

Research on the Compensation of Wetland and Forest

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Abstract—This article starts from the research on the big ecological functions and benefits of forest and wetlands, points out that the present standard of compensation for expropriating the forestland and wetland is widely low, and it has the serious consequences. Further, this article creates a constructive formula to calculate the price of compensation and makes the specific recommendations for the relevant departments at all levels of reference.

Keywords—Woodlands, wetlands, ecological function, ecological benefits, collection of compensation

1. Introduction

In China, The present standard of compensation for expropriating the forestland and wetland is very low, which is very disadvantageous to the protection of forest, wetland, development of forestry, land remediation and climatic change. At present, China is carrying out a comprehensive reform of collective forest right system, it is necessary to take back 27.37 million hectares of collective forest rights and forest ownership to the farmers, the low collection of compensation will encroach on the interests of farmers seriously so that the collection of compensation for the forest and wetland should be increased.

2. Low Woodland Wetland Compensation and the Resulted Low Standard of the Adverse Consequences

2.1 Charge compensation is too low.

China's current agricultural land acquisition compensation fee is still low, which is difficult to ensure that the land of farmers "recent life is not reduced, the long-term protection of livelihoods." E.g. Heilongjiang Province established "city land Compensation District standards" in 2006, not including Young, ground attachments. The province is divided into 13 districts films, the highest standards of compensation for expropriation Area is Harbin, the average compensation is 21296.87 yuan per mu (32.52 yuan / m²), the province's agricultural land acquisition compensation standard of the general average is 11,000 yuan per mu (16.49 yuan / m²). Heilongjiang province issued a uniform standard of compensation for forest land (not including trees, saplings, seedlings and ground attachments) in 2007, focus on ecological forest, protection forest, special use land, compensation for the nursery 5 yuan per square meter, timber, compensation for 3 yuan per square meter, fuel forests, woodland and shrubs, shade plantations compensation for 2 yuan per square meter, compensation for no standing forest 1 yuan per square meter, a variety of forest area weighted The average compensation is only 3.15 yuan per square meter, wetlands are not standing forest, at only 1 yuan per square meter. Compared to average of the province agricultural land, forest, wetlands, land compensation standard the standard of agricultural land is 5.2 times that of forest land compensation standards and 16.5 times of wetlands area. In Harbin, agricultural land is forest land requisition land requisition compensation standard is 10.3 times that of land acquisition compensation standard wetland 32.5 times. Agricultural land requisition compensation standards has been significantly lower, woodlands, wetlands, land compensation standards is significantly much lower.

2.2 Unreasonable land compensation will cause serious consequences

(1) Serious occupation of the fundamental interests of farmers. National statutory collective farmland, woodland and wetlands management contract and the contract period is respectively 30 and 70 years, after the expiration can be extended. Family life, survival and development of the main production and living materials rely on agriculture, forestry, wetlands, which is once be collected, the farmers have lost their source of livelihood. The current land acquisition compensation standards do not reflect the land's potential benefits and use of value, do not consider the land of the farmers' the means of production and social security dual function, woodlands, wetlands, land compensation standards also not take into account forests and wetlands of great ecological benefits, especially above the provincial key construction project of land acquisition compensation were implemented "policy tilt, low-limit compensation", it can not effectively guarantee the land of farmers, "Recent life is not reduced, the long-term protection of livelihoods."

With the modernization of socio-economic and industrial development, China's urbanization rate is accelerating. According to the forecast, by 2030, China's urbanization rate will reach 65%, then China's urban population will reach 975 million, a large number of farmers will get into the city, urban construction investment is huge. In the land acquisition process, the government should give full attention to and protect the purchase of landless peasants into the cities and towns, life and development needs, not only for nation-building needs at the expense of the interests of farmers. Otherwise, a large number of low compensation made the land of farmers no room to live, even basic security is difficult to ensure, social stability and healthy development of the city will be difficult.

(2) Widen polarization of the Chinese society between rich and poor. The land charged by government's privileges will be sold several times higher than the cost of compensation for expropriation of land or even several times the price through the way of "Bidding, Auction, listing". Some developers acquired the land use right and built real estate, and then sell it to higher prices. In the land acquisition process, the land value generated by most of the land transferred to the government and land units, and resulting collective farmers, peasants, government, land units, multiple contradictions. The lower the price collection of woodland and wetlands, the more damage of the interests of farmers, which will inevitably leads to social polarization between rich and poor widening.

(3) No good for land improvement and improve the ecological environment. The state carried out a comprehensive reform of collective forest right system, *mutatis mutandis*, generation contract, to 2737 million mu of collective forest land contracted to farmers, the same franchise for 70 years, and the forest floor of 4.574 billion m³ stand volume, to farmers without compensation in order to develop forestry, land remediation, improve the ecological environment, climate change, and adjust the rural industrial structure, increase their income. Low price of woodlands and wetlands will encourage speculators to sneak into the forest, speculations woodland, wetlands, so that farmers will loss woodland, wetland, as well as changes in forest land, wetlands, nature, contrary to the national forest change.

