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# Construction of the Legal System of Forestry Carbon Sequestration Transaction in China

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**Abstract** Legal nature of forestry carbon sequestration transaction in China is introduced. Forestry carbon sequestration transaction is a kind of formal, bilateral, consensual and compensatory legal behavior following the principle of autonomy and having the nature of contract. Legal regulation of forestry carbon sequestration transaction is necessary for making and using demonstration text of contract, distributing the subject right and responsibility of forestry carbon sequestration transaction, offering references for environmental protection and other fields, and developing the voluntary market of forestry carbon sequestration. Based on this, construction of legal system of forestry carbon sequestration transaction is discussed from nine aspects, such as determining the subject, object and the third party in legal relationship of forestry carbon sequestration transaction, making clear the benefit distribution of subjects, and determining the effective element of legal behavior, the transaction price, the performing mode of transaction, the benefit distribution of subjects, the mode of bearing legal responsibility, and the trade dispute settlement means.

**Key words** Forestry carbon sequestration; Transaction; Legal system

Forest and wetland could absorb, collect and store carbon dioxide rapidly and largely, which is called carbon sequestration. Carbon sequestration transaction denotes that developed countries buy carbon sequestration index from developing countries, and this is an effective way realizing ecological compensation of forest through market mechanism<sup>[1]</sup>. International researches about forestry carbon sequestration problems have begun since the mid-late 1960s. With the implementation of *Kyoto Protocol* in 2005, forestry sequestration researches have been developed in China, mainly including the cognition on relevant problems of carbon sequestration projects under the mechanism of clean development, the transaction rule and policy selection of afforestation and reafforestation carbon sequestration projects, the selection of prior development regions, management status and evaluation index system, as well as the climate variation and Chinese forestry carbon sequestration policies. Management and operation of forestry carbon sequestration require the guidance of policies and laws. Legal researches concerning forestry carbon sequestration in China recently began to draw the attention of scholars. LI Nuyun pointed that management policy matched with regional layout of carbon sequestration should be established and carried out<sup>[2]</sup>. CAO Kai-dong proposed that in order to push the establishment of voluntary market of forestry carbon sequestration, the national legislation and the formulation of regulation and regional restriction should be advanced<sup>[3]</sup>. YANG Hua maintained that the exertion of national legislation should follow the rules of the government of the parties<sup>[4]</sup>. DENG Haifeng believed that through the guidance of policies and laws, market subjects would be able to understand the potential ecological value of projects and through

institutional designs, ecological benefits could be transformed into economic benefits<sup>[5]</sup>. Forestry carbon sequestration transaction is adjusted by legal rules such as forest law and environment law and restricted by the rules such as contract law and financial law. This paper tries to discuss the legal system of forestry carbon sequestration transaction in order to provide reference for the policy making.

## 1 Legal nature of forestry carbon sequestration transaction in China

(1) Forestry carbon sequestration transaction is a contract. Forestry carbon sequestration, as an undertaking of public welfare, could embody the ecological functions of forest, reduce the contents of greenhouse gases in atmosphere and protect living environment of humans. But the public welfare could not realize partial compensation through direct financial payment, as the ecological benefit compensation of public welfare forest. Forestry carbon sequestration transaction is a market-oriented way of forest ecological benefits with the joint efforts of global community. Therefore, it is an agreement of purchase and sale which transfers the ownership of carbon sequestration embodying the thought of free conclusion, following the principle of autonomy and having the nature of contract. The sellers undertake the duty of ensuring the delivery of carbon sequestration available for computing with promissory quantity and quality as the buyers pay.

