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Local Government-Led Climate Governance and Social Inclusion: The Case Study of J County in China

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Abstract

Social inclusion in climate governance is related to social justice and inclusive climate justice explicitly aims to open up climate policy and politics to a broader range of actors and voices, especially those most exposed to climate-related injustice. This article employs qualitative research methods to comprehensively examine the issue of social inclusion in the context of local government-led climate governance in J County, Zhejiang province, China. The study finds that the climate governance in J County demonstrates a certain degree of social inclusion in terms of participation by local farmers and benefit distribution. However, this social inclusion has a hidden fragility: It is limited and unstable. The limited social inclusion is manifested in the fact that, throughout the entire process, bamboo farmers were unable to participate due to their lack of a comprehensive understanding of the climate governance action plan, and the distribution of climate governance benefits is characterised by a lack of transparency in the design process and uncertainty regarding potential benefits. The unstable social inclusion is manifested in the great differences in the environmental governance actions of J County in different periods, especially regarding public participation and benefit distribution. Fundamentally, this is mainly due to the significant influence of China's unique top-down performance evaluation system on local government-led climate governance actions in J County. Social inclusion in local government-led environmental governance may again be marginalised if the top-down performance evaluation indicators faced by local governments change in the future.

Keywords

climate governance; local government-led; performance assessment; social inclusion; forest farmers

1. Introduction

The issue of social inclusion in climate governance is of significant importance as it pertains to whether different regions and populations can achieve full participation and equitable sharing of the benefits of climate governance. As the world's largest carbon dioxide emitter, China's proactive attitude and efforts in climate governance are paramount for global climate governance. However, due to the unique characteristics of its national context, climate governance in China faces distinct challenges in terms of social inclusion. Since the 75th United Nations General Assembly, when the Chinese government proposed the goals of peaking carbon dioxide emissions before 2030 and achieving carbon neutrality before 2060, reducing carbon emissions and increasing carbon sequestration has become a national strategic priority for China. It has also become a political task for local governments at all levels. Under the guidance of national macro-level policies and the transmission of top-down pressures, some economically developed regions along China's eastern coast have taken the lead in exploring climate governance actions. Although these regions consciously involve societal participation, they fundamentally follow the traditional government-led environmental governance model, wherein the public, enterprises, and social organisations often find themselves in a position of being "governed" that affects the social inclusion of the environmental governance process and the results. However, this problem has not yet attracted full attention from academic circles.

This article is based on qualitative research and discusses a climate governance action known as the Bamboo Carbon Sequestration Reform conducted in J County, Zhejiang province. This initiative has emerged in the context of China's "dual carbon" strategy and serves as a typical case of local government-led climate governance in China's eastern coastal regions. Zhejiang province is one of China's most economically developed provinces. J County is not particularly outstanding in its economic development but is well-known for ecological governance and green development. In 2021, within the broader macro-strategic context of the nation advocating for the "carbon reduction and carbon sequestration" strategy, the local government of J County in Zhejiang province took the lead in initiating the Bamboo Carbon Sequestration Reform, aiming to restore the ecological environment of bamboo forests and increase their carbon sequestration capacity through a cooperative collective management model. Since the implementation of China's forestry responsibility system in the 1980s, a framework of individual household contracting for forested areas and independent family operations in bamboo forests has been in operation in China's forestry regions. However, with the changing local environmental policies and market demands, the price of bamboo has continued to decline, weakening forest farmers' enthusiasm for this kind of work. J County faces the challenge of bamboo forest mismanagement and a decline in carbon sequestration capacity. To address this issue, J County has attempted a collective operating model with bamboo forest farmers' cooperatives as the organisational structure. They have mobilised approximately 49,000 forest farmer households in the county to first transfer the management rights of bamboo forests to village-level farmer professional cooperatives and then further transfer them to the county-owned enterprise LS Company for the collective production of bamboo forest industries. During this process, the local government's financial department guided banks to provide low-interest loans to LS Company. Additionally, in collaboration with LS Company, they undertook the collection, verification, and trading of carbon sequestration products. Ultimately, a certain percentage of earnings from the Bamboo Forest Carbon Sequestration Reform is returned to the villages and forest farmers.

This study aims to provide a comprehensive examination of the issue of social inclusion within the context of local government-led climate governance actions in J County. To evaluate this case more objectively, we assess the positive efforts and partial achievements made in terms of social inclusion within climate governance actions advocated by the central government and led by local governments. On this basis, we focus on analysing the local government-led climate governance action in J County and the lack of social inclusion, such as the participation of forest farmers and benefit distribution, which reveals the hidden fragility of this social inclusion. The article begins by introducing the most fundamental aspects of social inclusion within the climate governance field. It then analyses the trend towards social inclusion of the climate governance action in J County, focusing on the participation and benefit distribution among local forest farmers in the context of local government-led climate governance actions. Lastly, the study further discusses the fragility of social inclusion in local government-led climate governance under China's unique system and its causes.

