issued by the State Forestry Administration (planned to be released in the first half of 2015 after summing up reform experiences in five pilot areas of state-owned forest farms in the country), and based on contents of current pilot reform measures and the National Forestry Administration Directors Meeting: appropriate settlement and full employment will be ensured for staffs in accordance with the principle of fairness and justice; redundant staffs will be appropriately designated with jobs of forest tending, management and protection of forest resources, etc.; for those at the age of 40 to 50, they could apply for early retirement in accordance with relevant national policies. According to measures known from local state-owned forest farms, staffs' salary would be transferred from the present self-employment income to local financial expenditure after the state-owned forest farms are reformed.

Referring to the compensation standard of the General Bureau of Forestry Industry Group for improving the forest management and protection, and based on the second stage of natural forest protection project, it's proposed to add 1000 yuan per m³ according to the amount of prohibited logging after the prohibition policy is implemented.

6.3.2 Resettlement for Agaric Production due to the Ban on Logging

Comprehensive ban on commercial forest cutting would affect production of saw dust. 18 forest farms will be affected, including Qinghua Forest Farm and Qinglongtai Forest Farm in Jilin Hunchun Nature Reserve; Xidahe Forest Farm, Nenhe Forest Farm, Shanghe Forest Farm, Huapi Forest Farm, Xiangyang Forest Farm in Jilin Tianqiaoling Forest Farm; Dahuanggou Forest Farm and Jincang Forest Farm in Wangqing Nature Reserve. This will involve 3327 forest farm staffs from 1182 households; and also affect 728 peasants from 250 households in 13 communities around the reserves. Agaric-planting households would be affected by the ban on deforestation due to the decrease of saw dust (20% of saw dust is from local provinces, 20% from other substitutes and 60% is imported from Russia). Based on the investigation, the price of fungi bag will rise 20% in Mudanjiang prefecture; cost price of sawdust will rise $0.41 \times 0.2 = 0.08$ yuan per bag. Cost of black fungus is 1.1 yuan per bag; the output value is 2.4 yuan per bag; the profit will be 1.2~1.5 yuan per bag. The cost of black fungus will rise 0.1 yuan per bag after the price of fungi bag rises. If there are no alternative materials, the cost would increase 0.1 yuan per bag and about 345 yuan per mu. The profit will decrease by 5% per mu.

As regard to agaric-planting staffs and peasants, to development alternative materials and livelihood method can guarantee and improve their income. Resettlement measures are as follow:

To conduct training on soil cultivation of morel, on planting of under-forest ginseng, indigo, radix paeoniae rubra and rhizoma gastrodiae for agaric-planting households. Soil can be used to cultivate morel and Chinese medicine herbs, which will

eliminate dependence on surplus materials from logging. Based on investigation, the profit from planting morel, under-forest ginseng, indigo, radix paeoniae rubra and rhizoma gastrodiae is not lower than agaric. (See Table 6-1)

Table 6-1: Cost and Income of Alternative Crops for Agaric Planting

Cost and Income		Agaric	Under-forest ginseng	Morel	Indigo	Chinese medicine herbs such as Radix Paeoniae Rubra and Rhizoma Gastrodiae
Cost (yuan/mu/year)	soil preparation and cost of planting	500	640	2000	200	700
	cost of seeds and planting	15000	3500	2000	300	2500
	cost of chemical fertilizer and pesticide	500	100	1000	300	250
	cost of manual labor and other expenses	2000	750	2000	200	350
	In total	18000	4990	7000	1000	3800
Value of output (yuan/mu/year)		23000	35000	30000	6000	23800
Profit (yuan/mu/year)		5000	30000	24000	5000	20000

6.3.3 Resettlement and Production Recovery for Ban on Under-forest Activities

After the construction of newly-built and expanded nature reserves is strengthened, the activity scope of tigers and leopards will increase. And under-forest activities in the core area and buffer zone of state-owned farms, such as picking mushrooms and pine cone, will be restricted. This involves 9 forest farms, including 725 households and 2150 people; and 14 villages, including 444 households and 1299 people in total. Forest farm staffs predict that the loss from under-forest economy in state-owned forest farms is about 10%-20% of the present income. Forest farm staffs and villagers estimate that the loss of surrounding peasants in collecting under-forest resources is about 20% of the present income.

For agaric-planting staffs and peasants, under-forest products collecting and pasturing will be restricted. Thus, to develop alternative livelihood can guarantee and improve their income. Resettlement measures are as follow:

- Allow peasants to collect mushrooms and edible wild herbs in state-owned and collective forest farms, and experimental zones of nature reserves. But warning signs should be set at places where tigers would appear. (See Figure 6-1). Villagers are recommended to enter mountains in groups.
- Conduct training on planting north medicine and edible mushrooms in affected communities near Jilin Hunchun Siberian Tiger Nature Reserve, which involves 263 households. (cost and profit of Chinese medicine crop and morel is shown in Table 6-1). Detailed resettlement plan is shown in Table 6-3.
- Conduct training on planting edible mushrooms and north medicine in Jilin Tianqiaoling National Nature Reserve, involving 400 people, 125 households in 5 forest farms, without involving nearby communities. Detailed resettlement plan is shown in Table 6-5.

- Conduct training on planting edible mushrooms and north medicine in Wangqing National Nature Reserve, involving 1750 households or forest farm staffs, and 62 households of peasants. Detailed resettlement plan is shown in Table 6-4.
- Conduct training on planting edible mushrooms and breeding wood frogs in Heilongjiang Niaoqingshan Nature Reserve (planned to expand), which involves 200 households. Detailed resettlement plan is shown in Table 6-8.



Figure 6-1 Warning Signs of Tiger and Leopards

6.3.4 Recovery for Impacts on Pasturing in Natural Reserves

After the construction of newly-built and expanded nature reserves is strengthened, the activity scope of tigers and leopards will increase, and thus the possibility of cows being eaten by tigers and leopards will increase. For forest farm workers and peasants, they will be restricted in entering state-owned forest farms. To develop alternative livelihood can guarantee and improve their income. According to the investigation, 11 households and 33 people; 14 villages, 77 households and 207 people will be affected in terms of pasturing. Resettlement measures are as follows:

To conduct technical training on keeping bees in Jilin Hunchun Siberian Tiger National Reserve and surrounding areas that are affected. The cost and income of pasturing and keeping bees is shown in Table 6-2. This involves 120 peasants from 45 households in total. Detailed resettlement plan is shown in Table 6-3.

To conduct technical training on keeping bees in Jilin Tianqiaoling Siberian Tiger National Reserve and surrounding communities that are affected. This involves 15 forest farm staffs from 6 households in total. No peasants is involved. Detailed resettlement plan is shown in Table 6-3.

To conduct technical training on keeping bees in Wangqing National Nature Reserve. 18 forest farm staffs from 6 households and 51 peasants from 25 households are involved. Detailed resettlement plan is shown in Table 6-4.

To conduct technical training on keeping bees in Heilongjiang Niaoqingshan Reserve. This involves 28 peasants from 9 households in total. No forest farm staffs is involved. Detailed resettlement plan is shown in Table 6-8.

Table 6-2: Cost and Income of Alternative Crops for Agaric Planting

Cost and Income		Number of Cattles that are raised	Bees (box)
Investment Cost (yuan/ year)	Construction cost	3000	70
	Cattles and bees for covering	4000	160
	feedingstuff	1500	130
	Manual labor and other expenses	700	220
	In total	9200	580
Value of output (yuan/ year)		13200	1000
Profit (yuan/ year)		4000	300

6.3.5 Resettlement for Forest Farms' Reclaim of Farmland

After the state-owned forest farms in Dongning County, Heilongjiang Province, are transformed into nature reserves, farmlands of the forest farms which are leased to rural households will be resumed. The current rent is 80 yuan/mu on a yearly base. The peasants mainly cultivate crops such as corns, soybeans, etc. After these farmlands are upgraded into the nature reserve, the state-owned Chaoyanggou Forest Farm, which is located in Niaoqingshan Nature Reserve, Dongning County, Heilongjiang Province, will resume 447.51 mu of farmlands, involving 2 towns, 3 villages, 122 households and 354 people.

In order to reduce the impacts on peasants' livelihood, we will adopt the following resettlement measures:

- To conduct training on planting edible mushrooms and keeping bees in Heilongjiang Niaoqingshan Nature Reserve (planned to expand), which involves 122 households. The detailed resettlement plan is shown in Table 6-8.

6.3.6 Resettlement for Animal-caused Accidents

After the state-owned forest farms are transformed to reserves and the present management are strengthened, the ecological environment would be improved greatly, and the possibility of animal-caused accidents would increase. The construction and expansion of nature reserves will increase the activity scope of wildlife including the wild boar. The possible areas where wild animals would destroy crops cover an area of 142213 mu, involving 13 villages, 1462 households and 4559 people in total.

Once animal-caused accidents happens in the project area, compensation shall be given according to relevant regulations:

- For animal-caused accidents in the project area of Jilin Province, compensated shall be given according to the *Compensation Methods of Damage to Person and Property Caused by Terrestrial Wildlife under Special Protection of Jilin Province*.
- There is still no relevant identification measures and standards for compensation in Heilongjiang Province. However, there has been precedents of compensation for animal-caused accidents in Dongning County. According

to Article 14 in the *Law of the People's Republic of China on the Protection of Wildlife*: “ If the protection of wildlife under special state or local protection causes losses to crops or other losses, the local governments shall make compensation for them. Measures for such compensation shall be formulated by the governments of provinces, autonomous regions and municipalities directly under the Central Government.” Relevant regulation about compensation for wildlife-caused accidents is also being formulated in Heilongjiang Province. Once published, it would replace the previous informal identification measures and standards of compensation for animal-caused accidents in each county.