(2) Forestry carbon sequestration transaction is a kind of formal, consensual, bilateral, compensatory and continuous legal behaviors. Firstly, forestry carbon sequestration transaction is a kind of formal legal behaviors. According to the current rules, the implementation of forestry carbon sequestration projects needs the approval and guarantee from the governments of cooperative parties, including the determination of operation rules and procedures of the projects, auditing standards and in-

viting independent management entities designated by contracting parties' session to approve eligibility, verify emission reduction and so on. Therefore, forestry carbon sequestration transaction, with its formal nature, can be set up and become effective with a particular form defined by law. Secondly, forestry carbon sequestration transaction is a kind of consensual legal behaviors. After contracting parties come to an agreement, forestry carbon sequestration transaction could be set up and become effective without delivering final outcome in fact and thus it has consensual nature. Thirdly, forestry carbon sequestration transaction is a compensatory legal behavior. The sellers undertake the duty of ensuring the delivery of carbon sequestration available for computing with promissory quantity and quality, that is to say, the sellers undertake the duty of blemish guarantee as the buyers pay, and thus it has compensatory nature. Fourthly, forestry carbon sequestration transaction is a legal behavior that contracting parties undertake the duty of consideration payment, and thus it has bilateral nature. Fifthly, the time of forestry carbon sequestration transaction is long generally and the delivery of outcome needs a continuous process. Therefore, the transaction is a continuous legal behavior. If the legal behavior is terminated due to force majeure, reinstated legal consequence couldn't be reached when contracting parties terminate the contract by negotiation or the contract is terminated according to termination conditions of engagement, as a result, remedial measures should be adopted such as compensating the loss based on the selection.

## 2 Necessity of regulating forestry carbon sequestration transaction legally

**2.1 Necessity of making and utilizing contract model text** Contract model text, according to contract law, is defined by the third party who does nothing with contract (for instance, government sections, industry association, chamber of commerce, consumers' association and so on) based on having the demonstration effect legal rules and conventions. First of all, model text has a strong demonstration effect on certain oft-repeated cases in forestry carbon sequestration transaction and it plays a guiding role in determining the rights, duties of the parties, performance ways, undertaking ways of responsibility and disputes settlement ways. Next, based on the model text, parties have the reference as they enter into a contract, and thus they are unnecessary to negotiate about each contract term, which reduces the negotiation fees. Thirdly, the procedure of forestry carbon sequestration projects is complicated, including the procedures such as project design, approval of national authorities, project authorization, registration, implementation and detection, inspection and certification, issuing emission reduction, in which, project design includes many requirements such as overall description of project, operation period and crediting period<sup>[6]</sup>. Contract model text could simplify the measurement and inspection procedures of the transaction, and standardize the procedures, enabling the project developers to complete the file design independently and reduce the consulting fees.

**2.2 Necessity of determining the responsibility of subjects in forestry carbon sequestration transaction** Laws concerning forestry carbon sequestration transaction emphasize the equity principles, reasonability and valuable consideration, and with its publicity, normalization and enforceability, the forest farmers, state-owned forest farms and afforestation corporations are able to understand carbon sequestration market, which is favorable for determining the responsibility of transaction subjects reasonably and ensuring the implementation through enforcement. The benefit distribution and definition of responsibilities and rights lack the legal regulations between market subjects of forestry carbon sequestration transaction and between market subjects and government. Firstly, the rules concerning risk bearing between market subjects are deficient. The sellers should invest some money in the initial period of projects. If the registration is failing, the capital can't be recovered, and thus the risk bearing should be examined and approved before the transaction becomes effective. The buyers should not only pay the whole fees of carbon sequestration in the ex-ante transaction, but also take part in the whole process of project, which will lead to high risk, i. e. the risk sharing of fees should accord with equity principles. Secondly, the profit distribution between Chinese government and project implementing parties, the determination of types, ratio and paying ways of tax and fee, etc. . Thirdly, intermediaries provide services in the aspects of environment, finance and laws for the implementation party of forestry carbon sequestration project, so the responsibilities of entering and exiting project as well as that of breaking a rule should be determined. All these need the regulation and restriction of laws and the implementation rules.