2. Climate Governance and Social Inclusion

Social inclusion is a concept that lacks a unified definition since different scholars interpret it in various ways. However, it is generally recognised that public participation is a central element (Capetola, 2008; Liu, 2022; Xu, 2015). Public participation is crucial in climate governance. This means respecting the public's right to be fully engaged in matters relevant to their own lives and recognising the benefits of their full participation. Therefore, in this climate governance research in J County, we focus on two main aspects of social inclusion: the full participation of forest farmers and the distribution of benefits to the forest farmer group.

Research has shown that public engagement in climate governance is severely restricted, lacking attention to social inclusion and broader equity (Armitage et al., 2017; MacCallum et al., 2014; Ojha et al., 2016; Ziervogel et al., 2014). Valuing public engagement in climate governance, especially involving local communities, means actively embracing local knowledge, opinions, and aspirations (Green et al., 2012). Local people have a better understanding of local conditions, localised knowledge, and relevant, advantageous resources, which is beneficial for formulating local climate governance policies. However, the right to participate in climate governance is not equally distributed across different levels of governance (Brugnach et al., 2017). Local society and local people are often excluded from the governance structure, which inadvertently weakens local people's risk resilience and ability to develop their livelihoods, especially for vulnerable groups. Therefore, in climate governance, it is crucial to actively empower local communities and fully respect their right to expression. Particularly, their prior consent is required before climate governance activities can be carried out on their territories (Whyte, 2013). This approach ensures meaningful public participation and enhances social inclusion.

Achieving equitable distribution of benefits for the public in climate governance is crucial. In reality, due to disparities among actors with different rights, fair distribution of benefits in climate governance is often not fully realised. In fact, policy practices nominally centred around equity in climate governance may, in practice, exacerbate inequalities (Sapkota et al., 2018). History has shown that unless poor and vulnerable groups can effectively organise and raise their voices, it is challenging for them to obtain a fair share of resources. This also means that when addressing the world's most challenging global climate issues, it is crucial to ensure that the voices of ordinary people, including men, women, youth, elderly, farmers, and various other groups, are heard loudly and clearly, and respected (Toulmin, 2010). Therefore, we believe that

emphasising the participation of local communities in climate governance, particularly focusing on their substantive participation in climate governance actions and providing policy recommendations, as well as ensuring equitable distribution of benefits in climate governance among local communities, is conducive to constructing an inclusive environmental governance framework and promoting inclusive climate justice (Newell et al., 2021).

This study attempts to build upon existing research findings to objectively evaluate the proactive efforts made by the local government in J County regarding public participation and achieving a more equitable distribution of benefits within the context of local government-led climate governance action. This represents a significant advancement compared to previous climate governance initiatives, indicating a positive breakthrough by local governments in China. However, on this basis, we focus on analysing the limited and unstable characteristics of such social inclusion, revealing core issues surrounding China's unique top-down performance evaluation system.

3. Methods

Given that the primary objective of this study is to comprehensively examine social inclusion issues within local government-led climate governance in J County under the backdrop of China's "dual carbon" strategy, a qualitative research approach is more appropriate. We gather experiential data through in-depth interviews and participatory observation to gain an interpretive understanding of the social actions of key stakeholders in climate governance. Social actions exhibit complex internal structures (Parsons, 1937). Understanding social actions requires close attention to the means and objectives of their actions, the values that drive them, the emotional background behind the actions, and the subjective "meaning" attributed to them by the actors involved (Weber, 1978). From March to June 2023, we conducted face-to-face, in-depth interviews with various stakeholders in J County, including local government officials, business leaders, community leaders, and forest farmers. Interviews with local government officials involved key personnel from the County's Ecological and Environmental Bureau, the Forestry Bureau, the Government Financial Services Center, the Development and Reform Commission, and four staff members responsible for forestry work in three forestry towns. We also conducted interviews with the management personnel of the county-owned enterprise LS Company, which is responsible for collecting and trading carbon sequestration in bamboo forests. Forest farmers were the most important subjects of our research. To ensure a comprehensive understanding, we conducted field surveys in four different types of villages selected based on their bamboo forest management status. To gain the forest farmers' trust, we lived in the villages for an extended period. During this time, we observed their production and daily life and learned about their values, attitudes towards bamboo forest management and ecology, and their views on the government's governance actions. In total, we conducted interviews with four community leaders, six other village officials, and 35 forest farmers, making efforts to ensure a balance in age, gender, and family economic status among the forest farmers interviewed. We designed semi-structured interview outlines tailored to the social characteristics of each interviewee to ensure each interview lasted between two to three hours. The diverse selection of interview subjects aimed to cross-validate critical information and ensure the accuracy and reliability of the data collected.

