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Integrating Farmers into Contract Farming in Peripheral Rural Areas in China

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Abstract: Debates persist regarding the win/lose dichotomy of the implications of contract farming (CF). We address these debates by examining the rule configurations of CF and the power dynamics behind it in a case study in a peripheral rural area in China. Using the Institutional Analysis and Development (IAD) framework, we investigate the rule configurations of land use, labor relations, and value distribution under CF schemes in Sanxing Township, Southwest China. The findings reveal that, although farmers lose control over their land and labor to a certain extent, they can benefit from adjustments in pricing and redistribution rules. Farmers' resistance, village collective organizations, and local political resources contribute to farmers defending their rights in CF. Therefore, we argue that CF is neither an inclusive alternative to large-scale land acquisitions, nor does it always place small farmers in disadvantaged positions. We underscore the significance of moving beyond the "win–win" and "win–lose" debates to focus on the different levels of power struggles when assessing the implications of agricultural development programs.

Keywords: contract farming; land control; win/lose dichotomy; farmers' livelihood; rural China

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1. Introduction

Contract farming (CF) is a specialized form of business agreement between farmers and investors, with a long-standing history in Global South contexts [1–4]. Recently, CF has attracted renewed academic interest as a potential alternative to large-scale land acquisitions under the global land rush [5]. Some researchers portray CF as a "win–win" arrangement that balances the need for agricultural investment with the livelihoods of rural households [6,7]. Through the formulation of a range of rules, CF allows transnational investors to integrate farmers' land and labor into the global value chain without resorting to land acquisitions and labor appropriations [8–10]. However, these "win–win" discourses often ignore the role of power relations embedded in contractual arrangements [11]. Fair CF arrangements need to occur under conditions of power symmetry. In many cases, the asymmetrical power between investors and smallholders creates room for investors to monopolize contractual arrangements [12]. Even without the direct dispossession of farmers, investors can, thus, still manipulate potentially exploitative rules to control the use of land and labor and to marginalize small farmers in the value distribution of CF [13,14]. These hidden agendas may result in a "win–lose" scenario in which farmers are adversely incorporated into the value chain under CF arrangements that offer limited benefits for the farmers involved [15–19].

These debates raise an important but not well-understood question: who dominates the rules of the game, and how do they do it? The peripheral rural areas in China offer highly localized contexts to CF to increase our understanding of these debates beyond the limitations of "win–win" and "win–lose". CF in rural China does not always follow the conventional pattern of transnational investors' dominance. Rather, many CF arrangements are initiated by local small- or medium-scale agricultural companies [20]. These investors often draw on local investment and are integrated into the local economy, thereby diverging from the monopsonistic exploitation of the global agri-capital [21,22]. More importantly, their embeddedness in local contexts does not necessarily make them more equitable. In some cases, local investors could possess advantages in reaping local social and economic resources to influence rule-setting in their favor [23–25].

The power dynamics between local investors and farmers in this context have become more complex, but local farmers in China are not always passive actors. Contract farmers in China come from families that are engaged in independent agricultural production and are endowed with secure land rights [12,26]. Furthermore, local farmers' organizations, such as village collectives and farmers' cooperatives, may introduce new power dynamics between farmers and agricultural companies [27–33]. The complex interactions among these actors result in the continuous shaping and reshaping of the rules of the game and persistently influence the use of land and labor, as well as the opportunities and constraints of farmers in CF. This highlights the need to analyze the changing rules in CF and the power dynamics behind them, thereby promoting a shift from generic interpretations of either "win–win" or "win–lose" to more complex interpretations [34,35].

In this context, we examine how rules within CF schemes are shaped and contribute to diverse effects for farmers in highly localized contexts. We focus on Sanxing Township in Chongqing Municipality, a peripheral rural area where CF is considered a development approach aimed at enhancing farmers' income and contributing to rural revitalization. Specifically, the study addresses the following key questions: How do CF rules evolve through interactions among local actors? How does the evolution of these rules affect land and labor use? How do farmers benefit from or are limited by the evolution of these rules? To answer these questions, we adopt the institutional analysis and development (IAD) framework, which provides a structured approach to tracing rule configurations evolved across different stages of CF and the power dynamics behind it.

2. Theoretical Framework

A widely shared definition of contract farming (CF) is that it represents a form of vertical coordination between agricultural producers and buyers, affecting the production or marketing of agricultural products through contracts specifying market obligations [36]. In contrast to traditional marketing systems, where farmers typically make independent production decisions and sell their products at the spot market at harvest, CF relies on contractual arrangements, whether oral or written, between farmers and agricultural companies before production begins [3,10,27]. These contractual arrangements rely on diverse rules, stipulating production agreements on agricultural inputs and services, as well as the purchase and processing of agricultural products [3,4,12,37]. To examine the changing rules in CF and the power dynamics behind them, we undertook an exhaustive review of the existing literature. Our focus is on debates related to land control, labor exploitation, and value distribution within CF, which constitute core lines of research in our study. Based on this literature review, we have adopted the institutional analysis and development (IAD) framework for the analysis of the case presented in this article.

2.1. Debate Around Contract Farming

Recent research has drawn attention to the diverse outcomes associated with CF when integrating farmers into agricultural value chains. Debates on this matter have centered around three key issues: (a) Is CF an inclusive alternative to large-scale land acquisitions? (b) Is CF a mechanism of labor exploitation? (c) To what extent do farmers benefit from the value distribution in CF?