Table 6-3 Resettlement Plan for Jilin Hunchun Siberian Tiger Nature Reserve and Lanjia Nature Protection area

Subjects	Impacts	Resettlement Contents	Involved People	Specific Resettlement Plan
Forest farm staffs	Ban on deforestation	policy support		The compensation should be not lower than 1000 yuan per m ³
	Decrease of sawdust to plant agaric	Training on planting morel and mellea armillarial sporophore with soil	420	These two mushrooms can be planted in soil, which will avoid dependence on surplus material from deforestation areas. The income will not decrease. Teacher can be invited from Changbaishan Chinese Herbal Medicine Association.
		Training on planting under-forest panax ginseng	420	The training mainly aims at lumber men. But the growth period of ginseng is little. Thus it can be grown with mushrooms. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts on picking forestry products	Training on growing indigo	300	Good profits can be got by growing edible wild herbs in a pollution-free method on farmlands, and this will increase the income of forest farm staffs. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts on pasturing in reserves	Training on keeping bees	33	Employ experts from Changbaishan Chinese Herbal Medicine Association to conduct training on bee-keeping and lead peasants to develop green and pollution-free industry.
Peasants around the	Decrease of sawdust to plant agaric, impacts of animal-caused	Training on ginseng	150	Employ experts from Hunchun Forestry CO., Ltd. of Changbaishan Sengong Group and Ji'an Mayihe Panax Ginseng Co.,Ltd. to conduct training on planting ginseng for peasants.10 times, 500 yuan per time.

Subjects	Impacts	Resettlement Contents	Involved People	Specific Resettlement Plan
reserves	accidents on planting	Training on planting Radix paeoniae rubra and rhizoma gastrodiae	160	Invite experts from the Research Institute of Northern Specialty and Horticulture to conduct training on planting angelica for peasants. 10 times, 500 yuan per time.
	Impacts on pasturing in reserves	Training on keeping bees	100	Employ experts from Changbaishan Chinese Herbal Medicine Association to conduct training on bee-keeping and lead peasants to develop green and pollution-free industry. 10 times, 500 yuan per time. It's found from the research that the annual profit of each box of bees is about 7500 yuan.
	Impacts on picking forestry products	Training on growing indigo	300	Good profits can be got by growing edible wild herbs in a pollution-free method on farmlands, and this will increase peasants' income. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts of animal-caused accidents on husbandry	Strengthen the patrolling and on-site investigation	—	To formulate compensation recognition and methods for animal-caused accidents in Heilongjiang Province by referring to the <i>Regulations on Compensation for Physical or Property Damage Caused by Terrestrial Wildlife Animals under Special Protection</i> of Jilin Province and the <i>Implementing Rules of Regulations on Compensation for Physical or Property Damage Caused by Terrestrial Wildlife Animals under Special Protection of Jilin Province</i>
	Restriction of picking mushroom and potherb	—	—	Allow the ethnic minorities to collect mushrooms and potherbs in state-owned forest farms near the reserves. Set warning signs at places where tigers and leopards may appear. It's recommended that peasants enter the mountain in groups.

Table 6-4 Resettlement Plan for Jilin Wangqing Siberian Tiger Nature Reserve

Subjects	Impacts	Resettlement Contents	Involved People	Specific Resettlement Plan
Forest farm staffs	Ban on deforestation	policy support		The compensation should be not lower than 1000 yuan per m ³
	Decrease of sawdust to plant agaric	Training on planting morel and mellea armillarial sporophore with soil	400	These two mushrooms can be planted in soil, which will avoid dependence on surplus material from deforestation areas. The income will not decrease. Teacher can be invited from Changbaishan Chinese Herbal Medicine Association.
		Training on planting under-forest panax ginseng	350	The training mainly aims at lumber men. But the growth period of ginseng is little. Thus it can be grown with mushrooms. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts on picking forestry products	Training on growing indigo	300	Good profits can be got by growing edible wild herbs in a pollution-free method on farmlands, and this will increase the income of forest farm staffs. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts on pasturing in reserves	Training on keeping bees	20	Employ experts from Changbaishan Chinese Herbal Medicine Association to conduct training on bee-keeping and lead forest farm staffs to develop green and pollution-free industry.
Peasants around the	Decrease of sawdust to plant agaric, impacts of animal-caused	Training on Radix paeoniae rubra	120	Employ experts from Hunchun Forestry CO., Ltd. of Changbaishan Sengong Group and Ji'an Mayihe Panax Ginseng Co.,Ltd. to conduct training on planting ginseng for peasants.10 times, 600 yuan per time.

Subjects	Impacts	Resettlement Contents	Involved People	Specific Resettlement Plan
reserves	accidents on planting	Training on planting <i>Astragalus mongholicus</i> and <i>cortex dictam</i>	80	Employ experts from Jilin Agricultural University to conduct training on planting <i>angelica</i> for peasants. 10 times, 800 yuan per time.
	Impacts on pasturing in reserves	Training on keeping bees	50	Employ experts from Changbaishan Chinese Herbal Medicine Association to conduct training on bee-keeping and lead peasants to develop green and pollution-free industry. 10 times, 500 yuan per time. It's found from the research that the annual profit of each box of bees is about 7500 yuan.
	Impacts on picking forestry products	Training on growing indigo	100	Good profits can be got by growing edible wild herbs in a pollution-free method on farmlands, and this will increase peasants' income. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts of animal-caused accidents on husbandry	Strengthen the patrolling and on-site investigation	—	To formulate compensation recognition and methods for animal-caused accidents in Heilongjiang Province by referring to the <i>Regulations on Compensation for Physical or Property Damage Caused by Terrestrial Wildlife Animals under Special Protection</i> of Jilin Province and the <i>Implementing Rules of Regulations on Compensation for Physical or Property Damage Caused by Terrestrial Wildlife Animals under Special Protection of Jilin Province</i>
	Restriction of picking mushroom and potherb	—	—	Allow the ethnic minorities to collect mushrooms and potherbs in state-owned forest farms near the reserves. Set warning signs at places where tigers and leopards may appear. It's recommended that peasants enter the mountain in groups.

Table 6-5 Resettlement Plan for Jilin Tianqiaoling Siberian Tiger Nature Reserve

Subjects	Impacts	Resettlement Contents	Involved People	Specific Resettlement Plan
Forest farm staffs	Ban on deforestation	policy support		The compensation should be not lower than 1000 yuan per m ³
	Decrease of sawdust to plant agaric	Training on planting under-forest panax ginseng	210	The training mainly aims at lumber men. But the growth period of ginseng is little. Thus it can be grown with mushrooms. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts on picking forestry products	Training on growing fiddlehead, comon vetch and indigo	130	Good profits can be got by growing edible wild herbs in a pollution-free method on farmlands, and this will increase the income of forest farm staffs. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts on pasturing in reserves	Training on keeping bees	20	Employ experts from Changbaishan Chinese Herbal Medicine Association to conduct training on bee-keeping and lead forest farm staffs to develop green and pollution-free industry.

Table 6-6 Resettlement Plan for Heilongjiang Muling Siberian Tiger Nature Reserve

Subjects	Impacts	Resettlement Contents	Involved People	Specific Resettlement Plan
Forest farm staffs	Ban on deforestation	policy support		The compensation should be not lower than 1000 yuan per m ³
	Decrease of sawdust to plant agaric	Training on planting under-forest panax ginseng	200	The training mainly aims at lumber men. But the growth period of ginseng is little. Thus it can be grown with mushrooms. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts on picking forestry products	Training on growing fiddlehead, comon vetch and indigo	200	Good profits can be got by growing edible wild herbs in a pollution-free method on farmlands, and this will increase the income of forest farm staffs. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts on pasturing in reserves	--	--	--

Table 6-7 Resettlement Plan for Jilin Laoyeling Siberian Tiger Nature Reserve

Subjects	Impacts	Resettlement Contents	Involved People	Specific Resettlement Plan
Forest farm staffs	Ban on deforestation	Policy support		The compensation should be not lower than 1000 yuan per m ³
	Decrease of sawdust to plant agaric	Training on planting under-forest panax ginseng	100	The training mainly aims at lumber men. But the growth period of ginseng is little. Thus it can be grown with mushrooms. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts on picking forestry products	Training on growing fiddlehead, comon vetch and indigo	150	Good profits can be got by growing edible wild herbs in a pollution-free method on farmlands, and this will increase the income of forest farm staffs. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.

Table 6-8 Resettlement Plan for Heilongjiang Niaoqingshan Siberian Tiger Nature Reserve

Subj ects	Impacts	Resettlement Contents	Involved People	Specific Resettlement Plan
Fore st farm staffs	Ban on deforestation	policy support		The compensation should be not lower than 1000 yuan per m ³
	Decrease of sawdust to plant agaric	Training on planting morel, singeng and Chinese herb medicines	150	These two mushrooms can be planted in soil, which will avoid dependence on surplus material from deforestation areas. The income will not decrease. Teacher can be invited from Heilongjiang Chinese Herbal Medicine Association.
	Impacts on picking forestry products	Training on growing indigo	70	Good profits can be got by growing edible wild herbs in a pollution-free method on farmlands, and this will increase the income of forest farm staffs. Employ experts from Changbaishan Chinese Herbal Medicine Association to give instruction.
	Impacts on pasturing in reserves	--	--	--
Peasa nts aroun d the reser ves	Decrease of sawdust to plant agaric, impacts of animal-caused accidents on planting	Training on ginseng	100	Employ experts from Heilongjiang Academy of Agricultural Science to conduct training on planting ginseng for peasants.10 times, 500 yuan per time.
		Training on planting Radix paeoniae rubra and rhizoma gastrodiae	500	Employ experts from Northeast Agricultural University to conduct training on planting angelica for peasants.10 times, 800 yuan per time.