In addition, this study used literature analysis to grasp the local historical and social context. On the one hand, we collected and read documents such as city and county annals, statistical yearbooks, and other literature

to gain insights into the historical development of the local bamboo industry, its current phase characteristics, and the local cultural background. On the other hand, we gathered and analysed policy documents issued by the local government to systematically understand the policy orientation towards environmental governance in the bamboo industry over the past two decades. Additionally, we examined the policy design regarding bamboo-related issues in climate governance, such as bamboo forest carbon sequestration and bamboo forest management in recent years.

4. Climate Governance Towards Social Inclusive and Its Phase-Wise Effects

J County is located in the northwest of Zhejiang province, upstream of China's fifth-largest freshwater lake, Lake Taihu. It is renowned for bamboo, with a bamboo forest area of 1.011 million acres in 2022. Since the 1980s, J County has vigorously developed the bamboo processing industry, capitalising on its abundant bamboo resources. As one of the key industries in J County, the bamboo industry once accounted for 20% of the national bamboo industry output value with only 1.8% of the national bamboo production. However, this development has come at a significant environmental cost. During the late 1990s to the early 21st century, the pollution caused by the bamboo product processing industry in J County and other industrial pollution resulted in severe water contamination in the West Tiaoxi River, a crucial water source for Lake Taihu. The situation attracted significant attention from the central government. The top-down environmental governance pressures have driven the local government in J County to implement mandatory environmental governance measures. Within a short span, many energy-intensive and heavily polluting bamboo product processing enterprises were shut down, severely impacting the livelihoods of the forest-farming community. Furthermore, coupled with a reduction in the demand for bamboo products in the market, declining bamboo prices, and increased operational costs for bamboo forestry, a significant portion of forest farmers shifted towards alternative livelihoods. This resulted in a substantial abandonment of bamboo forests, with peak abandonment rates reaching as high as 20%. The bamboo species in J County is Moso bamboo, a member of the Poaceae family. It grows rapidly, and forest farmers need to regularly cut and manage large bamboo culms while preserving small ones every two years to ensure the continuous renewal of bamboo forests. The growth cycle for Moso bamboo is approximately eight years. If not cut and managed on a schedule, Moso bamboo can die off on a large scale. The abandonment of 20% of the bamboo forest area in J County has led to the deterioration of the bamboo forest ecosystem and a reduction in its carbon sequestration capacity. This presents a challenge for the local government, which is trying to restore the ecology of the bamboo forests, revitalise the bamboo industry, and help forest farmers increase their income.

To tackle this challenge, local communities in J County have spontaneously explored breakthrough pathways. Among these efforts, H Village took the lead in 2015 by establishing a professional cooperative for bamboo forestry, which set up a collective management model for bamboo forests. The cooperative expanded the bamboo sales market, engaged effectively in price negotiations in market transactions, and ultimately distributed the benefits to forest farmers based on their shares in the cooperative. The operational model in H Village has become widely known in J County and has garnered the attention of the local government. In 2021, the central government issued two policies: (a) Opinions on the Complete and Accurate Implementation of the New Development Concept to Achieve Carbon Peak and Neutrality Goals and (b) Opinions on Accelerating the Innovative Development of the Bamboo Industry. These policies provided a transformation framework for the local government in J County. Taking this as an opportunity and drawing inspiration from the cooperative operation of bamboo forests in H Village, the local government in J County

initiated a climate governance action centred around the Bamboo Forest Carbon Sequestration Reform in 2022. This action includes objectives such as increasing carbon sequestration in bamboo forests, revitalising the bamboo industry and enhancing the income of bamboo farmers throughout the entire county.

In the context of the lack of proactive management of bamboo forests by most forest farmers in J County, the local government has attempted to promote reform in forest tenure systems. They have implemented unified management of bamboo forests and established a process system encompassing "bamboo forest land transfer, bamboo forest collateral loans, bamboo forest carbon sequestration resource collection and storage, carbon sequestration product trading, and benefit distribution" (Figure 1). In the first step, the local government facilitated the establishment of 119 joint-stock professional cooperatives for Moso bamboo in villages with bamboo forest areas exceeding 1,000 mu (about 66.67 hectares) in J County. Local government officials and village leaders mobilised forest farmers hierarchically from the top down to transfer their bamboo forests to these village cooperatives. To maximise the benefits of unified management of bamboo resources in J County, the local government further encouraged all 119 villages to collectively transfer all bamboo forests to the county-owned enterprise LS Company in the name of cooperatives. As of the end of 2022, the bamboo forest transfer rate in J County had reached a remarkable 99%, with a transfer period of 30 years.