Proponents of CF argue that, compared to global outright land acquisitions or long-term large-scale leases, it represents an alternative agricultural investment model that enables farmers to retain ownership of their land [9,38]. However, some researchers argue that CF essentially functions as a means of land control that bypasses the costly and tedious legal procedures associated with acquiring formal land ownership [39,40]. Especially in rural China, where land is collectively owned and cannot be traded freely in the market, the separation between producers and their means of production is deterred [41,42]. CF provides a possible approach to gaining indirect control over land without expelling or dispossessing farmers from their property. Small-scale farmers, often grappling with inherent constraints such as small and scattered land plots and limited resources, may increasingly depend on the credit, inputs, and technology provided by CF arrangements to be able to embark on commodity agriculture [4,12]. Despite their formal recognition as landowners, this dependence restricts farmers' autonomy in making independent land-use and management decisions [4,7,43]. Additionally, in certain cases, farmers may face significant financial risks as agricultural companies require ongoing investments in land production and management [14,40,44]. Some farmers may even fall into debt dependency, resulting in the seizure of their land by banks or other wealthier farmers [45]. Therefore, the rules and practices of CF are subject to reinterpretation in various contexts, generating different implications as de facto land control.

The dynamics of land control usually intersect with the ongoing struggles of highly diverse labor relations [40,46,47]. While transnational agricultural companies promise to regard farmers as partners in CF schemes, the contracting relationship enables contractors to access cheap labor indirectly and reduce labor supervision costs [15,35,48]. As agricultural companies concentrate more on value-generating activities both upstream (e.g., providing seeds, equipment, and other inputs) and downstream (e.g., processing and marketing), they increasingly externalize the risks associated with agricultural production onto the farmers [29,47,49]. In this process, CF enables companies to capitalize on the self-exploitation of unpaid family labor within household farming [18,37,50]. The household economy may, therefore, resemble a piecework system, where absolute surplus value is appropriated through longer working hours or more intense work without changes to the labor process [48]. Some of the literature also suggests that permanent or temporary workers form an important part of the labor regime in CF [7,19,51,52]. These workers earn wages from CF schemes but may also face challenges such as inadequate wages, irregular working hours, and a lack of social security benefits [19]. Therefore, CF could convert farmers into disguised proletarians by intervening in the organization of local labor inputs, allocation decisions of production inputs between investors and farmers, and the mechanism of surplus value distribution. This highlights the necessity for an examination of the dynamics of labor relations in CF.

Another important area of CF is to what extent farmers benefit from the value distribution in CF arrangements. An imbalance of power could lead to inequality and opaque value distribution rules in CF [2]. Farmers might, therefore, find themselves excluded from the more profitable segments within agricultural commodity chains, while, due to price manipulation, companies can accumulate value that is generated but not captured by the farmers [11,21,44]. In attempts to resist the value distribution rules of CF, some farmers vio-

late the contract through behaviors such as side-selling or refusing to harvest [53]. However, the powerful position of contracting companies in CF may lead contract farmers to become powerless in the reshaping of these rules. Researchers thus suggest that farmers could aggregate. When farmers unite to form producer organizations, they reduce transaction costs for agribusinesses and, at the same time, have a stronger bargaining position [21,54,55]. The history of collective land ownership and numerous emerging cooperatives in rural China seems to support this suggestion by protecting farmers' land rights and reducing the power asymmetry between farmers and the investors [12]. However, aggregation presupposes that farmers have convergent interests and are prepared to cooperate [11]. In rural China, some cooperatives are formed or controlled by village collectives, entrepreneurial farmers, and corporations, seeking access to subsidies and state support that are typically designated for cooperatives [56,57]. These "fake" cooperatives may set higher entry barriers to exclude farmers from profit-sharing within them, as highlighted in a study by Yan [58]. Therefore, there is still much room for discussion on whether the setting and interpretation of the rules of value distribution could truly enable farmers to benefit from CF.

2.2. Institutional Analysis and Development (IAD) Framework

Institutions can be defined as the "rules of the game" that structure human interaction [59]. These rules can be induced coercively through formal regulations and policies, or enforced endogenously under a system of rules mutually agreed upon by social groups [60–63]. In that sense, institutions are composed of both formal rules like constitutions, regulations, and laws, as well as informal structures in the form of routines, habits, social norms, cultural values, or conventions [64]. However, institutions are not synonymous with rules but are developed through (repeated) practice [63]. Simple regularities only become institutions if they generate expectations, create patterns of interaction, and are supported by effective sanctions [65,66]. By structuring or constraining individual forms of behavior, institutions can either facilitate or impede ordered expectations and actions in human socio-economic activities [67].

The IAD framework offers an analytical structure for examining the operation of various rules. According to this framework, rules are shared understandings among those involved, defining enforced arrangements for required, prohibited, or permitted actions [68]. The first step in analyzing rules is to identify a conceptual unit called an action situation, representing the social spaces where actors interact. Analyzing action situations makes possible the description, analysis, prediction, and explanation of actors' interactions [68]. The IAD framework emphasizes that the analysis of action situations cannot be independent of the external settings in which actors' interactions are embedded, such as natural resource systems and the political–economic context [69–71]. Within these settings, the analysis of the action situation is regulated by a myriad of rules in use. The IAD framework has developed a systematic categorization of these rules, referred to as rule configurations, which encompass seven types of rules: boundary rules, position rules, scope rules, choice rules, aggregation rules, information rules, and payoff rules [72]. Ostrom [73] argues that rule configurations are an evolutionary process, which involves the generation of new alternatives, selection among new and old combinations of structural attributes, and retention of those combinations of attributes that are successful in a particular environment. Therefore, there is no particular set of rule configurations developed by actors' interactions that are uniformly superior to others [73]. Rule configurations change as actors adjust their behavior to conform to their decisions in particular settings.