Subjects	Impacts	Resettlement Contents	Involved People	Specific Resettlement Plan
	Impacts on land reclamation	Training on ginseng	500	Employ experts from Heilongjiang Academy of Agricultural Science to conduct training on planting ginseng for peasants. 10 times, 500 yuan per time.
	Impacts on pasturing in reserves	Training on keeping bees	50	Employ experts from Changbaishan Chinese Herbal Medicine Association to conduct training on bee-keeping and lead peasants to develop green and pollution-free industry. 10 times, 500 yuan per time. It's found from the research that the annual profit of each box of bees is about 7500 yuan.
	Impacts of animal-caused accidents on husbandry	Strengthen the patrolling and on-site investigation	—	To formulate compensation recognition and methods for animal-caused accidents in Heilongjiang Province by referring to the <i>Regulations on Compensation for Physical or Property Damage Caused by Terrestrial Wildlife Animals under Special Protection</i> of Jilin Province and the <i>Implementing Rules of Regulations on Compensation for Physical or Property Damage Caused by Terrestrial Wildlife Animals under Special Protection of Jilin Province</i>
	Restriction of picking mushroom and potherb	—	—	Allow the ethnic minorities to collect mushrooms and potherbs in state-owned forest farms near the reserves. Set warning signs at places where tigers and leopards may appear. It's recommended that peasants enter the mountain in groups.

6.4 Implementation Schedule of Resettlement

According to the schedule of resettlement plan, the project construction will be finished within 4 years, from June, 2014 to June, 2018. The resettlement plan is planned to be consistent with the project construction. The major plans of resettlement last from March, 2015 to December, 2018.

The basic principle of resettlement schedule is as follows: (1) The resettlement should be finished 1 month before the construction of the project starts. Thus the affected groups can have enough time to prepare for production and income recovery. (2) During the resettlement, the affected people shall have the opportunity to participate in the project. Before the construction starts, the project contents should be publicized. And publicity handbooks of resettlement should be handed out for the public participation.

Based on construction contents of the project and resettlement schedule, the overall schedule of resettlement in this project is proposed. The specific time of implementation may be adjusted due to the deviation during the project. The schedule of resettlement is shown in Table 6-9.

Table 6-9 Resettlement Schedule

No	Activities	Time	Status
1	Preparation Stage for Resettlement		
1.1	Set up executive office for the resettlement	March, 2015	finished
1.2	Entrust agencies to formulate resettlement plan	March, 2015	finished
1.3	Conduct detailed social and economical investigation	March, 2015	finished
1.4	Formulate resettlement plan	April, 2015	finished
2	Information publicity and public participation		
2.1	Seek recommendation about resettlement from relevant department	April, 2015	finished
2.2	Publicize the draft resettlement plan and information fee to villagers and forest farm staffs	April, 2015	to be finished
2.3	Publicize the revised resettlement plan and information fee to villagers and forest farm staffs if needed	April, 2015	to be finished
2.4	Publicize the resettlement plan on the website of the world bank	April, 2015	to be finished
3	Approval of the resettlement plan	May, 2015	to be finished
5.1	Measures for income recovery	June, 2015-December, 2018	to be finished
5.2	Technique training for mitigated people	June, 2015 - December, 2018	to be finished
6	Base line investigation, monitoring and assessment	June, 2015-December, 2018	to be finished

6.1	Inner monitoring	June, 2015-December, 2018	to be finished
6.2	External monitoring and assessment	June, 2015-December, 2018	to be finished

7 Public Participation

7.1 Participation process and methods

According to the environment and social security policies of the World Bank, advance, informed, adequate and free community participation is required in the project. Field survey in the social assessment is important to discover and avoid social risks in the project. It is also an important step of adequate community participation in the preparation stage.

In the social assessment process, multiple forms of notification, social surveys and community consultation are conducted to key stakeholders involved in this project. Specific research methods and numbers are shown in Table 7-1:

Table 7-1: Participation Process and Research Methods of Stakeholders

Surveyed Stakeholder	Research Methods	Workload	Research Place
the General Bureau of Heilongjiang Forest Industry and its subordinate departments	meeting and consultation interview with key figures focus group interview	6 times 4 times 3 times	Beijing, Harbin Harbin Harbin
Heilongjiang Forest Department and its subordinate departments	meeting and consultation interview with key figures focus group interview	6 times 4 times 3 times	Beijing, Harbin Harbin Harbin
Jilin Forest Department and its subordinate departments	meeting and consultation interview with key figures focus group interview	6 times 4 times 3 times	Beijing, Changchun Changchun Changchun
Farmers in Heilongjiang reserves	questionnaire focus group interview	75 copies 1 times	Muling City Muling City
Forestry workers in Heilongjiang reserves	questionnaire focus group interview	65 copies 1 times	Muling City Muling City
Farmers in areas Surrounding Heilongjiang reserves	interview with key figures questionnaire focus group interview	2 times 48 copies 1 times	Doning County Doning County Doning County
Farmers in forest farms of Jilin reserves	interview with key figures questionnaire focus group interview	1 times 6 copies 1 times	Wangqing County Wangqing County Wangqing County
Forest workers of Jilin	interview with key	2 times	Wangqing County,

reserves	figures questionnaire	89 copies	Muling City Wangqing County, Muling City
Farmers in areas surrounding Heilongjiang reserves	interview with key figures questionnaire focus group interview	2 persons 50 copies 1 times	Hunchun City Hunchun City Hunchun City
Poacher	second-hand literature(illegal hunting, difficult to find relevant targets)	/	/



Figure 7-1: Interview with Peasants and Forest Farm Staffs in Chaoyanggou Forest Farm of Dongning County in Heilongjiang Province

7.2 Research on Project Awareness Rate

According to the statistical analysis of the questionnaire survey, 62% of forest farm workers and farmers are aware of the Landscape Approach to Wildlife Conservation Project. In spite of that, 38% of them are not aware of it. In-depth publicity is still necessary.

From the perspective of project area, according to the statistical data shown in the Table 7-2, in Heilongjiang province, the project awareness rate of farmers is 68.8%, of forest farm workers is 58%. It shows that in Heilongjiang project areas not all farmers and forest farm workers are covered in the publicity process, and the awareness rate of forest farm workers is lower than that of farmers. However, the survey results in Jilin project areas are much different. The project awareness rate of forest farm workers (70.1%) is higher than that of farmers (49%). This indicates that in Jilin project areas the publicity efforts among farmers in surrounding areas should be strengthened, and in Heilongjiang project areas the publicity efforts among forest farm workers should be strengthened. In general, the awareness rate of forest farm workers is higher than that of farmers in all project areas; therefore, publicity among farmers is still needed in this project.

Table 7-2: Do You Know the Landscape Approach to Wildlife Conservation in Northeast China Project

Province	Respondent	Statistical data	Yes, I do.	No, I do not.
Heilongjiang	Farmers	Number	33	15

		Percentage	68.8%	31.3%
	Forest farm workers	Number	83	60
		Percentage	58.0%	42.0%
Jilin	Farmers	Number	25	26
		Percentage	49.0%	51.0%
	Forest farm workers	Number	68	29
		Percentage	70.1%	29.9%
In total	Farmers	Number	58	41
		Percentage	58.6%	41.4%
	Forest farm workers	Number	151	89
		Percentage	62.9%	37.1%

Seen from the information source, analysis of publicity paths of the project can help to improve the publicity effects.

Table 7-3: Information Source of the Project

Province	Respondent	Respondent	File	Meeting	Media	Leaflet	Notice board	Other ways
Heilongjiang	Farmers	Number	0	0	9	19	1	3
		Percentage	0.00%	0.00%	28.10%	59.40%	3.10%	9.40%
	Forest farm workers	Number	8	15	45	10	1	1
		Percentage	10.00%	18.80%	56.30%	12.50%	1.30%	1.30%
Jilin	Farmers	Number	1	1	15	6	2	0
		Percentage	4.00%	4.00%	60.00%	24.00%	8.00%	0.00%
	Forest farm workers	Number	10	20	25	9	2	1
		Percentage	14.90%	29.90%	37.30%	13.40%	3.00%	1.50%
In total	Farmers	Number	1	1	24	25	3	3
		Percentage	1.80%	1.80%	42.10%	43.90%	5.30%	5.30%
	Forest farm workers	Number	18	35	70	19	3	2
		Percentage	12.20%	23.80%	47.60%	12.90%	2.00%	1.40%

According to the statistical data shown in Table 7-3, In Heilongjiang project areas, the farmers' major information source of the project is leaflet, accounting for 59.4%; then it is the media, accounting for 28.1%. Other sources accounts for a small percentage. For forest farm workers, their major information source is media, which accounts for 56.3%; then it is meeting, accounting for 18.8%; leaflet ranks the third. This indicates that in Heilongjiang project areas, forest farm workers have more channels to know this project than farmers. However, in Jilin project areas, the survey shows that the farmers' major information source of the project are media (60%), leaflets (24%), and then it is the notice board. For forest farm workers, their major sources are media (37.3%), meetings and then documents. This indicates that the publicity through media plays an important role both among farmers and forest farm workers; and because a forest farm is an independent organization, it is more convenient for workers to get the information of the project, which can be seen from

the wide sources of meetings and documents.

Overall, it can be seen that the farmers' major information source of the project is leaflet, while for forest farm workers, it is the media. Therefore, the project awareness rate needs to be improved in project areas of Heilongjiang and Jilin Province.