(4) Erious loss of forest land and wetlands. Current average annual forest area of 2,500 acres disappeared, the equivalent of half of the country planting area each year. Nearly 20 years of wetland area decreased by 11.4%, in Heilongjiang Province, Inner Mongolia Autonomous Region within the wetland area were reduced more than 1 million km², the wetland area northeast Three Rivers has been less than 1 / 3 of the beginning of the founding^[1]. One major reason is low charge compensation for the forest and wetlands, construction sites, traffic, mining and other sectors of land, and the collection of dynamic balance of agricultural land form threat to all of woodland, wetlands encroachment, leading to woodland, wetlands serious loss. Such a large area disappearance, how to remediate land, how to fulfill President Hu Jintao's solemn commitment to the world at the UN climate change summit, land acquisition has a long way to go.

3. Huge Forest Wetlands Ecological Functions and Ecological Benefits

Woodlands and wetlands are the foundation natural resources and strategic economic resources to national development, it has a central role in ecological safety in the maintenance of land to protect the people's livelihood, timber and forest products supply and in addressing global climate change has a special status. Especially the forest and wetlands have other irreplaceable natural resources, huge ecological function and ecological benefits in the ecosystem, so land compensation price must consider the ecological benefits and

improve the land acquisition compensation standards, and safeguard the legitimate rights and interests of farmers land and social harmony and stability. I extracted and reorganized the value of forest ecosystem services, calculating, finishing in Heilongjiang Province, forests, wetlands, ecological benefits, in order to calculate forest, wetlands, compensation standard reference collection.

3.1 Enormous ecological functions and ecological benefits of forest

Forests and wetlands constitute the human life of the main terrestrial biological ecosystem, forest is the "lungs of the earth", wetlands are "kidney of the earth," 195 million hectares of existing forests, 20.36% forest covered, forest stumpage accumulation of 14.9 billion cubic meters, forest stock 13.721 billion cubic meters^[2]. China's forest ecosystems in conserving water, soil conservation, carbon sequestration and oxygen release, the accumulation of nutrients, purify the atmosphere and biodiversity six services make a total value of 10 trillion yuan a year, equivalent to nearly 1 / 3 of China's GDP of 33.5 trillion yuan in 2009. Among them, water conservation value of forest ecosystems in China is 4.06 trillion yuan, 494.766 billion cubic meters of water conservation, the equivalent of 12 water storage of Three Gorges Reservoir of 175 meters water storage capacity in 2009; Conservation value in the soil reach 0.99 trillion yuan The annual fixed amount of 7.035 billion tons of soil, equivalent to reduce 730 tons per square kilometer of land erosion, the amount of 364 million tons of fertilizer, equivalent to 2.6 billion tons of nitrogen fertilizer; carbon fixation and oxygen in Value 1.56 trillion yuan, the annual carbon sequestration volume of 359 million tons, 1.224 billion tons of oxygen release; accumulation of nutrients in value 0.21 trillion yuan, an annual accumulation of nutrients in forest quality 17 million tons; clean air environment value 0.79 trillion yuan ; annual 1.68×10^{27} anion in forests, the annual amount of 32 million tons of pollutants from the atmosphere, dust on the amount of 5.001 billion tons, the equivalent of hundreds of millions of air purification equipment function; Biodiversity conservation value 2.4 trillion yuan in^[3].

3.2 Ecological functions of forests and ecological benefits in Heilongjiang Province

Heilongjiang Province is an important forestry province in China, which has 21,168,900 hm^2 area of forest, forest covered 45.61% and the stumpage 1,698,678,000 m^3 , forest stock 1,629,326,200 m^3 , annual forest growth 62,951,300 m^3 , the author calculated through the 22 forest ecological functions and found out the annual ecological benefits rise up to 969.12 billion yuan, equivalent to 1.35 times of the province's GDP in 2008. Among them, absorption CO_2 10549.33 million tons annually, equivalent to the province's coal, oil, and the total amount of CO_2 emitted population in 2008, Heilongjiang is one of the few zero emissions CO_2 provinces, the ecological benefits of 178.07 billion yuan; forest oxygen and oxygen release 78,400,100 tons, equivalent to 26,849.3 million a year oxygen uptake, which reached 235.2 billion yuan in eco-efficiency; Forest Water 56 billion tons, equivalent to 72.5% of total water resources in the province, reached 105.28 billion yuan on eco-efficiency; forest maintaining soil 798,498,900 tons make the province's 1,762,600 hm^2 bottom of rivers and lakes reduce sedimentation 0.452 tons per year per square meter, ecological benefits of 3.03 billion years; the growth of forests across the province value of 25.62 billion yuan, only 2.6% of eco-efficiency Limited space, function and benefit calculation of the effective theory, the parameter are omitted. Heilongjiang Province agriculture total output value is 108.91 billion yuan in 2008, 13.11% of the province's GDP, equivalent to 1.35 times the average annual per hectare of forest ecological benefits of 44,724 yuan, which is 5 times the same amount of arable land.