In this study, we adapt the IAD framework to analyze how farmers are integrated into and affected by CF, as shown in Figure 1. First, we present and analyze the external setting through the review of land resources and socio-economic conditions within our

case study. Second, we define the action situation as CF and distinguish phases of CF by analyzing changes in boundary and position rules. Third, we analyze how changes in the rule configuration during different phases influence the interactions among the involved actors, ultimately impacting land use, labor relations, and value distribution. This analysis contributes to our understanding of land control, labor exploitation, and value distribution in CF.

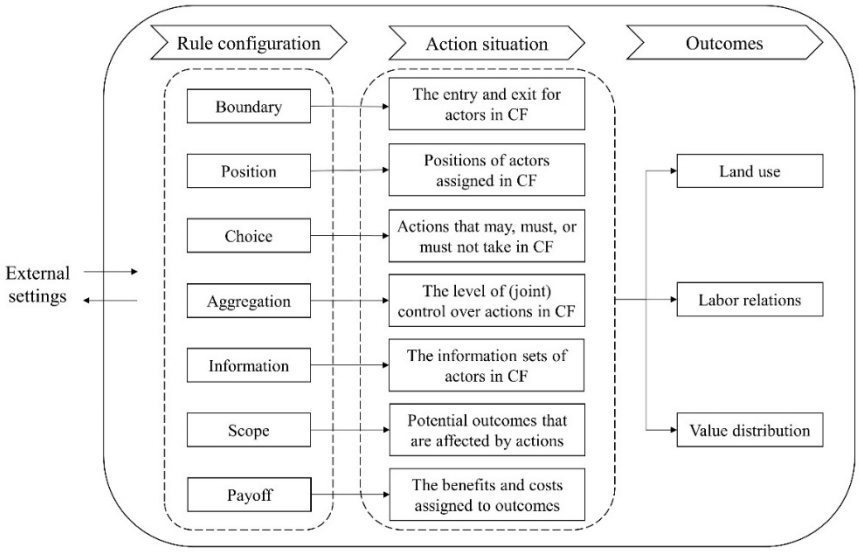


Figure 1. Analysis framework. Source: authors' presentation based on literature review.

3. Methods

3.1. Case Selection

Our case study is Sanxing Township, Shizhu County in Chongqing Municipality, a peripheral rural area in Southwest China (Figure 2). This case was selected as an example of peripheral rural areas in China due to both its structural constraints and opportunities for agricultural transformation. In alignment with international rural studies literature on peripheral rural areas [74–76], Sanxing Township exhibits three interrelated dimensions: (1) Geographical remoteness: Sanxing Township consists of six villages under its jurisdiction, located 17 km from the urban center of Shizhu County and approximately 300 km from Chongqing's metropolitan area. This spatial remoteness restricts integration into larger economic networks, impeding infrastructure development, market access, and transportation linkages. (2) Population migration: The township is undergoing significant demographic shifts, with high rates of outmigration and an aging rural population. By 2022, 33% of the local population had migrated in pursuit of alternative livelihoods, with 54% of these individuals settling permanently outside Chongqing Municipality (Annual report on Sanxing's social and economic statistics in 2022). This migration has altered household structures and local labor availability. (3) Economic constraints: Sanxing Township faces structural economic constraints, including limited employment opportunities and lower income levels. In 2022, the annual net income of farmers in Sanxing Township was CNY 14,850 (~USD 2047), which is about 30% less than that in Chongqing Municipality (annual report on Sanxing's social and economic statistics in 2022). These economic conditions contribute to livelihood vulnerability, reinforcing the need for alternative rural development strategies.

However, in recent years, peripheral rural areas have increasingly been reconsidered not only as sites of disadvantage but also as spaces of emerging opportunities. Accordingly, Sanxing Township has developed rice CF rooted in the local economy since 2015 and has been recognized by the county government and the media as a typical case of bottom-up

agricultural transformation. Initiated by farmers, the Shunde (SD) Agricultural Cooperative started contract farming in Sanxing Township with the participation of local capital. Subsequently, with the support of the government and village collectives, the cooperative evolved into the Maohe (MH) Agricultural Company with an annual output value of CNY 16 million (~USD 2.25 million) (interview with G02, 2023). Contract farming in Sanxing Township has formed an organizational structure of "company + cooperative + village collective + farmers" and an integrated development model covering supply, production, purchase, processing, and marketing. Thus, the CF arrangement in Sanxing provides a unique context for the study of the impact of CF on farmers.