Figure 7-2: Interview with Villagers from Lanjia Village, Hunchun, Jilin Province

7.3 Survey on Project Recognition Rate

The project recognition rate has direct bearing on the sustainability of the project. According to the questionnaire survey of local villagers (see Table 7-4), the recognition rate of farmers reaches up to 89.4%, and these who object to the project only accounts for 1.2%. There are some villagers who show an indifferent attitude to the project (9.4%). This indicates that most villagers are in favor of the project.

Table 7-4 Overall Attitude of Farmers and Forest Farm Workers toward the Project

Attitude	Number of people	Percentage
Supportive	296	89.4%
Opposed	4	1.2%
Indifferent	31	9.4%
In total	331	100.0%

The project participation willingness of the interviewed villagers can further verify their recognition degree. As shown in Table 7-5, 90% of them are willing to participate in the project; only 1.8% of villagers are not; and 8.2% of them hold indifferent attitude.

Table 7-5: Are You Willing to Participate in This Project

Attitude	Number of people	Percentage
Supportive	297	90.0%
Opposed	6	1.8%
Indifferent	27	8.2%
In total	330	100.0%

The result of the questionnaire survey indicates that the recognition rate of farmers and forest farm workers are high. Though the project may limit the villagers' forestlands space and cause some environmental destruction, it also has professional and scientific planning and provides sustainable livelihood for the villagers, thus they hold a supportive attitude toward the project on the whole. See Table 7-6.

Table 7-6 Attitude of Respondents toward the Project in Different Provinces

Province	Respondent	Statistical data	Supportive	Opposed	Supportive
Heilongjiang	Farmers	Number	43	0	3
		Percentage	93.50%	0.00%	6.50%
	Forest farm workers	Number	124	2	11
		Percentage	90.50%	1.50%	8.00%
Jilin	Farmers	Number	38	2	11
		Percentage	74.50%	3.90%	21.60%
	Forest farm workers	Number	91	0	6
		Percentage	93.80%	0.00%	6.20%
In total	Farmers	Number	81	2	14
		Percentage	83.50%	2.10%	14.40%
	Forest farm workers	Number	215	2	17
		Percentage	91.90%	0.90%	7.30%

From the statistical data of Table 4-7, it can be seen that in Heilongjiang project areas, 93.5% of surveyed farmers support the project; no one objects the project; and some peasants hold indifferent attitude, who may not know well about this project, or make a living outside of the project area. For forest farm workers, the support proportion is 90.5%, which is lower than that of farmers. This indicates that the project has greater influences on forest farm workers than on farmers. However, in Jilin project areas, 74.5% of surveyed farmers support the project and 21.6% show indifferent attitude. For surveyed forest farm workers, the support proportion is 93.8%. Based on the above data, it can be seen that the support rate of surveyed farmers in Jilin is lower than that in Heilongjiang; while the support rate of surveyed forest farm workers in Jilin is higher than Heilongjiang. This further indicates that in Heilongjiang project areas publicity among forest farm workers need to be strengthened to improve their recognition of the project; in Jilin project areas publicity among farmers need to be strengthened.

Table 7-7 Participation Willingness of Respondents in Different Provinces

Province	Respondent	Statistical data	Unwilling		
			Willing	g	Indifferent
Heilongjiang	Farmers	Number	43	0	3
		Percentage	93.50%	0.00%	6.50%
	Forest farm workers	Number	126	3	9
		Percentage	91.30%	2.20%	6.50%
Jilin	Farmers	Number	38	2	10
		Percentage	76.00%	4.00%	20.00%
	Forest farm workers	Number	90	1	5
		Percentage	93.80%	1.00%	5.20%
In total	Farmers	Number	81	2	13
		Percentage	84.40%	2.10%	13.50%

Province	Respondent	Statistical data	Unwilling		
			Willing	g	Indifferent
	Forest farm workers	Number	216	4	14
		Percentage	92.30%	1.70%	6.00%

Based on the project investigation in the two provinces, it can be seen that different respondents have different participation willingness, which undoubtedly lead to higher requirements of the project implementation in different areas. In Heilongjiang project areas, the participation willingness rate of surveyed farmers is 93.5%, of forest farm workers it is 91.3%, lower than that of farmers. In Jilin project areas, the participation willingness rate of surveyed forest farm workers is higher than that of farmers. In general, the statistic data show that more forest farm workers are willing to participate in the project than farmers. Therefore, we need to take account of the overall participation willingness of both farmers and forest farm workers, as well as the regional participation willingness of different respondents, so as to achieve wider recognition of the project.



Figure 7-3: Interview with Villagers from Songlin Village, Hunchun, Jilin Province

8 Complaint Procedures

8.1 Possible Complaints and Settlement

Based on current national regulations on nature reserves, there might be some deviation in the understanding of the reserves among the project, local farms and rural households.

The *Resettlement Plan* is an overall plan that deals with resettlement from the aspect of the whole affected areas in this project. Any complaint would occur due to unexpected changes of actual situation and practice errors. Based on experience of resettlement in completed and ongoing projects, complaints about resettlement can mainly be divided into the following categories:

(1) Complaints about Quota

Due to deviation or errors in actual investigation, census and calculation process, omission, under-registration or mistaken registration of objects that is occupied, demolished or impacted would occur, which will harm immigrants' interests. Under such circumstances, the affected immigrants or their village committee shall report to the local project office in oral or written form, which would report it in documents to the proprietor and monitoring units after receiving the case. Then the proprietor shall take the lead in organizing experts to conduct site verification. The local project office will then issue settlement decision, identify and register objects that's been omitted, under-registered or mistakenly registered, and pay compensation in compliance with relevant regulations.

(2) Complaints about Compensation Standards

Minor immigrants doesn't know much about policies about reserve construction. They doubt about the compensation standard and complain that the standard is too low to satisfy their need to build new houses and rearrange their production activities. Thus before and during the implementation of resettlement plan, designers shall coordinate with state-owned forest farms and nature reserves, deliver design at the scene and disseminate relevant laws and regulations. They should also explain the counting process of compensation standard to make them understand that the compensation standard is enacted in accordance with relevant laws and regulations of the state and clear their doubts.

(3) Complaints about Fund Issues

During implementation of the resettlement plan, it is likely that the supporting fund or compensation for animal-caused damage might not be available in time, which will affect the livelihood and production of forest farm staffs and peasants. For such problems, project management offices shall control the capital, schedule and quality well, earmark the fund for specified purpose only, coordinate and supervise relevant departments to carry out supporting policies and implement compensation for animal-caused damage in order to make sure surrounding villagers' livelihood will not be affected.

8.2 Ways of Collecting Grievances and Complaints

(1) Letters and visits of affected people.

(2) Specific problems reflected during inspection process by the audit and disciplinary inspection departments.

(3) Reports of local resettlement offices, including problems about public complaints, schedules, working measures, etc.

(4) Internal supervision and investigation.

-
- (5) Relevant information reflected by external supervision and investigation units.
 - (6) Information reflected by workstations—agencies of proprietor units.

8.3 Complaint Channels and Procedures

During the planning, design, preparation, implementation, monitoring and assessment of the project, it will be favorable to select proper stakeholders to participate in the program, mainly including the participation and appeal mechanisms. The participation mechanism includes participation goals, means, conditions and contents, and participating institutions, personnel, time, place and budget as well. The appeal and complaint mechanism means that stakeholders can complain or appeal to concerned institutions if they still have not got satisfactory solutions after their participation.

1. Means to Collect Discontents and Complaints

- (1) To collect and analyze problems existing in complaints of the masses, progress and measures of the work through the reports of the project office.
- (2) Coordination problems found in the on-site investigation of construction sites of owner units.
- (3) Relevant information reflected by external inspection institutions.
- (4) Letters and visits from affected people.
- (5) Reflections from agencies of the project executive units.

2. Procedures of Appeal and Complaint

Forest farm works and rural households in peripheral areas are always encouraged to participate in the project. But more or less, problems will still arise in practice. In addition to the ongoing petition and compliant channels at all levels of forestry departments, the project also establishes transparent and effective channels and mechanisms of appeal for affected people to ensure timely and effective resolving of these problems and smooth progress of the project.

3. Principles to Handle Appeals and Complaints

Complaints from the masses must be investigated through field researches, their opinions must be heard and consulted patiently. Objective and justified counter-measures must be put forward in the light of principles and standards stipulated in national regulations or the project. As for complaints which they are not able to solve, the concerned units must report to upper-level departments and assist the upper-level departments to complete the investigation.

If decision-making institutions at the former stage do not reply to the appeal before the specified date, the declarant has right to continue the appeal.

4. Contents and Means to Reply to Appeals

- (1). Contents of the reply
 - Brief introduction of the complainer' discontents;
 - Investigation results;
 - Relevant regulations, principles and standards about the project implementation of the state;
 - Counter-measures and specific base.
 - (2). Means of reply
 - For particular individual complaints, replies in written materials can be directly sent to complainers.
 - For frequently reflected complaints, staff meetings or village committee can be hold and documents can be sent to notify the concerned forest farms or communities.
- Whichever means of reply is adopted, the reply materials must be sent to forest

farms or communities to which the complainers belong.

5. Records and tracking feedbacks of appeals and complaints

In the design and implementation period of the project, the monitoring team should cooperate with respective department in the registration and management of the complaint materials and the handling results, and regularly report to the project management office by means of written materials. The project management office will regularly check the handling and registration of the complaints.

To completely record the complaints handling situation and relevant problems of affected people, the project management office has worked out related registration chart as follows.