The rapid and efficient bamboo forest transfer work is closely related to the organisational structure of local administration in China. In general, at the local government level, the county-level government plays a crucial role in implementing various national policies. County-level governments must adhere to the implementation of higher-level policies while also having a degree of autonomy. The actions taken by county-level governments are closely tied to the performance assessment indicators from higher-level governments. Township-level governments primarily follow the specific tasks assigned by county-level governments, driven by the pressure from above. Local organisations within villages, particularly the "village committees" (the Communist Party Village Branch Committee and the Villagers' Self-Government Committee), are often more influenced by the township party committee and government rather than the villagers themselves in their practical work. Leveraging this characteristic of China's local administration organisational structure, J County's various government levels collaborated with the "village committees" of 119 villages, making it very smooth and efficient to mobilise forest farmers to transfer their bamboo forests to cooperatives.

In the second step, the local government's financial department guided banks to introduce financial products called "carbon sequestration storage loans." LS Company used the bamboo forest resources from all

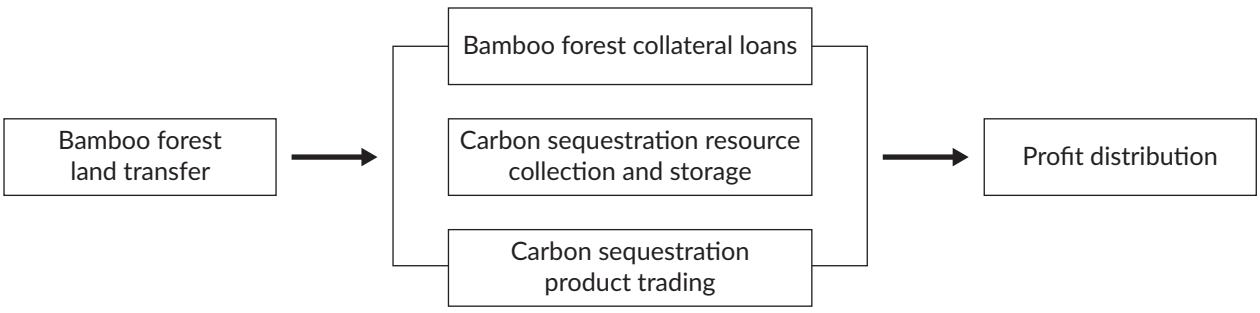

Figure 1. Flowchart of the Bamboo Carbon Sequestration Reform in J County.

119 Moso bamboo professional cooperatives in the county as collateral capital to apply for these low-interest loans from banks. Currently, 103 billion yuan in low-interest loans with a 30-year term has been fully secured. According to local policy, bamboo forest rent payable to forest farmers included in the loan is managed by LS Company and used for investment and operation. After the 30-year term, the bamboo forest rent will be distributed to the forest farmers. During these 30 years, LS Company pays a fixed interest to each village cooperative annually, which the cooperatives use to provide dividends to and support collective production by the forest farmers. In the third step, LS Company subcontracts the bamboo forests to each village cooperative for operation. LS Company funds the villages for building forest roads, bamboo decomposition points, carbon sequestration monitoring flux towers, and other infrastructure. It is also responsible for supervising the bamboo forest management by the cooperatives to ensure the carbon sequestration levels of the bamboo forests. The fourth step involves the local government leading LS Company in establishing the Bamboo Carbon Sequestration Storage and Trading Center. The centre collects carbon sequestration resources from each village cooperative, and after verification by a third-party organisation, these resources are used in transactions with carbon-purchasing companies. Once LS Company covers the principal and interest, 70% of the net proceeds from carbon sequestration trading will be distributed to the cooperatives for dividends in the future.

Overall, compared to J County's previous environmental governance models, with the continuous adjustment and optimisation of China's environmental governance structure, the local government-led climate governance actions in J County have made certain positive efforts in terms of social inclusion. This is specifically evident in two aspects: "involvement of forest farmers" and "benefit distribution."