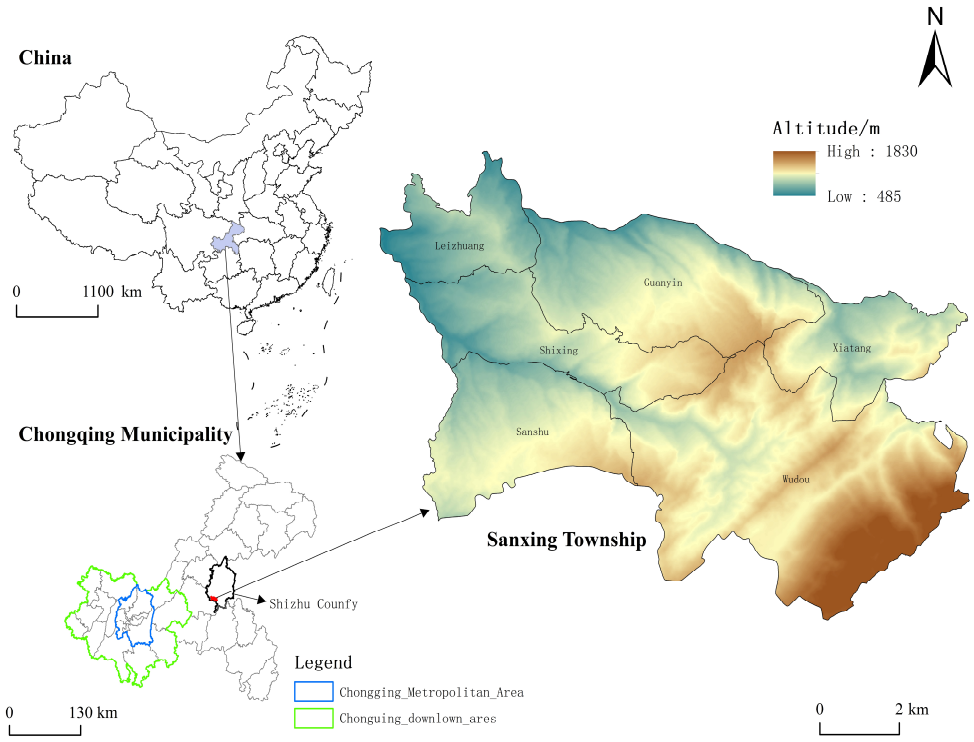


Figure 2. Map of the case area.

3.2. Data Collection and Analysis

Three rounds of fieldwork were conducted between 2021 and 2024. To collect data, this study employed a range of qualitative methods. First, purposive sampling was used to identify respondents, ensuring the inclusion of key stakeholders with varied yet relevant perspectives [77,78]. This non-probability sampling method was chosen to prioritize rich and detailed information over statistical representativeness, allowing an in-depth exploration of different stakeholder interactions in CF. A total of 26 semi-structured interviews were conducted, including three county and township government officials responsible for agricultural and rural development, two agricultural cooperative managers, two village cadres, and three workers involved in rice CF. Second, to determine the number of farmers to interview, stratified random sampling was applied, with criteria based on whether the farmers were from different villages, their involvement in CF (or not), and the duration of their participation in CF. In total, 16 local farmers were interviewed to provide insights on the impact of CF on their livelihoods and community dynamics. These interviews normally lasted 30 to 150 min, providing key insights into rice CF implemented in Sanxing (Table 1).

Table 1. Details of semi-structured interviews.

Informants	Interview Outline	Quantity	Code
Government officials	General social–economic status of the township Rural and agricultural development policies Implementation of rice CF Political support for the development of rice CF Potential conflict in rice CF Land use change in the township Development of cooperatives	3 interviews	G01–G03
Managers of the SD cooperatives	Upstream and downstream activities of rice CF Land and labor in rice CF Capital input from various sources Restrictions on the development of rice CF Profit distribution mechanism of rice CF	2 interviews	M01–M02
Village cadres	Overview of village agricultural development Overview of villagers' participation in rice CF Supervision on land and labor use in rice CF Profit distribution mechanism of rice CF Use of village collective income Potential conflicts in rice CF and solutions	2 interviews	V01–V02
Workers involved in rice CF	Perceptions towards rice CF Work description Changes in livelihood activities and income structure Individual attributes	3 interviews	W01–W03
Contract farmers	Perceptions towards rice CF Changes in land use and labor arrangements Changes in livelihood activities and income structure Violation of contracts	16 interviews	C01–C16

To complement the interview data, participant observation and secondary data were employed to capture the social dynamics and processes underlying CF in Sanxing. The researcher resided in Sanxing Township three times during fieldwork, regularly visiting public spaces and documenting observations in field diaries. These records detail various activities, such as agricultural production, processing activities, informal farmer conversations, and formal or informal meetings. Meanwhile, to verify and contextualize interview and observational data, secondary data collection was conducted, incorporating official government statistics at various administrative levels, law and policy documents, government work reports, contract texts, and other relevant online resources.

Triangulation was applied to mitigate researcher bias and ensure multiple perspectives [79,80]. By cross-checking multiple data sources, triangulation could strengthen the study's validity and ensure theoretical saturation. Then the collected data were processed following the three-stage coding processes of open, axial, and selective procedures [81]. In the initial stage, open coding relied on initial field notes and original data to formulate categories of information. Following this, axial coding was employed to recognize interconnected categories and organize them into secondary themes. Subsequently, selective coding was undertaken to integrate these themes with the papers' research questions. Following these three coding stages, our analysis covered eight secondary themes within the research focus on land use, labor relations, and value distribution in contract farming. These themes include (1) changes in land use rights, (2) land inputs, (3) claims and supervision on land use, (4) unpaid labor, (5) long-term temporary labor, (6) short-term temporary labor, (7) rice pricing, and (8) profit distribution.