Table 8-1 Registration Chart for Complaints and Appeals of Landscape Approach to Wildlife Conservation in Northeast China Project

Complaint Receiving Unit	Date	Place		
Name of the Complainer	Content of the Complaint	Required Solution	Proposed Solution	Actual Situation of Handling
Signature of the Complainer			Signature of the Recorder	
<p>Note: 1. The recorder should correctly put down the contents and requirements of The complainer.</p> <p>2. Any disturbance and obstacle should be avoided in the process of the appeal.</p> <p>3. The proposed means of solution should be communicated to the complainer within specified time.</p>				

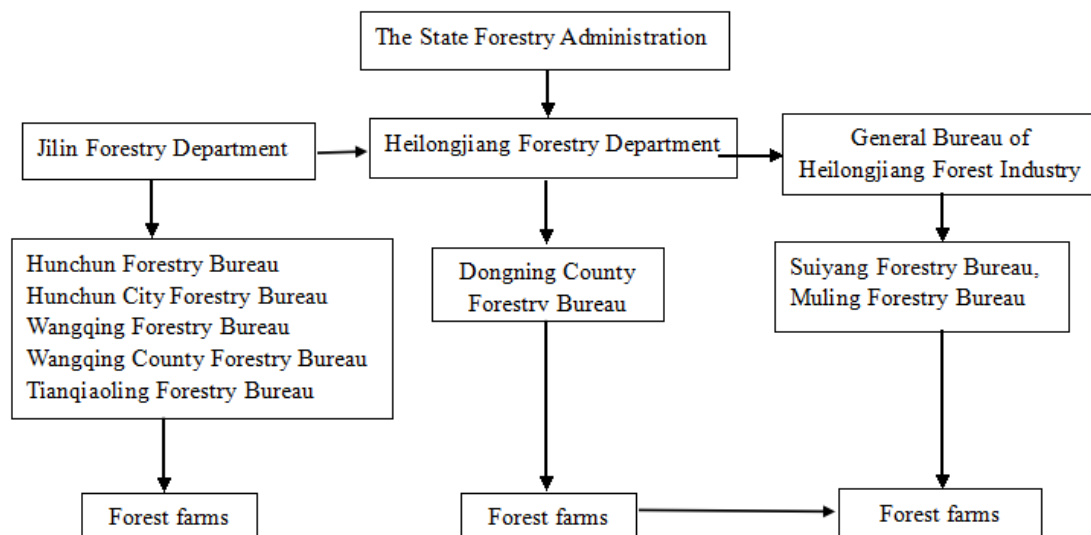
In addition, channels relevant to appeals and complaints will be publicly released to affected groups, and will be sent to each affected forest farms and community in the form of publicity materials before the implementation of this project.

9 Organizations

9.1 Organization Arrangement

At present, a system of operation and management institutions with forestry system as the core has been initially formed in the Landscape Approach to Wildlife Conservation in Northeast China Project. The main structure is shown in the Diagram 9-1 as below.

Diagram 9-1: Diagram of the Management Institution System



9.1.1 Leading Group of the State Forestry Administration

In order to strengthen the management, coordination and cooperation in the project, the State Forestry Administration takes the lead and set up the leading group for the protection project of the Siberian tiger. The leading group is headquartered in the administration.

The leading group of the State Forestry Administration is responsible for the coordination, management, supervision and service in the implementation of the project. At the same time it reports the implementation process of the project to the World Bank, coordinates all relevant divisions, provides technological aid in related activities, and coordinates the research and training.

9.1.2 Provincial Leading Groups

The leading group of State Forestry Administration has set up executive offices of the Siberian tiger habitat protection project respectively in Jilin Forestry Department, Heilongjiang Forestry Department and the General Bureau of Heilongjiang Forest Industry. These project offices are in charge of the coordination, management, supervision and service of the project activities within each department; arranging bid inviting and purchasing; writing annual financial plan; controlling engineering project quality; organizing technological assistance, research and training in the project area of each unit.

9.1.3 City and County Leading Groups

In accordance with the building pattern of the provincial leading groups, each city and county establish their own leading groups for the Landscape Approach to Wildlife

Conservation in Northeast China Project. The leaders of each city and county forestry bureau play the role of team leader, and the group members are major leaders of each county forestry bureau, development and reform bureau, construction bureau, planning bureau, finance bureau, land and resources bureau, environmental protection bureau, agriculture bureau, audit bureau and public security bureau, etc.

Major responsibilities of city and county leading groups are to coordinate relevant units to carry out the construction work of the project, hold conference regularly; check and supervise the quality and process of the construction of the project; make timely evaluation on the effect of the project construction; report the project process and solve major and difficult problems that appear in the project.

To ensure a smooth process of the project, the management institution is established for the Landscape Approach to Wildlife Conservation in Northeast China Project. The project office sets up comprehensive team, finance team, management team, bid inviting and offering team, etc.

The comprehensive team is responsible for business contact, materials and documents transfer, training of managerial persons, skill communication and inspection. It is required to report regularly to upper-level leading groups and the project office about the situation of the project.

The finance team is in charge of handling the expenses and receipts of loan capitals from the World Bank, completing relevant financial reports and cooperating with the audit department to do the capital audit work in the project.

The management team is responsible for the specific implementation of the project. It takes charge of the coordination among different departments, such as consulting, design and construction departments, to implement the project as required by the World Bank, and providing assistance to the World Bank to monitor the project process.

The bid inviting and offering team is responsible for the bidding of construction projects, and purchase of goods and equipment according to requirements of the World Bank.

Persons who are in charge of the project implementation have the overall responsibility for decision-making, commanding, implementing, bid inviting and offering, negotiation and contact in the project process.

Column 9-1: Major duties and responsibility of the project office in the implementation and management of the project

Equipment purchasing and installation, and civil construction activities are determined through bid inviting and offering. The project executive unit is responsible for bidding documents for the above activities. The technological part of these documents shall be worked out with the assistance of the project design unit. Every executive unit of planning, supply, construction and installation shall confirm to related laws and regulations, and the liability for breach shall be conducted in accordance with related laws.

The project executive unit shall cooperate with the project implementation unit and make the project implementation schedule. They shall notify all relevant parties before the implementation. Initial project implementation procedures and process arrangement can be found below.

The project executive units should create favorable conditions for project implementation units, and in turn, the project implementation units should comply to the command and dispatch of the project executive units.

To ensure a smooth implementation of the project, project offices of all

sub-projects should undertake the management during project implementation. They should consist of technicians and managerial personnel majoring in relevant fields of the project construction. The proposed duties and responsibilities of each department in project implementation and management institutions are the following:

Administrative management: responsible for daily administrative work, the reception and liaison of project implementation units.

Financial planning: responsible for the financial plan and the implementation plan; arrangement of the cooperation and procedure with project implementation units; capital using plan and payment procedures.

Technological management: responsible for the management of technical documents and files, organizing joint review of the design drawing, handling technology related problems, organizing technical communication, technical training and examination of professional skills for the staffs.

Construction management: responsible for the coordination and direction of the civil engineering construction and installation, construction process and plan, supervision and examination of construction quality and safety, inspection and acceptance of the project.

Material management: responsible for the ordering, purchasing, storage and allocation of equipment and materials in the project.

9.1.4 Project Operation Management Institution

A leading group in charge of the operation and maintenance after the project is implemented is set up for the Landscape Approach to Wildlife Conservation in Northeast China Project. It consists of major leaders and relevant responsible persons of forestry bureaus. The main duties and responsibilities lie in the establishment of operation management mechanism, supervision of project capital transfer, coordination among all public departments in project operation management.

Column 9-2: Introduction to the project organization management institutions

Arrangement of the Project Executive Institutions and Management Method of the Landscape Approach to Wildlife Conservation in Northeast China Project

In order to effectively manage and smoothly implement the loan project of the World Bank, the following project management (execution) institutions and project management methods have been established based on features of the ongoing system and government functions.

1. Project Executive Institutions

A leading group of the project Landscape Approach to Wildlife Conservation in Northeast China Project is set up for the coordination and convenience in the work.

(1) Landscape Approach to Wildlife Conservation in Northeast China Project Leading Group

Duties and responsibilities of the leading group:

1. Comprehensive arrangement of the project.
2. Coordination among different departments.
3. Financial Raising.
4. Reimbursement, allocation and repayment of loan capital.
5. Raising funds for the project preparation, implementation and operation.
6. The using of project funds and supervision of project quality.

(2) The Project Office of the Landscape Approach to Wildlife

Conservation in Northeast China

Duties and responsibilities of the project office:

1. Recognition and preparation of the project,
2. Planning and research of the project,
3. Design and assessment of the project,
4. Implementation and construction of the project.
5. Monitoring and assessment of the project.
6. Check and acceptance, and balancing of the project after its completion.
7. Operation and management of the project.

2. Project Management Institution

After the project is completed, a management leading group of the Landscape Approach to Wildlife Conservation in Northeast China Project will be established.

Main duties and responsibilities of the management leading group:

Establishment of a project management mechanism; transfer of project capital; monitoring and assessment of project benefits, repayment of loans, fund raising for project management.

9.2 Institutional Capacity-Building Program

In order to improve the overall quality of resettlement staffs, strengthen their capacity, make them know relevant laws and regulations and requirements of the World Bank about involuntary resettlement and ensure the smooth implementation of resettlement, the resettlement department has begun staff training on related policies and regulations about resettlement and the operation policy OP4.12/BP4.12 of the World Bank: Involuntary Resettlement. Training programs that have already been launched are as follows:

The training contents include principles and policies of resettlement; planning and management of resettlement project; implementation plan; financial management; management information system; monitoring and assessment; project management; social and economic investigation; consultation and public participation; social security policies of the World Bank.

9.3 The Plan to Further Enhance Institutional Capacity in the Future

To better implement the Resettlement Plan, ensure benefits of affected people and satisfy the overall plan of project schedule, the resettlement department of the Project Executive Office will take the following measures to strengthen the capacity of related organizations and institutes and improve their efficiency. See Table 9-1 for the Training Plan.