Firstly, the local government has shown a trend towards accommodating forest farmer participation. Through field investigations, we learned that, especially in the top-down mobilisation of bamboo forest transfer work, local government officials and village leaders emphasise the importance of explaining the relevant regulations and price standards for bamboo forest transfers to forest farmers. They also focus on collecting feedback from forest farmers regarding benefit distribution schemes. These issues are negotiated to determine the terms of bamboo forest transfers and benefit distribution schemes. In G Town, a prominent forestry town in J County, the town government, village committees, and Party branches employ a multi-tiered approach to communicate climate governance policies effectively. They organised a series of meetings, including a village party branch secretaries meeting, a village representatives meeting, a village group leaders meeting, and a household heads meeting, to clarify the bamboo forest transfer policy. They placed particular emphasis on addressing issues that are prone to disputes among forest farmers during land transfer:

> We held a total of 65 meetings, both large and small, in our village. Since each household's forest land is located differently, there are significant differences in labour costs. Land located at the bottom of the mountain and close to the road has lower costs, while land on the mountain and far from the forest road has higher costs. Villagers compared and questioned why one household's labour cost was 5 yuan per 100 kilograms while another household's was 4 yuan per 100 kilograms. We evaluated the labour costs for one piece of land six times and continuously for four nights on another piece of land. We pay attention to the villagers' opinions and strive to satisfy them. (Community leader, Ma)

> Village cadres explained the benefits of bamboo forest transfer to us, and then they asked us to raise any disputed issues. They explained each issue clearly. Finally, we went out to promote the policy to

> the villagers. The villagers did their calculations, and most voluntarily chose to transfer their bamboo forests. (Village group leader, Hu)

> The village group leader told us that bamboo forest transfer is good. Many young people from the village work elsewhere, and the elderly find it labour-intensive to manage bamboo forests. Additionally, with the decrease in bamboo prices, we are unwilling to manage them ourselves. Families without enough labour resources in the village are willing to transfer their bamboo forests. (Villager, Yu)

Secondly, the local government recognised the importance of fair distribution of benefits among forest farmer communities. Under the opportunity presented by this climate governance initiative, the local government is actively exploring the integration and development of the entire bamboo industry chain. They established a three-tier system: upstream bamboo preprocessing in villages, midstream primary bamboo processing in townships, and downstream deep processing by enterprises. Compared to individual forest farmer operations, after the Bamboo Carbon Sequestration Reform, forest farmer communities can enjoy three stable sources of additional income:

> 1. Bamboo forest management income: According to the distribution plan, once bamboo has been sold, the cooperative will return the income to forest farmers based on their shares. This income will continue to grow thanks to collective management by the cooperative and the improved bamboo forest infrastructure.

> 2. Benefit-sharing from transferred rents: LS company invests the bamboo forest transfer rents of each village cooperative in a unified manner. It should be further explained that the bamboo forest transfer rent is 400 yuan per acre every year, 12,000 yuan per acre for 30 years, and the bamboo forest transfer rent of J County is 10.3 billion yuan. In order to avoid risks and protect the long-term income of forest farmers, LS company unified investment. Forest farmers get fixed interest from the bamboo forest transfer rents every year until the principal of bamboo forest transfer rents of LS company is returned to the forest farmers after the 30-year circulation expires. LS company mainly invests in bamboo forest transfer rents in the high-quality projects of J County to ensure that the annual rate of 5% income is returned to the village cooperatives and distributed to forest farmers.

> 3. Income from labour for bamboo forest management: Establishing cooperatives across the county has created over 3,600 job opportunities, with an average annual income of around 60,000 yuan per person. Additionally, there may be future income from carbon trading.

According to the local government's estimates, forest farmer households can potentially increase their annual income by an average of 8,000 yuan. Many elderly individuals, middle-aged women, and young people working outside the area interviewed expressed positive views about this potential significant income increase:

> In my family, we used to hire people to manage our bamboo forest, and the income was meagre. Joining the cooperative means I don't have to manage it myself, and I've heard we can earn a good amount every year. This is a good thing. (Elderly individual, Fe)

> I'm usually at home alone, and I hired people to manage the bamboo forest. The income from one acre of bamboo forest is only 200–300 yuan per year. Joining the cooperative is great; I won't have

> to manage it myself, and the village cadres said we'll get more money than we do now. (Middle-aged woman, Lu)

> I work outside. People like us, born in the 1980s, have no idea how to manage bamboo forests and don't want to come back to manage them. Cooperative management of bamboo forests is indeed beneficial. We also hope that the cooperative will take care of bamboo forest management so we won't have to do it ourselves. (Young person working outside, Ga)

The local government takes two approaches to ensuring a fairer distribution of climate governance benefits among bamboo farmers. Firstly, according to the relevant provisions of the Property Rights Law, the government acknowledges the bamboo forest area and ownership allocated to farmers since the 1980s when the forest land was contracted to households. However, due to the fixed nature of the forest land contracting policy, individuals born after the 1980s or new brides from outside the village who married into the community did not receive any bamboo forest allocation. To address the income issue for these individuals and to achieve a fairer distribution, the local government actively explored a "flexible approach" that maximises the consideration of different stakeholders' interests. After repeatedly seeking opinions from local retired officials and village representatives, a benefit distribution plan called Initial Distribution + Secondary Distribution was devised. According to this plan, 60% of the cooperative's total income from the collective operation of the bamboo forest is distributed fairly based on the proportion of bamboo farmers' initial investment in the cooperative. The remaining 40% of the income is set aside as a profit adjustment fund, which is used for benefit distribution among individuals in the village who do not possess bamboo forests and for the construction of public infrastructure in the entire village. This benefit distribution plan is mainly designed to ensure relative fairness among all stakeholders:

> According to the Property Law, distributing benefits based on the bamboo forest area and property rights held by bamboo forest farmers when they join cooperatives is deemed unfair. There are many conflicts among villagers, and in practice, we need to consider the situation in rural areas. Therefore, we have to seek alternative methods, such as the "soil approach," to establish a fairer distribution scheme. (Town government staff, Re)

> In the 1990s, villagers who didn't receive bamboo forests through allocation took legal action to secure their interests, leading to significant conflict among villagers. This time, the village has allocated a portion of the funds to balance income distribution, and it has indeed resolved the issue of unfair income distribution. (Villager, Wu)

Objectively speaking, the climate governance action in J County has demonstrated a certain degree of social inclusion in terms of "bamboo farmers participation" and "benefits distribution" and has achieved some phase results in increasing bamboo forest carbon sequestration, revitalising the bamboo industry, and increasing the income of farmers. Compared to the relatively coercive environmental governance model that J County had in the past, climate governance action shows a trend towards social inclusion. However, we find that this social inclusion inherently hides a fragility: J County's climate governance actions still exhibit the typical features of government-led environmental governance, and there are limited and unstable climate governance actions under administrative intervention.

5. Limited Social Inclusion

As mentioned earlier, the local government has recognised the importance of farmer participation and a fairer distribution of climate governance benefits, particularly in the process of bamboo forest land transfer. However, climate governance is a comprehensive program, and aside from these two aspects, there are still aspects where inclusivity is lacking toward the forest farmers, whether in the initial policy formulation and implementation or in later stages like benefit distribution.

Firstly, the forest farmers cannot participate in the full process or provide feedback since they lack a comprehensive understanding of the overall climate governance plan. Research shows that formulating environmental governance policy requires engaging in public dialogue and collecting opinions (Yang & Kagawa, 2023). However, through investigations, we have learned that when most forest farmers heard about the Bamboo Carbon Sequestration Reform project in J County, it signified that the policy had already been completed under the guidance of the local government. This means that most forest farmers had no opportunity or channel to participate in the initial policy design and assessment. In fact, the farmers' perspectives, opinions, and willingness to participate are crucial in policy design, but it appears that forest farmer involvement in this stage was overlooked. Once the policy had been formed, forest farmers could only choose whether or not to transfer their bamboo forests to participate in the project. However, we also observe that the bamboo forest transfer policy promotion activities were mainly carried out by local government officials and village cadres, with only village representatives and a few ordinary villagers involved. While local government officials and village cadres have made extensive efforts to inform as many ordinary farmers as possible about the policy, their ultimate task is to make farmers aware of the potential benefits of the project and to address their questions to encourage bamboo forest transfers, rather than consulting, collecting, and conveying the will and opinions of the forest farmers:

> I have a dozen or so acres of bamboo forest at home, and it's quite labour-intensive to manage. I transferred it to the cooperative last year. I didn't know about the bamboo carbon sequestration project; I only heard that joining the cooperative has benefits. It's a good policy from above. (Elderly person, Qi)

> The village group leader posted a notice in our WeChat group, telling us that after transferring our bamboo forests to the cooperative, we wouldn't need to manage them ourselves, and the income we'd receive annually would be more than what we earned from managing them ourselves. I didn't want to manage the bamboo forest myself and wasn't making much money from it. This opportunity sounded beneficial, so I signed up for it. (Villager, Ha)

Secondly, the climate governance benefit distribution plan has issues related to its lack of transparency in the design process and uncertainty regarding potential benefits. Through field investigations, we found that while bamboo forest owners can receive investment returns from the bamboo forest transfer rents, the per-acre transfer amount, who controls the transfer rents, and the distribution of investment returns are all determined by the local government. Bamboo farmers are merely informed that their land transfer rents will be collectively invested and managed by the state-owned enterprise LS and that they will receive a certain proportion of the investment dividends each year. The local government justifies this approach by stating that it is from a risk management perspective:

> There are no professional investors in these villages, and if these village communities were to invest these funds, the likelihood of failure would be high. (Government's Financial Services Center official, Ch)