3.3. Operationalization of IAD Framework

To investigate how rules shaped and were reshaped by CF arrangements in peripheral rural areas in China, this study adopted the IAD framework as a guiding analytical tool. The IAD framework allows for an investigation of how rule configurations influence actors' behavior, interactions, and outcomes within defined action arenas. This section outlines how each of the seven IAD rule types was operationalized in the context of CF and how rule changes were identified through qualitative data collected via semi-structured interviews, participatory observations, and secondary data, as seen in Table 2. Particular attention was paid to rule shifts that manifested in three core empirical domains: land use, labor relations, and value distribution. These dimensions served as key indicators for understanding how CF arrangements in peripheral rural areas contributed to agrarian transition without fully subordinating smallholders to capital logic.

Table 2. Operationalization of IAD framework for analyzing rule changes in CF.

Rule Type	Definition	Indicators of Rule Change	Data Sources
Boundary	Who is allowed or excluded from participating in CF, and under what conditions?	Introduction of new land thresholds or minimum landholding requirements; Restrictions based on gender, age, or rural household registration status; Minimum required duration of participation for contract farmers; Conditions for exiting contract farming arrangements;	Semi-structured interviews with farmers, managers of the SD cooperatives, and village cadres; Analysis of secondary data, such as the statistics of rice growers participating in CF in Sanxing and CF contract terms.
Position	Who holds which positions, and what authority do those positions entail?	The emergence of new actors; Shifting roles of actors; Reallocation of authority or responsibilities;	Semi-structured interviews with various actors to explore their roles and positions within CF; Participant observation on the authority and responsibilities assigned to different actors; Comparison of various actors' narratives, such as contract farmers vs. managers
Choice	What actions may, must, or must not be taken regarding activities in CF?	Shifts in autonomy over land use; Introduction of labor requirements; Changing contract obligations over production or delivery; More prescriptive production guidelines and external supervision;	Semi-structured interviews with a range of actors to explore their perceived autonomy over land and labor use; Analysis of secondary data, especially restrictions or obligations imposed on contract farmers in contract texts; Participant observation on production practices and supervision activities;

Table 2. *Cont.*

Rule Type	Definition	Indicators of Rule Change	Data Sources
Aggregation	How are collective decisions made, and whose preferences matter?	Changes in actors who hold authority over key decisions; Inclusion or exclusion of different actors in decision-making; Changes in which preferences are prioritized in decision-making; Formalization of decision-making processes;	Semi-structured interviews with key actors about decision-making processes; Participant observation on formal or informal decision-making meetings; Analysis of second-hand data, such as meeting records; Comparison of various narratives, such as interviews from contract farmers vs. the text of official documents;
Information	Who has access to information and who controls its flow?	Reduction or increase in information asymmetries; Formation of new communication channels; Changes in transparency or secrecy of information;	Semi-structured interviews with key actors on the disclosure and dissemination of information; Analysis of secondary data, such as formal or informal notices and brochures of rice CF; Participant observation on relevant information platforms or social media;
Scope	What are the formal or expected outcomes from the CF?	economic and social outcomes of CF; Broadening/narrowing of expected benefits of CF; Introduction of new risks or benefits compared to traditional rice production;	Semi-structured interviews with key actors concerning the shifts in expected and actual benefits Analysis of second-hand data, such as work reports of the Sanxing government; Comparison of various actors, such as contract farmers vs. normal farmers;
Payoff Rules	How are benefits, risks, and costs distributed among actors?	The shift in production risk; Changes in the mechanism of redistribution; Hidden financial penalty or side Payments;	Semi-structured interviews with key actors concerning the redistribution mechanism and their actual Income; Analysis of second-hand data, such as contract terms on pricing, penalties, and bonuses, and statistics of public Funds;

4. Results

4.1. Evolution of Contract Farming in Sanxing

The development of CF in Sanxing Township unfolded in three distinct phases, each characterized by shifts in boundary, position, and scope rules. These changes in rule configuration reflect evolving power dynamics and governance structures under CF practices in the township (Figure 3).

The first phase of CF in Sanxing is a phase of informal and founder-controlled initiation (March–June 2015). The origin of CF in Sanxing Township can be traced back to the establishment of the SD Agricultural Cooperative in March 2015 by five villagers in Leizhuang Village. According to the Law on Farmers' Professional Cooperatives, a registered cooperative must consist of a minimum of five members, with 80% of them being rural residents (boundary rule). The founder of the cooperative, Mr Lang, thus recruited his cousins and friends, who are rural residents but are not reliant on agricultural activities as their primary

source of income (interview with M01, 2023). An interesting observation arises from the fact that the SD Agricultural Cooperative is in the name of the founder, indicating that what immediately appears to be a cooperative is essentially controlled by an individual. The founder perceives the integration of CF into the cooperative's organizational framework as a "necessary strategy to access government support" (interview with M01, 2023). Mr Lang explained his primary responsibility was reaching out to farmers and negotiating rice purchases (position rule). This early phase of CF lacked formal contracts, written rules, and broader institutional involvement (scope rule) (interview with C04, 2023).