- Leadership responsibility: Leaders of county people's governments, which will take the lead, and leaders from relevant departments, such as the National Development and Reform Commission will form a competent leading group.
- High-quality personnel: Staffs of each resettlement organization must have a strong overall viewpoint, good knowledge in relevant policies and expertise, especially have working experience with the masses.
- Clarified responsibilities and tasks: Responsibilities and tasks of each resettlement organization will be clarified according to the requirements of the World Bank, and relevant laws and regulations.

- Training of resettlement staffs: Resettlement staffs are trained irregularly on resettlement policies and information management based on needs of resettlement work.
- Supervision of the masses and public opinions: The resettlement organizations shall publicize all materials that are related to resettlement work, and be ready to be supervised by the public.
- Resettlement Briefings will be held irregularly by the provincial resettlement office, and contents of the briefings will be provided in the form of brief report.
- The Project Office will equip resettlement organizations at each level with necessary vehicles and related office facilities in order to satisfy the need of the resettlement work.

Table 9-1: Training Plan for the Implementation of Resettlement

N o.	Trainer	Capacity training of administrative staff in project offices	Administrative staff in forestry bureaus	Capacity training of staff in nature reserves
1	Objectives of the training	To improve the management and monitoring capacity during the whole process of the construction of the World Bank's project	To improve management capacity of resettlement in project counties	To improve the working skills of staffs in each protection station within the nature reserve
2	Contents of the training	Training on management and monitoring capacity; domestic resettlement policies and that of the World Bank	Domestic and oversea investigations; Training on management and monitoring capacity; domestic resettlement policies and that of the World Bank; training on planning, implementation, management and monitoring capacity	monitoring technology of wild animals; their living habits
3	Training period	2015-2017	2015-2017	2015-2017
4	Trainees	Staffs of provincial, municipal and county-level project offices	administrative staffs of forestry bureaus	Provincial and domestic visits, study and training
5	Population of trainees	10/time;	10/time;	30/time;
	Times/year	2 times/year	2 times/year	1 time/year
	Number of years	3	3	3

10 Expenses and Budget

10.1 Capital Composition of Resettlement

Resettlement expenses in this project mainly include 6 parts: expense on the resettlement of forest farm staffs after the prohibition of deforestation is implemented; expense on the purchase of demonstration materials, expenses on training, expenses on monitoring of resettlement, expenses on administrative management of resettlement and expenses on contingencies. Because expenses on the resettlement of forest farm staffs after the prohibition of deforestation is implemented are very high, the State Forest Administration, together with other related units will launch a systematic reform to ensure their livelihood and work. Related expenses including the following ones will not be listed in this project. In addition, expenses on animal-caused accidents belong to contingencies. Thus they will not be listed in the capital budget either. The capital is supported respectively by each local government and the budget will be listed separately by the financial department.

Expenses on resettlement of forest farm staffs after the prohibition of deforestation is implemented

Expenses on resettlement of forest farm staffs after the prohibition of deforestation is implemented come from the fund from natural forest protection project to state-owned forest farms based on the amount of prohibited logging.

Expenses on the purchase of demonstration materials

Expenses on the purchase of demonstration materials refer to expenses on demonstration materials of alternative or new types of planting and raising technology provided for forest farm staffs.

Expenses on training

Training expenses include expenses on technical training and investigations delivered to forest farm staffs, managerial personnel and nearby farmers affected by the project.

Expenses on monitoring of resettlement

Expenses on monitoring of resettlement refers to fees that are used to monitor impacts on the livelihood of forest farm staffs and peasants, and to monitor the implementation and effects of mitigation measures as well.

Expenses on administrative management of resettlement

Administrative expenses on resettlement amount to 5% of the basic resettlement expenses. These expenses are mainly used by organizations related to institution strengthening, organizational coordination, internal monitoring, official and foreign affairs reception, post training, rewards for the project implementation units, information collection and dissemination, preparation at the early stages, purchase of offices, rent of temporary offices, staffs' salaries, welfare and social insurance, purchase, use and maintenance of vehicles, and expenses on office communication and daily management.

Expenses on Contingencies

Contingency expenses include unexpected expenses on materials and prices,

which amount to 10% of the basic expenses (expenses incurred in temporary transformation of the project design are not included).

Budget for Resettlement

According to the compensation standards and statistics of each project, the total resettlement expenses involved in the Landscape Approach to Wildlife Conservation in Northeast China Project is 3,719,710 RMB. See Table 10-1 for detailed budget.

Table 10-1: Budget Sheet of Resettlement in the Landscape Approach to Wildlife Conservation in Northeast China Project

Area	Type	Contents	Unit	Number	Expense (yuan/1 person)	Amount (yuan)	Subtotal (yuan)	Total (yuan)
(1) Basic Expenses								
Jilin Hunchun Nature Reserve and Lanjia Nature Reserve	1. Purchase of demonstration materials	1.1 Materials like new fungus, ginseng seeds and plastic film.	mu	3	15000	45000	66600	395600
		1.2 Demonstration of three-dimensional greenhouses.	Each	3	7200	21600		
	2. Expenses on training	2.1 Research on alternative fungus bags of agaric bags producers.	Person/time	20	4000	80000	329000	
		2.2 Training on agaric planting.	Person/time	48	1000	48000		
		2.3 Training on planting north medicines, edible fungus and keeping bees.	Person/time	106	1000	106000		
		2.4 Training for administrative staffs of the project.	Person/time	10	2000	20000		
		2.5 Training for administrative staffs of forestry bureaus.	Person/time	10	3000	30000		
2.6 Training for staffs of protection stations.	Person/time	15	3000	45000				
Jilin Wangqing Nature Reserve	1. Purchase of demonstration materials	1.1 Materials like new fungus, ginseng seeds and plastic film.	mu	2	15000	30000	44400	392400
		1.2 Demonstration of three-dimensional greenhouses.	Each	2	7200	14400		
	2. Expenses on training	2.1 Research on alternative fungus bags of agaric bags producers.	Person/time	25	4000	100000	348000	
		2.2 Training on agaric planting.	Person/time	45	1000	45000		
		2.3 Training on planting north medicines, edible fungus and keeping bees.	Person/time	108	1000	108000		
		2.4 Training for administrative staffs of the project.	Person/time	10	2000	20000		
		2.5 Training for administrative staffs of forestry bureaus.	Person/time	10	3000	30000		
2.6 Training for staffs of protection stations.	Person/time	15	3000	45000				
Jilin Tianqiaolin Nature Reserve	1. Purchase of demonstration materials	1.1 Materials like new fungus, ginseng seeds and plastic film.	mu	3	15000	45000	66600	379600
		1.2 Demonstration of three-dimensional greenhouses.	Each	3	7200	21600		
	2. Expenses on	2.1 Research on alternative fungus bags of agaric bags producers.	Person/time	16	4000	64000	313000	

	training	2.2 Training on agaric planting.	Person /time	48	1000	48000		
		2.3 Training on planting north medicines, edible fungus and keeping bees.	Person /time	106	1000	106000		
		2.4 Training for administrative staffs of the project.	Person /time	10	2000	20000		
		2.5 Training for administrative staffs of forestry bureaus.	Person /time	10	3000	30000		
		2.6 Training for staffs of protection stations.	Person /time	15	3000	45000		
Heilongjiang Muling Reserve	1. Purchase of demonstration materials	1.1 Materials like new fungus, ginseng seeds and plastic film.	mu	4	15000	60000	81600	430600
		1.2 Demonstration of three-dimensional greenhouses.	Each	3	7200	21600		
	2. Expenses on training	2.1 Research on alternative fungus bags of agaric bags producers.	Person /time	25	4000	100000	359000	
		2.2 Training on agaric planting.	Person /time	48	1000	48000		
		2.3 Training on planting north medicines, edible fungus and keeping bees.	Person /time	106	1000	106000		
		2.4 Training for administrative staffs of the project.	Person /time	10	2000	20000		
	2.5 Training for administrative staffs of forestry bureaus.	Person /time	10	3000	30000			
	2.6 Training for staffs of protection stations.	Person /time	15	3000	45000			
Heilongjiang Laoyeling Reserve	1. Purchase of demonstration materials	1.1 Materials like new fungus, ginseng seeds and plastic film.	mu	3	15000	45000	66600	415600
		1.2 Demonstration of three-dimensional greenhouses.	Each	3	7200	21600		
	2. Expenses on training	2.1 Research on alternative fungus bags of agaric bags producers.	Person /time	25	4000	100000	359000	
		2.2 Training on agaric planting.	Person /time	48	1000	48000		
		2.3 Training on planting north medicines, edible fungus and keeping bees.	Person /time	106	1000	106000		
		2.4 Training for administrative staffs of the project.	Person /time	10	2000	20000		
	2.5 Training for administrative staffs of forestry bureaus.	Person /time	10	3000	30000			
	2.6 Training for staffs of protection stations.	Person /time	15	3000	45000			
Heilongjiang Niaoqingshan Reserve	1. Purchase of demonstration materials	1.1 Materials like new fungus, ginseng seeds and plastic film.	mu	3	15000	45000	66600	435600
		1.2 Demonstration of three-dimensional greenhouses.	Each	3	7200	21600		
	2. Expenses on training	2.1 Research on alternative fungus bags of agaric bags producers.	Person /time	30	4000	120000	225000	
		2.2 Training on agaric planting.	Person /time	48	1000	48000		
		2.3 Training on planting north medicines, edible fungus and keeping bees.	Person /time	106	1000	106000		
		2.4 Training for administrative staffs of the project.	Person /time	10	2000	20000		
	2.5 Training for administrative staffs of forestry bureaus.	Person /time	10	3000	30000			
	2.6 Training for staffs of protection stations.	Person /time	15	3000	45000			

Subtotal	—	—	—	—	229200	2547400	—	2449400
(2) Expenses on monitoring of resettlement								
monitoring expenses on resettlement of rural communities		Person /time	50	6000	300000		800000	800000
monitoring expenses on resettlement of forest farms		Person /time	100	6000	500000			
(3) Expenses on administrative management of resettlement								
expenses on management of resettlement	5% of the basic expense					127370	127370	127370
(4) Expenses on contingencies								
expenses on contingencies	10% of the basic expense							244940
Subtotal	expenses on the purchase of demonstration materials		—	—	—	—	—	392400
	expenses on training,		—	—	—	—	—	215500
	expenses on monitoring of resettlement							800000
	expenses on administrative management of resettlement		—	—	—	—	—	127370
	expenses on contingencies		—	—	—	—	—	244940
Total	—					—		3719710

10.2 Assignment Objects and Resources of the Resettlement

Capital

Assignment Objects of the Resettlement Capital

According to the ownership of each relevant project, the resettlement capital of this project will be assigned to different objects. See Table 10-2 as below for details. To ensure the compensation capital can be assigned to affected individuals and organizations in time and in full, we will make full use of external and internal monitoring institutions and national auditing institutions. Besides, we will reduce intermediate links as much as possible and directly assign the resettlement capital to individuals or organizations in a simple and feasible way.