**2.3 Necessity of providing reference for environmental protection and other fields** As a kind of new compensation mechanisms, forestry carbon sequestration transaction could provide reference for relevant fields. Firstly, ecological benefit compensation of forestry carbon sequestration has provided helpful references for current ecological compensation mechanism of public welfare forest. Forest ecological benefit compensation mainly realizes partial subsidy through direct financial payment, which is a government behavior. However, forestry carbon sequestration transaction plays its role through market mechanism, and this compensation has beneficial nature. Secondly, ecological benefit compensation of forestry carbon sequestration has provided a new thought for promoting emission right trading. Emission right trading has been on trial for a long time, yet not been expanded to a larger scale due to the imperfect market environment. And a relative developed carbon sequestration market mechanism could provide thoughts for the trading. Finally, carbon sequestration transaction mechanism could provide reference for the conservation of international freshwater resources, especially for benefit equilibrium of water resources between upstream and downstream countries of national boundary rivers and international rivers<sup>[7]</sup>.

**2.4 Necessity of developing the voluntary market of forestry carbon sequestration transaction** Forestry voluntary carbon sequestration transaction is a kind of transactions oc-

curred between market subjects (Companies, governments, non-government organizations and individuals) who purchase credit limit of carbon not for realizing prescribed goals of *Kyoto Protocol*<sup>[3]</sup>. The transaction needs some adjustment rules to regulate voluntary market of forestry carbon sequestration transaction. The regulation of subjects, objects and transaction rules of the voluntary market will certainly enable the whole forestry carbon sequestration market to develop into scale economy.

### 3 Construction of legal system of forestry carbon sequestration transaction

**3.1 Determining the subjects of legal relationships in forestry carbon sequestration transaction** Subjects of legal relationships in forestry carbon sequestration transaction include buyers and sellers. In the non-voluntary market transaction of international forestry carbon sequestration, the country has principal qualification. The buyers could only be concluded as the governments and the carbon funds belonging to world banks in Attachment I of *Kyoto Protocol* while the sellers mainly are developing countries. Many enterprises believe that the emission reduction of greenhouse gases will be carried out and the emission reduction cost of carbon dioxide in the future will be high. Therefore, in order to avoid risks and take a dominant position in market transaction, the enterprises take part in current carbon sequestration market transaction positively<sup>[8]</sup>. Actual providers of carbon sequestration transaction are owners and operators of forest generally. In China, the providers could be individual farmers, collective forest farms and other entities.

**3.2 Determining the objects of legal relationships in forestry carbon sequestration transaction** The objects of legal behaviors in legal theory should be the objects referred to rights and obligations of subjects in the legal relationships. Forestry carbon sequestration is the object of forestry carbon sequestration transaction, which is quantized as emission reduction unit of Kyoto, i. e. the unit that some organization promises to utilize for completing the emission restriction of *Kyoto Protocol*. Due to the externality of ecological benefit, carbon sequestration of present forest becomes "public goods" without clear property rights<sup>[9]</sup>. Under the background of *Kyoto Protocol*, the departments which need greater space to emit carbon dioxide are inevitably to acquire carbon emission right through purchasing. Therefore, forestry carbon sequestration relating to carbon emission right internationally becomes a property necessarily. As far as the national environment management is concerned, it refers to the whole forest resources; as far as the single forestry carbon sequestration transaction is concerned, it's the specialized forestry carbon sequestration, and the possession of forestry carbon sequestration equals to the possession of property rights. When forestry carbon sequestration is regarded as the object of legal relationship, it should have considerable certainty and concreteness.

**3.3 Determining the third party of forestry carbon sequestration transaction** The third party of forestry carbon sequestration transaction mainly includes brokers and measurement certification authorities<sup>[8]</sup>. The principal effect of brokers

is searching for suitable providers and purchasers of carbon sequestration. And the measurement certification authority is the deliberation and inspection institution which undertakes the responsibility of analyzing the feasibility of carbon sequestration and baseline design. This paper believes that the brokers should be restricted by the following points. Firstly, the brokers offer the chances or the medium services of concluding transaction; secondly, the brokers should work based on the instructions and requirements of clients (buyers' entrustment or sellers' entrustment); thirdly, the brokers should be the specialists with capacity for civil conduct and responsible for the factuality and effectiveness of inspection results; finally, the fees for the brokers should consider that if they contribute to concluding the transaction of forestry carbon sequestration. If the transaction is concluded, the brokers could ask a party or contracting parties to pay the rewards for informing the chances of concluding forestry carbon sequestration transaction or providing medium service. The expenses of transportation, board and lodging, public announcement, printing and inspection used for concluding the transaction should be paid by the brokers, because these expenses have been included in the rewards. Oppositely, if the brokers haven't helped to conclude the transaction, he could ask a party or contracting parties to pay the expenses without any rewards.