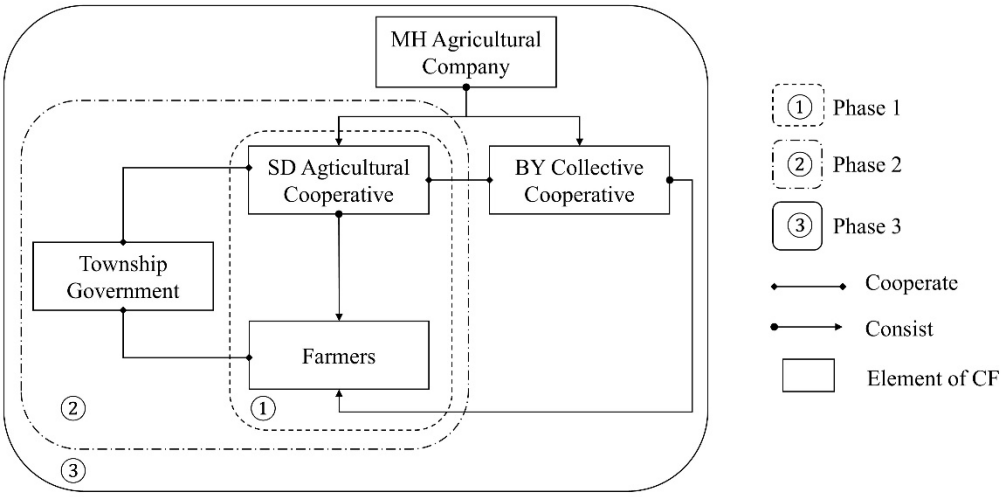


Figure 3. Changes in the organizational structure and activities of contract farming in Sanxing Township during different phases.

The second phase of CF in Sanxing was a phase of government-facilitated formalization (July 2015–May 2019). The transition to the second phase of CF occurred in the summer of 2015, when the township government intervened, as shown in Figure 3. Serving as an intermediary, the township government facilitated connections between the cooperative and farmers without engaging directly in any business activities related to CF (position rule). The township government provided financial support to the cooperative for subsequent processing and marketing endeavors and assisted farmers throughout the production process, from accessing agro-inputs to crop harvesting (interview with G01, 2023). During this phase, the formalization of written contracts between the SD Agricultural Cooperative and farmers covered terms related to supply, production, and purchase (scope rule). While the SD cooperative remained privately controlled, the government facilitated its legitimacy and expanded the reach of CF within the township.

The third phase of CF in Sanxing was a phase of localized and hybrid governance (since June 2019). Since June 2019, the organization of CF in Sanxing has shifted from a privately controlled cooperative into a semi-private and semi-collectively owned agricultural company. During this phase, each of the six villages in the township has established a cooperative under the leadership of the village collective (interview with G01, 2023). Farmers participating in CF transitioned from being members of the SD Agricultural Cooperative to becoming members of the collective cooperative. The collective cooperatives of the six villages collaboratively established the Banyue (BY) Collective Cooperative, which jointly registered the MH Agricultural Company along with the SD Agricultural Cooperative (position rule), as shown in Figure 3. This new organizational structure led to significant changes in both position and scope rules. The SD Agricultural Cooperative holds 49% of the shares, while the BY Collective Cooperative holds 51% (scope rule) (interview with M01, 2023). The founder of the SD Agricultural Cooperative, Mr Lang, serves as the company manager,

while the legal representation of the company is assumed by a village cadre (position rule). The government has withdrawn from direct intervention and has decentralized rights, such as allocating funding and connecting farmers, to collective cooperatives (position rule). The activities of CF in this phase have expanded to encompass supply, production, purchase, processing, and marketing (scope rule). The "company + cooperative + village collective + farmers" structure marks a departure from simple top–down or bottom-up models, instead embedding CF within a framework of localized and hybrid governance.

4.2. The Changes in the Rule Configuration of CF in Sanxing Township

4.2.1. Enhanced Land Control

We observed that changes in the rule configuration of CF have increasingly strengthened contractors' control over farmers' land from the first phase to the third phase. This is shown based on changes detected in three key domains: land-use rights, land inputs, claims, and supervision of land use (for an overview, see Figure 4).