From an objective perspective, local government officials' considerations have their merits. However, this paternalistic and rigid approach by the local government did not consider the preferences of bamboo farmers. It did not provide opportunities for capable villages and individuals in rural areas to participate in the investment. From the expected benefits related to climate governance obtained from the local government and the information provided by government officials in relevant departments, it is evident that the potential benefits of J County's climate governance action are substantial. However, at present, these potential substantial benefits have not been fully distributed to the forest farmers, and it is still expected that, as stated, the cooperative management of bamboo forests by the cooperatives is more profitable for forest farmers than self-management. The actual situation may involve various uncertainties:

> Currently, we haven't received any money, and we don't know when or how much money will be distributed. Village cadres assured us that they would distribute it to everyone. (Villager, Le)

An important unintended consequence is that since the implementation of the Bamboo Forest Carbon Sequestration Reform in J County in 2022, farmers have gradually withdrawn from bamboo forest ecological restoration. For a long time, farmers had been both protectors of the bamboo forest ecosystem and beneficiaries who relied on it for their livelihoods. They have a rich ecological knowledge accumulated through generations of production. Undoubtedly, collective management through cooperatives and employing specialised teams to run the bamboo forests is beneficial for increasing bamboo forest carbon sequestration and improving the income of forest farmers. However, an unintended consequence is that it has artificially severed the close relationship between most farmers, bamboo forest production, and the ecological aspects of the forests. The previously interdependent relationship between farmers and the bamboo forest has been reduced to a singular economic connection. This could lead to a weakening of farmers' ecological responsibilities and the disruption of intergenerational transmission of ecological wisdom:

> We, those born in the 1960s, understand that managing bamboo forests is a skilled activity. Knowledge about techniques like preserving bamboo shoots to nurture bamboo forests, the right timing for hillside cutting and pruning, and the practice of harvesting large bamboo while preserving the small ones every two years is crucial. Now, all the bamboo forests in the village have been transferred to the cooperative. We try to hire older people in the village, who are in their 60s and have technical knowledge, to manage the bamboo forests. However, only a few of these elderly people are directly involved in managing the bamboo forests. At present, most villagers in the village are no longer directly involved in the management of bamboo forests, and these bamboo forest management techniques might slowly fade away. (Cooperative leader, Ga)

In conclusion, the climate governance initiative led by the local government in J County, while demonstrating concern for the involvement of forest farmers and benefit distribution, is severely limited. This limitation arises from both established traditions in environmental governance and the attitudes of the forest farmers themselves. In practice, forest farmers generally show indifference to the unreasonable practices of the local government, and they tend to adopt a simplistic economic rationality, accepting the land transfer if the

income is higher compared to their past individual management. As stated by a local official: "Farmers will calculate, and if it seems suitable, they will be willing to join the cooperative" (Forestry Bureau official, Yu). Under this simplified economic rationality, forest farmers appear to have no intention of engaging in profit negotiations with the relevant departments of the local government. The local environmental governance structure lacks a public participation force to promote climate governance to be more socially inclusive.

6. Unstable Social Inclusion

Compared to the environmental governance implemented in most regions of China in the early 21st century, the local government in J County has shown more consideration for the participation of farmers and the distribution of benefits to them regarding climate governance. This approach is not only influenced by the local government's more inclusive mindset but also rooted in the top-down performance evaluation pressure faced by the local government, which can create underlying instability risks in the social inclusiveness of the locally-led climate governance actions.

The compatibility and parallel operation of the pressure-based system and the personnel assessment system are not only crucial pathways for the central government to achieve national governance goals (Yuan & Jiang, 2023) but also represent a unique governance model for government officials in China (L. A. Zhou, 2007). Under the centralised administrative and personnel system, local governments have long been engaged in an internal "competition" within the administrative system (F. Z. Zhou, 2009). Performance assessments directly linked to promotion serve as a key factor that restrains various governance actions of local governments. Overall, China's top-down performance assessment system has indeed driven actions by local governments and has achieved various results. The local government-led climate governance in J County is a typical case. However, in the pursuit of performance, local governments compete with each other, leading to a certain degree of deviation between the original intentions of national policies and the actual consequences. Looking back at the period since the early 21st century, the approach of J County's local government to social inclusion in environmental governance and even its level of emphasis on environmental governance itself has changed based on different performance assessment indicators at different times in China's environmental governance.