**3.4 Determining the effective elements of legal behaviors in forestry carbon sequestration transaction** The establishment of legal behaviors in forestry carbon sequestration transaction, as same as ordinary civil legal behaviors, should go through the stages of offer and acceptance. After the establishment of the behaviors, it should be considered that whether these behaviors are effective. The effective elements of forestry carbon sequestration transaction should include 4 points. The first is the behavior ability of parties. The behavior ability of government represented for the nation to conclude forestry carbon sequestration transaction should take the rules of *Kyoto Protocol* as the standards and the ability of voluntary market subjects should in accord with the requirements of civil law for natural person and juridical person. The second is the factuality of the declaration of intention. It is the basic rule for the effectiveness of civil legal behavior. Although the parties don't have the complete liberty of intention (due to the restriction of related rules) in the legal behaviors of forestry carbon sequestration transaction, the effectiveness should be the results of fair negotiation between parties. If the declaration of intention is untrue, namely, cheating, duress and so on, the behavior will be ineffective or its effectiveness will be uncertain. The third is the validity of transaction. That is to say, the transaction conforms to the rules of current national laws or doesn't contradict current laws. The following behaviors are ineffective, such as the behaviors harm others' benefits due to malicious collaboration, the behaviors damage the public benefits under the guise of legitimate acts concealing illegitimate purposes, or the behaviors break the compulsory rules of laws and administrative regulations. The forestry carbon sequestration transaction should conform to the goals of public benefits in China without contra-

dicting public orders in that it concerns about the benefits of a third party or the public. The forth is the peculiar effective elements. Peculiar effective elements such as occurrence of conditions attached to the transaction and approach of the deadline are applicable to the behaviors of forestry carbon sequestration transaction.

**3.5 Determining the transaction price** Transaction prices include market regulation price, government-fixed price and government guiding price. Market regulation price is the basic form of price. The nation interferes with the prices of some commodities by setting government-fixed price and government guiding price directly for social public benefits. Government guiding price denotes that according to the rules of price law, government price administrative departments or other related departments guide operators to set a price in terms of the standard price and its floating range stipulated based on pricing authority and scope. Transaction price of forestry carbon determines the benefit distribution between contracting parties of the transaction and the computation of ecological benefit compensation. Therefore, the price of forestry carbon sequestration transaction should adopt government guidance without conforming to the transaction principles of common commodities. But guiding prices among different regions should be determined combining with the actual conditions of different regions, the improvement of local community life led by carbon sequestration projects, the protection degree of biodiversity, afforestation cost and so on, instead of being determined with the same price measurement.

**3.6 Determining the performance modes of the transaction** Performance modes of forestry carbon sequestration transaction mainly include ex-ante transaction, ton-year transaction and ex-post transaction. Ex-ante transaction means that before the implementation of projects, the buyers (or investors) have paid the capital of the whole project or the price of agreed carbon sequestration, i. e. the buyers, having pre-payment obligation, become the actual owner of carbon sequestration and take part in the whole process of the project; ton-year transaction means that the buyers of forestry carbon sequestration transaction pay money annually according to annual actual increase of forestry carbon sequestration multiplying by agreed price, and both the contracting parties have simultaneous performing obligation; ex-post transaction means that the sellers of carbon sequestration design, apply, finance and carry out forestry carbon sequestration projects, and they search for the buyers of carbon credit to make a deal after acquiring Certified Emission Reductions (CER), i. e. the sellers have the pre-performing obligation<sup>[3]</sup>. Therefore, subjects in different performance modes have different counterargument rights based on the contract law. Investors in ex-ante transaction enjoy the counterargument right for security, both the contracting parties in ton-year transaction enjoy counterargument right of simultaneous performance, and the buyers in ex-post transaction enjoy pre-performing counterargument right.