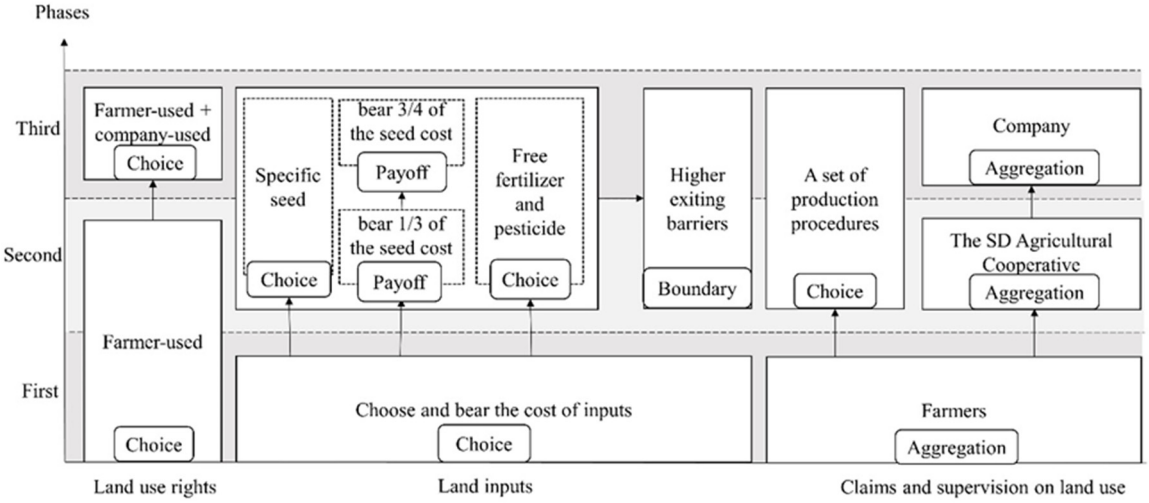


Figure 4. Changes in the rule configuration of land use in CF. The agricultural company has strengthened their control over land in three respects: (1) land use rights have shifted from being used by farmers to being used by companies and farmers; (2) land inputs have been shifted from being fully covered by government subsidies to farmers bearing part of the cost; and (3) the company has strengthened their decision-making and supervision of farmers' land use.

First, our analysis reveals that the adjustment of choice rules shows a subtle yet significant shift in land-use rights from farmer autonomy towards increasing company control, as shown in Figure 4. During the first phase, farmers retained land-use rights (choice rule). Due to the short duration of this phase and the lack of detailed statistical data, the land area involved in CF is estimated as not exceeding 100 mu [1] (interview with M01, 2023). During the second phase, farmers still retained land-use rights (choice rule). According to the 2018 statistics of rice growers participating in CF in Sanxing Township, the total area involved in contract farming across the six villages amounted to 2431 mu, as illustrated in Table 3. Following the criterion that farmers cultivating a relatively concentrated land area exceeding 50 mu qualify as large-scale farmers (the Chongqing Municipal Agriculture and Rural Committee), the statistics show that there are no large-scale farmers engaged in CF. In addition, approximately 90% of farmers grow contract rice in fields measuring less than or equal to 5 mu (approximately 3.35 ha) of land. This constitutes the most important pattern of land use in CF in Sanxing: indirectly controlling large-scale land by encouraging a large number of small-scale farmers to engage in contract farming.

Table 3. Farmers and land involved in CF in Sanxing Township (2018).

Village	Land Area Involved (mu)	Number of Farmers Involved	Size of Land Plots (mu)
Leizhuang	874	165	1–35
Shixing	621	171	0.5–15
Guanyin	303	106	0.5–5
Sanshu	281	68	1–10
Wudou	157	43	0.5–20
Xiatang	195	46	0.5–7

Data source: the 2018 statistics of rice growers participating in contract farming in Sanxing.

In the third phase, a shift in both position and choice rules allowed contractors to directly access and control land. Based on the land-use pattern of the second phase, the company began to access land to establish a company-controlled farm during the third phase. Village cadres utilized their managerial role in the collective cooperative to negotiate with farmers (position rule), persuading farmers in Shixing, one from a village in Sanxing, to transfer 150 mu of land to the company (interview with V02, 2023). With increasing recognition of the commercial value of farmland, farmers rented their land to the company for 300 CNY/mu (≈634 USD/ha) annually (interview with C01, 2023). Consequently, the company obtained land-use rights for the farm (choice rule). Although the farm's area constitutes less than 5% of the land involved in CF, it signifies a shift in the company's control over the land from indirect to a combination of indirect and direct control.

Second, the changes in choice and payoff rules mean higher seed inputs for farmers in CF (Figure 4). From the second phase, it was mandatory for farmers to purchase and cultivate specific rice seeds (choice rule). Additionally, with the withdrawal of direct subsidies to farmers by the township government, some of the seed-input costs were shifted to farmers. During the second phase, farmers bore 1/3 of the cost of rice seeds, with the remaining 2/3 shared equally by the SD cooperatives and the township government (payoff rule). However, during the third phase, farmers' responsibility increased to 3/4, while the company only covered the remaining 1/4 (payoff rule) (interview with M01, 2023). In addition to the seed input, the fertilizer and pesticide inputs have also been increased. The company has provided farmers with organic fertilizer and biological pesticides starting from the second phase (choice rule). Although these inputs are supplied to farmers without charge, they contribute to increasing the exit costs for farmers. The contract stipulates that exiting farmers must compensate the company for the input costs of seed, fertilizer, and pesticide of undelivered rice (boundary rule). However, farmers have expressed skepticism regarding the authenticity of these input prices. One farmer said: "If we pay for these (organic fertilizer 500 CNY/mu and biological pesticides 200 CNY/mu), we cannot make any profit" (interview with C08, 2023). Therefore, farmers believe that the company was exaggerating the value of these inputs to restrict their exit options.