3.3 The ecological functions and ecological benefits of wetlands in Heilongjiang Province

The ecological function of wetlands is also very large. There is an area of 4.612 hm^2 million wetland in Heilongjiang Province, including 2,849,000 hm^2 swamp, through research on the ecological functions of wetlands, the author found wetlands ecological benefits of 156.42 billion yuan on average each hectare ecological benefits of 54,895.7 yuan, 22.74% more than the trees. Mainly in the water conservation, flood mitigation, and drought, the function of purifying water quality, much higher than the forest, and its carbon sequestration, oxygen and oxygen release, solid earth, conservation of biological diversity, ecological tourism, ecological functions Benefits are also high.

4. The Party and the Country Attached Great Importance to the Protection and Development of Forest Wetlands.

In 2009, the central forestry work meeting, Premier Wen Jiabao on behalf of the State Council established the historical status of China's forestry: "Forestry plays an important role in implementing the strategy of sustainable development, has primacy in the ecological construction, has a basic position in the Western Development, has a special status in addressing climate change." President Hu Jintao in 2009, the world's climate change summit, solemn promise to the world: by 2020, compared to 2005, China's forest area will increase 40 million hm², 1.3 billion increase in forest stock m³, CO₂ emissions by a further reduction of 40% to 45%. Accordingly, the State Council approved the "Outline of National forest land protection and utilization (2010-2020)", by 2020, ownership of forest land area of 312 million hm² (46.8 mu), accounting for 32.5% of land area, forest area ownership to reach 223 million hm², over 23% forest covered and forest stock volume increase to more than 15 billion m³, 2.3 billion m³ more than in 2005. China's new land use planning, forest land, wetlands area have made a clear plan, and proposed a series of protective measures.

China has increased investment for forestry year by year. The government has invested 198.1 billion yuan, they will spend more than 2,300 billion yuan in the future. The total investment will reach 430 billion yuan, equivalent to 2.4 times investment for the three gorges project construction or the qingzang railway construction.

In order to fully mobilize peasants protecting forest enthusiasm, the government made comprehensive impel our collective forest right system reform decision in 2008. Turn 27.37 million hectares of collective forest land management, use and forest ownership to the peasant household that contracted for 70 years of practice. Our collective forest land area was 1.5 times farmlands, farmers contracted management 45.62 million hectares of farmland and collective forest land. It will play an important role to our country agriculture, rural areas and farmers' sustainable development and economic strength increasing. The forestry property right reform was called the third time land reform in the countryside by farmers.

5. Proposed Compensation Standards for Collection of Forest and Wetland

5.1 Provinces The collection standard

Ecological benefits per hectare (J), land area (M), the collective forest land, wetlands, household operations contract period (A), the interest rate differential (C), forest quality correction factor (X) the value determined by the charge associated compensation (LSJ), so:

$$LSJ=J \cdot M \cdot A \cdot (1+C) \cdot X$$

The difference of different province's nature, economy, forest and wetland ecological function is bigger, ecological benefit is also different. Heilongjiang annual average per hectare forest ecological benefit was 44724 yuan, wetland was 54895.7 yuan. The period for the woodland, wetland contracted is 70 years. Interest rates spread from government promulgated the woodland, wetland collection of compensation standard in the bank interest rate such as 2.36% to a collection of forestland, wetland in the current bank interest rate, such as 3.11%, its interest rates spread is 0.75%. Stand by age group to determine the quality first, the forest into greater than or equal to mid-maturation forest is 1.0, sapling and shrub is 0.8, Based on this respectively by forest crown density shrubbery coverage determined on crown density 0.5 to 1, the crown density increases 0.05, increases 0.1.

5.2 With The reasons for using this formula

If woodland and wetland turns into building lands, the ecological function will disappear completely, it will be harmful for response to climate change, prevention and curing all kinds of natural disasters, the production of the people's livelihood badly needs forest products. Our country rational forest area should be 4.08 billion hm², now we only have 1.95 million hm² woodland and 6594 million hm² wetland, we only can increase the woodland, wetland, can not reduce. the computation to impose compensation standards must be based on forestland, wetland huge ecological benefit, we must enhance compensation standards for forest land expropriation; if woodland, wetland is expropriation, the farmer will lose 70 years income, the period that woodland, wetland has fully function need at least 70 years. The natural disasters in china increase year by

year, the national every year because of natural disasters caused losses, the state to dredge the national land and governance ecology environment of devotion, relief and import various products of expenses for foreign exchange and other sum, converted into average per hectare forest, wetland compensation. It is more than 40 to 50 thousands yuan;

6. References

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