Table 10-2: Assignment Objects of the Resettlement Capital

Objects	Categories of Expenses
Rural Households	Compensation for livelihood loss incurred by the construction of nature reserves and animal-caused accidents
People of forest farms, nature reserves and forestry bureaus that need to be resettled	Related administrative expenses and targeted training expenses involved in the project.

Sources and money flows of the resettlement capital

Sources of the capital is divided into two parts: Grant from the World Bank;

government supporting funds. The use of the capital does not include any intermediary link in case of personal retention and embezzlement.

10.3 The Appropriation and Management of the Resettlement Capital

The appropriation of the resettlement capital in this project should abide by the following principles:

- All expenses involved in the purchase of demonstration materials, training and investigation are included in the implementation expenses of the project, and the project capital will be examined and verified by the construction unit of the project and construction unit of each nature reserve is responsible for the application of the special supporting funds of the government;

All the funds will be appropriated under the monitoring and management of internal monitoring institutions. External monitoring institutions will also monitor the process. Financial and monitoring institutions at all levels will be established to ensure the timely appropriation of all fund.

11 Resettlement Monitoring

11.1 Monitoring and Assessment Organizations

Monitoring and assessment of the project includes self-monitoring and assessment, and that of independent institutions. Responsibilities and obligations of different organizations and stakeholders are shown in the Table 11-1 as below.

Table 11-1: Organization Arrangement of Monitoring and Assessment

Relevant Institutions	Roles in the Monitoring and assessment	
	Self-Monitoring and assessment	Assessment of Independent Monitoring Institutions
The State Forestry Administration, provincial forestry departments, bureaus of forestry industry	organizer and coordinator	organizer and coordinator
County and city forestry bureaus, state-owned forest farms, protection stations	executor	organizer, coordinator, and information provider.
Neighborhood committee and village committee in peripheral areas of the reserves Rural households and residents in peripheral areas of the forest farms The constructor of the project Responsible departments in the county government	coordinator and information provider	coordinator and information provider
Monitoring institutions of the project	-	executor

11.2 Contents and Indicators in the Monitoring and Assessment

According to contents involved in the social assessment report, main contents of the monitoring and assessment are the following:

- To carry out tracking monitoring and assessment of social management plan in the light of the social monitoring and assessment indicators defined in the social management plan.
- To analyze and evaluate the actual benefits, influences and risks according to the investigation results of the tracking monitoring.
- To focus on the implementation of mitigation measures to eliminate negative effects of the project, and put forward timely measures to eliminate obstacles which impede the achievement of social goals, and adjust the plan appropriately if necessary.
- To recognize and analyze social problems and risks in the project and put forward measures and recommendations of correction and improvement.

Estimated indicators of monitoring and assessment are shown in the following Table 11-2:

Table 11-2: Monitoring and Assessment Indicators

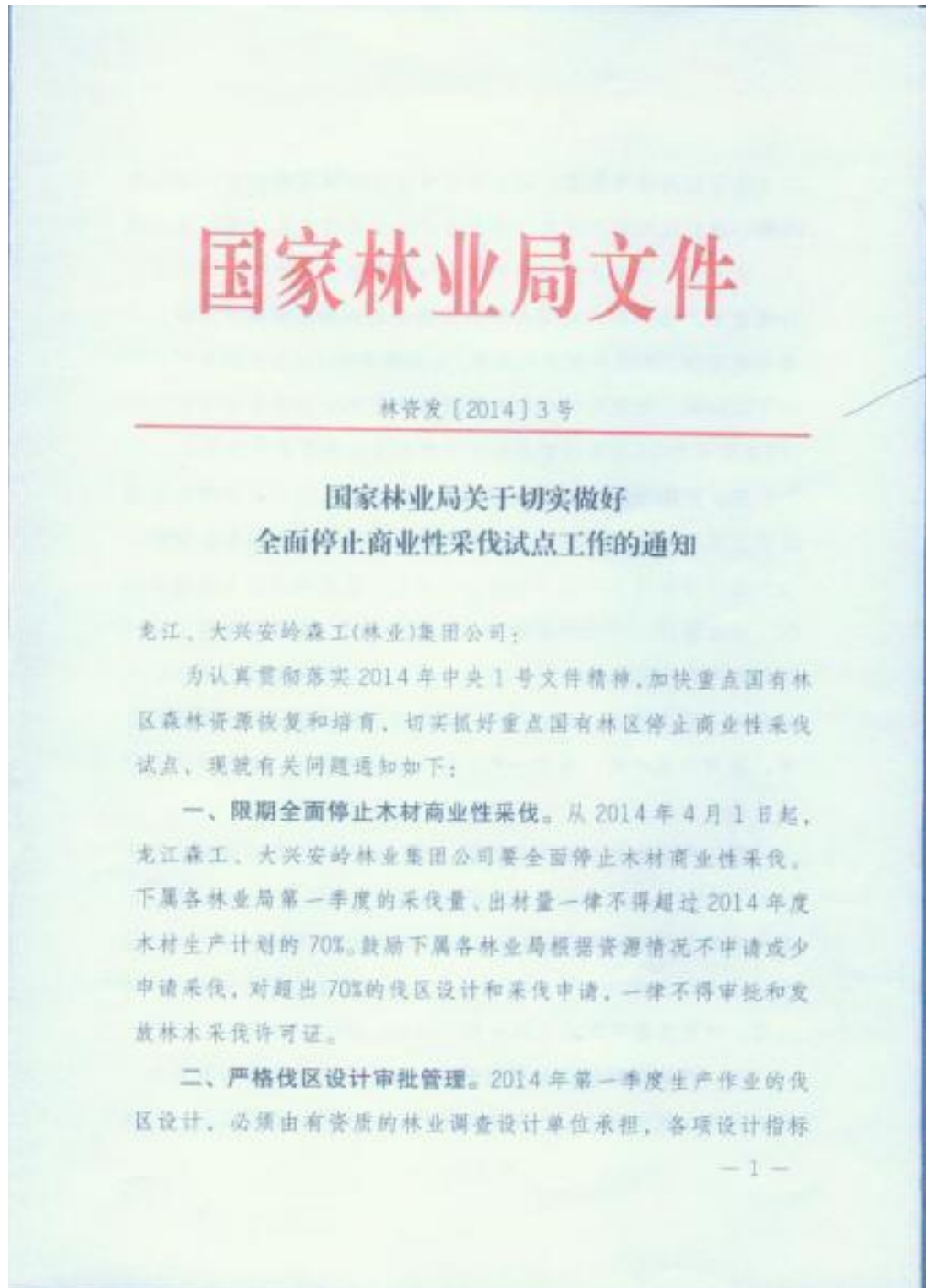
Types of Indicators	Objectives	Core Indicators
indicators of project implementation and construction	To know the project progress	The implementation construction contents, time, place, financial management, resources management, staff management and engineering management of the project.
Indicators of Project Input and Output	To know the project progress	Total amount of capital input, structure of capital sources, fields and structure of capital investment; direct and indirect output of the project
System Set-up	To improve the feasibility of the project	The establishment of animal accident compensation mechanism; The establishment of appeal and complaint mechanism; Changes of reform mechanism in state-owned forest farms; Changes of management mechanism in national forests and reserves.
Social Effects	To improve the feasibility of the project	Income structural and quantitative changes of forest farm works; Income structural and quantitative change of rural households in peripheral areas; Income structural and quantitative change of households living in poverty;
Social Risks	To improve the feasibility of the project	Quantity of animal accidents and compensation standard, and whether the standard meets demands of the impaired party; Willingness of forest farm works and residents to continue collecting forestry products in the reserves; Confiscation of hunting tools and handling of hunting cases; Alternative technique in agaric planting; Environmental behaviors of staffs engaged in reserve protection;
Public Participation	To improve the feasibility of the project	Awareness rate, participation willingness and satisfaction degree of forest farm works; Awareness rate, participation willingness and satisfaction degree of rural households in peripheral areas.
Stakeholders	To improve the feasibility of the project	To focus on analyzing the awareness rate, participating willingness and satisfaction degree of all stakeholders.

Note: (1) The project implementation and construction indicators, and relevant indicators involved in project input and output have been explicated in the content and background of the project, thus they will not be repeated here. (2) Monitoring indicators of forest farms' participation have been mentioned in the forest farms' participation of this report, thus they will not be repeated here.