**3.7 Determining the benefit distribution among subjects** First of all, the risk distribution in forestry carbon sequestration transaction

should be determined. Risk means the loss caused by damages and losses of subject matters due to the inscrutable faults. The basic principle of the transfer of damages and losses risks for subject matters in contract is transferring at the beginning of the payment. In the transaction, the growth circle of forest is very long, and forestry production benefit will show great uncertainty due to the impacts of plant diseases and insect pests. During the period, international carbon sequestration market may change a lot. If the payment is defined as the expiration of performing period according to basic principles of the contract law, the risks of carbon sequestration forest are transferred when the performing period expires, which means the sellers should undertake the damages and losses risks of forest in next few years or even more than 10 years, and thus the risk of sellers are too high. Next, examination and approval risk before the effectiveness of transaction should be determined. If both sides have the intention to make a deal, the examination and approval risk before the effectiveness of transaction should be shared reasonably. Technical risk is shared reasonably if there isn't an agreement referring to the rules of commissioned technical development contract in technical contracts. The risk of not being approved which was regarded to be approved should be shared instead of being undertaken by one side. Again, the risk bearing of rewards of forestry carbon sequestration project can be determined referring to the rules concerning risk bearing of rewards in lease contract. In the operation process of forestry carbon sequestration project, once the risk occurs, the money paid by the buyers should be returned by the sellers, which accords with the legal principle of the conformity of rights and duties. It's considered that risk bearing of expenses doesn't have retroactive effect, that is to say, the money which has been paid already will not be returned while the money not paid before can be passed.

Regarding benefit distribution between Chinese governments and implementing subjects of projects, the determination of types, ratio and paying ways of tax and fee should consider the effects of ecological benefit compensation of forest and its social public effects. Therefore, consideration such as preference and remission should be provided in the aspect of tax with regard to the benefit of contracting parties.

**3.8 Undertaking modes of legal responsibilities of forestry carbon sequestration transaction** Undertaking of liabilities for breach mainly includes the main modes of actual performance, penalty, compensating the loss and earnest money, and the additional modes such as repairing, replacing, recasting and returning goods. Breach of forestry carbon sequestration constitutes a kind of liability for breach. Its undertaking of liabilities for breach is not exactly as the common ones. Firstly, idea of law in China emphasizes that undertaking modes of liabilities for breach should consider if the actual performance can be adopted beyond all in that actual performance could mostly reflect transaction goals. However, the technicality and complexity of forest resource have determined its polytrophe, which may easily lead to the impossibility of actual performance or inconsistency with transaction goals. What's more, the rule of re-

moving the priority of transaction also restricts the applicability of actual performance principles. Secondly, compensation for damages is a kind of legal undertaking modes of liability for breach, usually taking the mode of monetary compensation. This is because most of the civil laws aim at obtaining economic benefits and monetary compensation which is convenient and simply conforms to the goal. Besides the goal for economic benefits, forestry carbon sequestration aims at environmental benefits in most cases, once the rights are invaded, the economic compensation can't be given entirely and reasonable compensation modes can't be determined. Therefore, the undertaking mode of substituting performance can be adopted in forestry carbon sequestration transaction<sup>[10]</sup>.

**3.9 Disputes settlement of forestry carbon sequestration transaction** According to rules of the contract law, the conventional ways of disputes settlement in contracts include mediation, arbitration and lawsuit. Firstly, mediation is a way without legal enforcement, so it is not applicable to forestry carbon sequestration transaction with foreign affairs. Folk arbitration can't meet the requirements of authority and fairness in disputes settlement of forestry carbon sequestration transaction. For one thing, folk arbitration is not suitable to restrict the national will reflected in the transaction. For another, so far as administrative arbitration system with government involvement is concerned, it's hard to be fair if government is a party of forestry carbon sequestration transaction. International commerce arbitration could overcome the defects of folk arbitration, which is an available way for disputes settlement. Secondly, lawsuit is a kind of effective dispute settlement way and the fair settlement of disputes is ensured through judicial authority. Both the parties based on forestry carbon sequestration transaction are a kind of contractual relationship, similar to equal rights relationship. Therefore, special lawsuit system suitable for disputes of environmental resources contracts such as disputes of forestry carbon sequestration transaction should be designed based on the civil suits system. Also, besides the civil suits system, special rules being different from civil suits system can be added for settling disputes of environmental resources such as disputes of forestry carbon sequestration transaction.