Amid China's current emphasis on global climate governance, the central government has given significant political significance to environmental governance objectives, including the "dual carbon" strategy, common prosperity, and rural revitalisation, among others. Local governments actively establish these objectives as key breakthrough points in performance assessments. Consequently, the local government of J County not only attaches great importance to improving bamboo forest carbon sequestration but also consciously incorporates multiple objectives of social inclusion into climate governance actions, such as the prosperity of forest farmers and rural development in mountainous areas. As a pioneer in such innovative practices in Zhejiang province and even in China, J County has been designated as a national pilot county for forestry carbon sequestration, and its bamboo forest carbon sequestration reform has been recognised as the best practice for common prosperity and rural revitalisation in Zhejiang province. The local government of J County and its key officials have received praise and policy support from higher levels of government due to their innovative practices in the Bamboo Carbon Sequestration Reform:

> In 2021, the bamboo industry development policy led by the state is an important opportunity for our county to carry out the bamboo carbon sequestration reform. In addition, Zhejiang province is

> a national pilot demonstration area for common prosperity. According to the national policy, we will focus on planning together the multiple objectives of the bamboo forest carbon sequestration, common prosperity of forest farmers and rural revitalisation to try to make some achievements. (Government's Financial Services Center official, Ch)

In fact, at the beginning of the 21st century, environmental governance in many parts of China neglected social inclusion. This was because, at that time, China was facing severe environmental pollution, and the central government formulated a one-vote veto system for environmental governance. This meant that if a serious environmental pollution incident occurred in a certain area, the local government's entire year's work would be negated, and the key officials would lose their chances of promotion. To emphasise achievements in environmental governance, local governments have prioritised environmental governance as a top priority. In some cases, they have even taken measures such as the forced and rapid closure of a significant number of polluting enterprises to improve environmental governance indicators, regardless of the willingness of enterprises to transform and upgrade the employment of workers. J County is located upstream of Taihu Lake, and the outbreak of the Taihu Lake blue-green algae incident in 2007 placed the local government under pressure regarding its environmental governance performance assessment. Avoiding the political risks posed by environmental pollution in the short term (Huang, 2020) became the most pressing concern for the J County government. After many bamboo product processing enterprises in J County were shut down, the lack of local enterprises to buy forest farmers' bamboo meant their livelihoods were seriously damaged. This is also an important reason why forest farmers abandoned the bamboo forest and why the bamboo forest is being ecologically degraded. At this stage, the environmental governance of J County lacks full consideration of social inclusion, which mainly stems from the conflict between social inclusion and the need for local governments to demonstrate their environmental achievements:

> In the past, when the environmental protection policy was loose, much of the primary bamboo processing was completed in peasant households. Later, the water pollution problem became serious, the national environmental protection policy became stricter and stricter, and the local governments were under great pressure. From 2007 to 2008, we focused on regulating sewage and shut down more than 100 small businesses in a short time. (Forestry Bureau official, Lv)

> Without consulting the forest farmers, small bamboo processing enterprises in our villages were simply shut down. There was no negotiation; it was an order! (Villager group leader, Pa)

> After the closure of many small bamboo processing enterprises, the price of bamboo was greatly affected. We are slowly becoming unwilling to manage the bamboo forests. (Villager, Wa)

In this context, environmental governance is a social action embedded in specific political, economic, and social systems (Chen, 2020). Social inclusion in J County's climate governance appears merely a byproduct of the local government's pursuit of performance assessment to a certain extent. It lacks the active engagement of governance actors to fully involve the public and ensure equitable distribution of benefits as part of their intrinsic value structure. Moreover, it does not arise from an optimised power structure within the governance framework. As a result, if there is a change in the performance assessment criteria the local government faces, social inclusion in the local government-led environmental governance may once again be marginalised.

7. Conclusion

One significant characteristic of environmental governance in China is the central role of the government. In local environmental governance, local government-led governance is the most important practical form. Compared with environmental governance in other countries, its advantage is that local governments have an extensive capacity to mobilise local society. For example, J County was able to realise the bamboo forest transfer work of the vast majority of farmers in a short period and realise the improvement of carbon sequestration capacity through collective management. However, this form of environmental governance also has unique problems regarding social inclusion, which has a hidden fragility.

Objectively speaking, the climate governance policy in J County, led by the local government, to a certain extent, focused on the involvement of bamboo farmers and fairer distribution of benefits, incorporating the multiple objectives of ensuring prosperity for forest farmers and rural revitalisation, providing valuable domestic experience within China's "Dual Carbon" strategy for achieving local economic growth and social equity. However, this approach is mainly due to carbon sequestration, common prosperity, and rural revitalisation, which are the most important indicators in the top-down performance assessment. This approach differs from the mandatory environmental governance model of neglected social inclusion in the early 21st century. Therefore, J County's local government-led environmental governance action has consistently revolved around different performance evaluation indicators over different periods in China's environmental governance history. Social inclusion in local government-led environmental governance may again be marginalised if the top-down performance evaluation indicators faced by local governments change in the future.

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Conflict of Interests

The authors declare no conflict of interest.

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