12. Claim of Rights Table

Type of Impact	Affected Objects	Resettlement and Restoration Policies	Standards
Ban on logging	Forest farm staffs	According to the draft of <i>Guidance on State-owned Forest Farms Reform</i> : employees should be properly designated and the full employment should be ensured based on the principle of fairness and justice. Redundant staffs will be appropriately designated with jobs of forest tending, management and protection of forest resources, etc.	Based on the second stage of natural forest protection project, it's proposed to add 1000 yuan per m ³ according to the amount of prohibited logging after the prohibition policy is implemented.
Ban on logging	Farmers and forest farm staffs that plant agaric	Industrial transformation strategy of the local government and project implementation units	To conduct technical training on planting North Medicine, edible fungus and keeping bees.
Ban on under-forest activities	Farmers and forest farm staffs that are engaged in collect forest resources, planting and pasturing in state-owned forest farms	Industrial transformation strategy of the local government and project implementation units	(1) To conduct technical training on planting North Medicine, edible fungus and keeping bees; (2) To promote the co-management for villagers' picking forestry products in experimental areas and the protection and monitoring of nature reserves.
Settlement for animal-caused damages	Forest farm staffs and farmers	<i>Compensation Methods of Damage to Personal Security and Property Caused by Terrestrial Wildlife under Special Protection of Jilin Province; Law of the People's Republic of China on the Protection of Wildlife</i>	For rice, not lower than 1104 yuan per mu; For corn, not lower than 852 yuan per mu; For adult cow, not lower than 7500 yuan each.
Administrative fees of immigrants resettlement	Managerial staffs of the project	5% of the basic fees	See the <i>Capital Composition Table of Resettlement</i>
Contingency	Managerial staffs of the project, forest farm staffs (including these of protection stations), forestry bureau staffs, and farmers	10% of the basic fees	See the <i>Capital Composition Table of Resettlement</i>

**Appendix 1: The State Forestry Administration: Notice on
Implementing Pilot Work of Completely Stopping Commercial
Deforestation.**



必须符合相关技术规程，采伐木、保留木的确定要合理、标记要清晰，设计出材率不得高于木材生产计划确定的出材率。龙江森工、大兴安岭林业集团公司和国家林业局派驻监督机构对伐区设计质量要严格审核，对不合格的伐区设计一律不得审批发证，不得补充申报，其所涉及的采伐量、出材量要从70%的木材生产计划中予以扣减。采伐许可证核发情况请国家林业局派驻监督机构于2014年4月15日前书面报告国家林业局森林资源管理司。

三、严格伐区采伐作业监管。龙江森工、大兴安岭林业集团公司下属各林业局要进一步健全伐区作业质量监管机制，确保采伐作业严格按照伐区设计和采伐许可证的规定进行。严禁越界采伐、超量采伐、串树种采伐和改变采伐方式。各级林业主管部门要切实加大伐区作业监管力度，伐区作业存在问题的，要收回已核发的采伐许可证，中止采伐；要切实加强对伐区作业的验收管理，做到作业一块、验收一块，对不合格的伐区，要严肃追究相关责任人的责任。

四、严格木材运输销售监管。龙江森工、大兴安岭林业集团公司下属各林业局要全面清理库存木材，严格区分2014年第一季度生产的木材，提出木材运输计划报森工(林业)集团公司核定。依据各林业局上报的木材运输计划，木材运输证要核发一笔、注销一笔，核发总量不得超过林业局上报的木材运输总量。

五、严格森林抚育经营管理。为确保全面停止商业性采伐，坚决杜绝以抚育为名，行取材之实行为的发生，龙江森工、大兴

安岭林业集团公司下属各林业局开展森林抚育原则上不得生产木材。天然林抚育要严禁出材，人工林抚育要严格按抚育技术规程搞好设计，严格按设计实施。

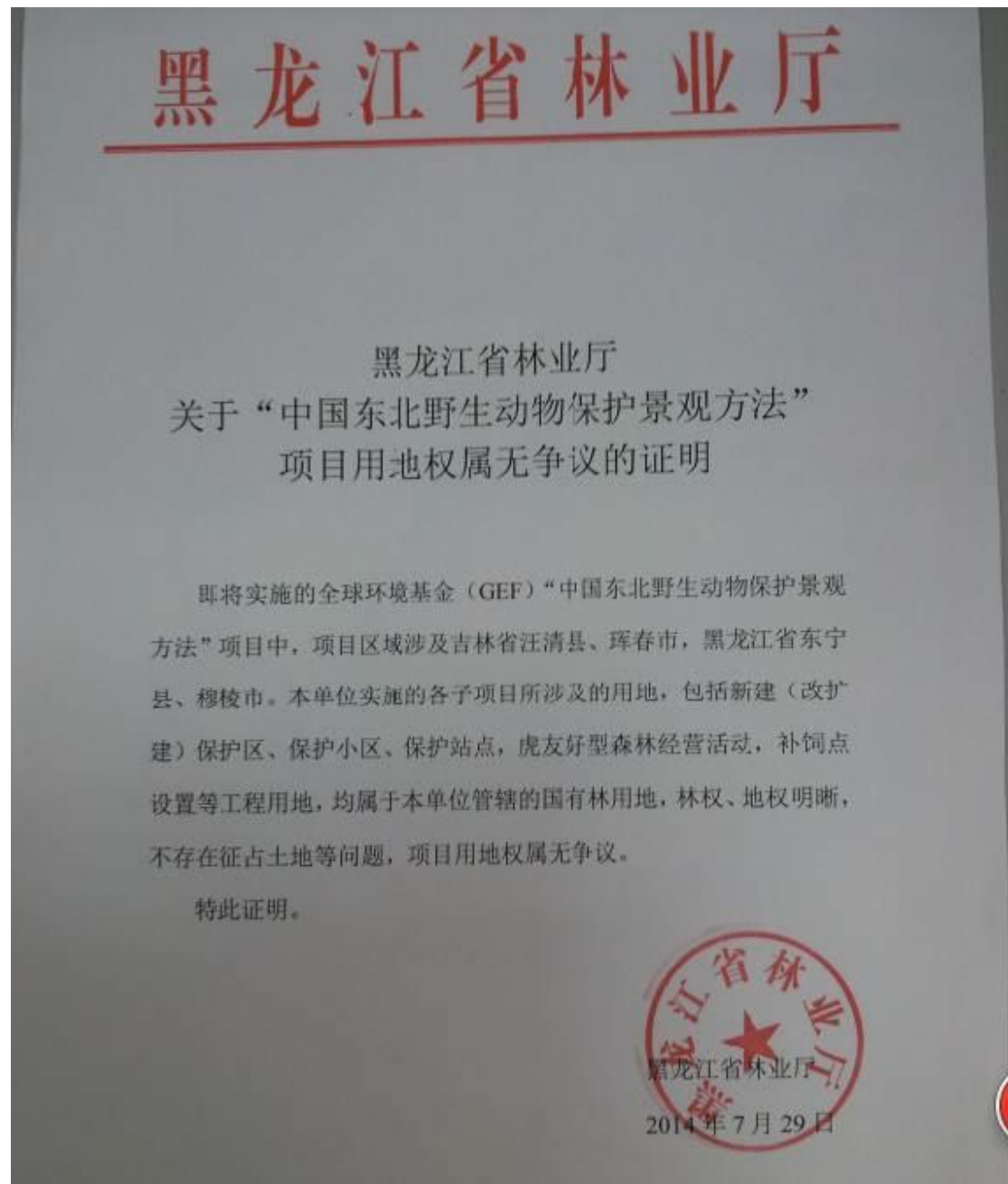
六、严格违法违规采伐责任追究。森工(林业)集团公司及所属各林业局要高度重视停止商业性采伐试点工作，切实加强对设计、采伐、运输各环节的监管，确保全面停产顺利推进。要建立严格的、分级负责的责任追究制度，明确监管责任，一把手负总责。我局各派驻监督机构要有针对性采取驻点巡查等措施，切实加大监督检查力度，发现问题要及时制止，并向我局报告。要采取超常规措施，确保不发生乱砍滥伐案件。

我局将对2014年一季度采伐情况进行重点检查，对违法违规采伐行为实行零容忍，发现一起，处理一起，依法依规追究有关单位主要领导及分管领导的责任。



Appendix 2: Ownership Certificate of Each Project Executive Unit Appendix

Appendix 2.1: Proof Document of Land Ownership in the Project of Heilongjiang Forestry Department



**Appendix 2.2: Proof Document of No Resettlement Problem Involved
in the Project of Heilongjiang Forestry Department**

黑龙江省林业厅

黑龙江省林业厅 关于“中国东北野生动物保护景观方法” 项目不涉及移民安置等问题的证明

即将实施的全球环境基金（GEF）“中国东北野生动物保护景观方法”项目中，项目区域涉及吉林省汪清县、珲春市，黑龙江省东宁县、穆棱市。在本单位实施的各子项目活动中，均不包括任何形式的移民安置等内容，同时在新建（包括改扩建）保护区、保护小区、保护站点等工程中不涉及移民拆迁等问题。

特此证明。



**Appendix 2.3: Proof Document of Land Ownership in the Project
of General Bureau of Heilongjiang Forestry Industry**

黑龙江省森林工业总局

黑龙江省森林工业总局
关于“中国东北野生动物保护景观方法”
项目用地权属无争议的证明

即将实施的全球环境基金（GEF）“中国东北野生动物保护景观方法”项目中，项目区域涉及森工林区的绥阳林业局（老爷岭东北虎保护区）和穆稜林业局（东北红豆杉保护区）。本单位实施的各子项目所涉及的用地，包括新建（改扩建）保护区、保护小区、保护站点，虎友好型森林经营活动，补饲点设置等工程用地，均属于本单位管辖的国有林用地，林权、地权明晰，不存在征占土地等问题，项目用地权属无争议。

特此证明。