## References

- [1] ZHOU YK. Suggestions on active participation in carbon trade in China[J]. Cross Century, 2009(3):17. (in Chinese).
- [2] LI NY, SONG WM, ZHANG SD. State and trend of forestry carbon sequestration management in China[J]. Green China, 2005(6):23-26. (in Chinese).
- [3] CAO KD. Study on the financing transaction mechanism of Chinese forestry carbon sequestration market[D]. Beijing: Beijing Forestry University, 2008. (in Chinese).
- [4] YANG H, SHEN H. Legal problems of carbon trade[J]. Journal of Shanghai University of Political Science & Law, 2008(2):104-108. (in Chinese).
- [5] DENG HF. Developing carbon trade and improving climate system[J]. Life World, 2009(2):1. (in Chinese).
- [6] ZENG Q. Exploration of forest ecological compensation in forestry carbon sequestration[C]. International Symposium on Evaluation and Compensation of Ecosystem Services, 2008. (in Chinese).
- [7] PAN X, LUO X. Can carbon trade become the mainstream of CDM? [N]. Science Times, 2008-01-02. (in Chinese).
- [8] LI JH. Studying on the trading mechanism, surveying and cost-price of carbon sequestration forest[D]. Nanjing: Nanjing Forestry University, 2008. (in Chinese).
- [9] WEI DS. Afforestation and greening and climate change: carbon sequestration research [M]. Beijing: China Forestry Publishing House, 2003. (in Chinese).
- [10] LV ZM, LIU CX. On the institution of environment contract[J]. Modern Law Science, 2003(3):104-112. (in Chinese).
- [11] LI NY, WANG CF, CHEN XT. Discussion on international carbon market and forestry carbon sink trade in China[J]. China Development, 2008, 8(3):9-12. (in Chinese).
- [12] MA GZ. Discussion on forestry carbon sequestration projects in China under CDM[J]. Journal of Southwest Forestry College, 2008, 28(4):20-23. (in Chinese).
- [13] WU LC, TAO D, ZHANG SW, et al. Development trend of forestry carbon sequestration[J]. Jiangxi Forestry Science and Technology, 2007(5):45-47. (in Chinese).
- [14] JIN W, WEN B, QIN G. Analysis of the economic attribute of forestry carbon sink[J]. China Forestry Economy, 2006(4):14-16. (in Chinese).
- [15] ZHANG YZ. International trading of carbon sequestration in forestry and opportunity of development for forestry in Sichuan Province [J]. Journal of Sichuan Forestry Science and Technology, 2006, 27(2):49-53. (in Chinese).

## 我国林业碳汇交易法律制度的构建

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**摘要** 介绍了中国林业碳汇交易的法律性质, 即林业碳汇交易是一种要式、诺成、有偿、双务、继续性法律行为, 遵循了意思自治原则, 具有合同的性质。分析了对林业碳汇交易进行法律规制的必要性: 一是制定和使用合同示范文本的需要; 二是确立林业碳汇交易主体权责分配的需要; 三是为环境保护其他领域提供参考的需要; 四是发展林业碳汇志愿市场的需要。基于此, 从9个方面探讨了中国林业碳汇交易法律制度的构建, 即确定林业碳汇交易法律关系的主体、客体、交易第三方, 确定林业碳汇交易法律行为的具体生效要件、交易价格、交易的3种履行方式、交易的违约责任承担方式和交易纠纷解决途径, 明确各主体之间的利益分配。

**关键词** 林业碳汇; 交易; 法律制度