Thirdly, changes in aggregation rules are accompanied by the strengthening of claims and supervision over farmers' land use. During the first phase, farmers were free to determine the cultivation, harvesting, and delivery quantity of rice in contract farming, with the SD Agricultural Cooperative lacking the right to intervene in the actual rice production process (aggregation rule). Transitioning to the second phase, farmers' decisions on land use became subject to the influence of the SD Agricultural Cooperative (aggregation rule). According to our interviews with contract farmers, the latter must adhere to a set of production procedures established by the cooperative, including rice-sowing, fertilizer and pesticide application, irrigation, and harvesting (choice rule). However, overseeing more than 500 contract farmers proved challenging for the SD Agricultural Cooperative. Manager Lang, for instance, expressed concerns: "To minimize chemical residues and preserve crop

quality, we provide biological pesticides to farmers and have strict regulations on their use. Nevertheless, in practice, some farmers employ improper methods of applying pesticides, leading to reducing their effectiveness. Some farmers even divert pesticides for use on non-contracted land plots. Monitoring these types of behavior is difficult, as uniformly supervising scattered farmers would be highly costly". During the third phase, the company still required farmers to adhere to the production procedures established in the second phase and imposed further restrictions on their decision-making over land use (aggregation rule). The company shifts the responsibility of managing farmers to BY collective cooperatives (position rule). The authority and social connections of village cadres contribute to connecting, communicating, and managing numerous scattered farmers in the village. As the manager said: "With the help of village cadres, we can reduce the negotiation cost and supervise farmers' land use more effectively" (interview with M01, 2023).

4.2.2. Diversified Labor Regimes

Our investigation reveals that the rule configuration associated with labor regimes in CF has evolved into a diversified labor regime encompassing unpaid labor, short-term temporary labor, and long-term temporary labor, as shown in Figure 5.

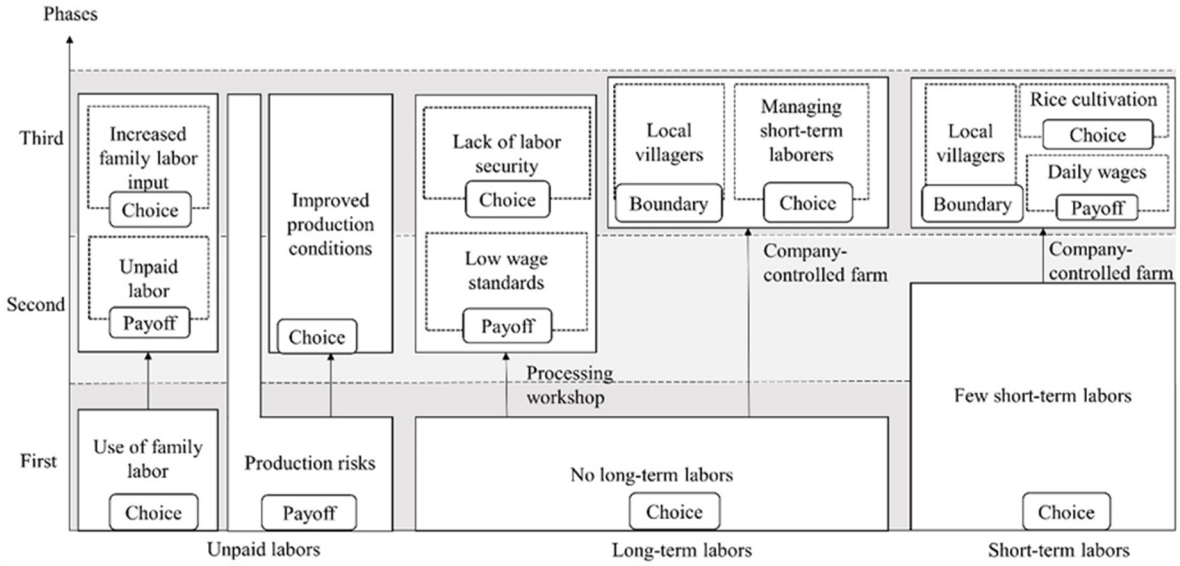


Figure 5. Changes in the rule configuration of labor relations in CF. The company has adopted a diversified labor-use and management regime: (1) the input of unpaid family labor increased and bore all production risks; (2) long-term labor was hired for agricultural product processing and short-term labor management; (3) flexible short-term labor was hired during the busy farming season.

First, changes in choice and payoff rules have led to an increase in unpaid labor. As the company strengthened its control over land use, farmers had to increase labor input to fulfill these requirements. To save costs, most interviewed farmers opt to rely more on family labor rather than hiring external workers (choice rule). A skilled laborer can earn more than CNY 100 a day (Interview with C06, 2023). However, the use of family labor in CF obscures its value. The MH Agriculture Company only pays for the rice and does not compensate for family labor (payoff rule), thus converting family labor into unpaid labor. The interest lies in the fact that none of the farmers, despite recognizing that their workload has increased since becoming contract farmers, questioned whether the company should compensate them for the use of family labor.

Changes in payoff rules have further formalized risk transfer to farmers. In the first stage, the SD cooperative has made verbal agreements in which farmers must bear losses during rice production (payoff rule). From the second phase, the rule specifies and

formalizes the risk transfer in terms of the losses caused by natural disasters (drought, floods, heavy rains, etc.) and other forms of force majeure being borne by the farmers (payoff rule). Meanwhile, farmers experienced improved production conditions supported by new funding. In particular, following the withdrawal of direct subsidies to rice seed in contract farming, the government has increased subsidies directed toward agricultural projects facilitating the enhancement of farmers' production environments and mitigating production risks (choice rule). For instance, according to the ledger of the rice industry development project in Sanxing Township in 2021, CNY 1.54 million in government funds have been allocated. These projects encompass initiatives such as constructing irrigation pipelines and water-collection ponds, quality protection of cultivated land, promotion of organic cultivation methods, and application of harvesters (the ledger of the rice industry development project in Zhongyi Township in 2021). However, government investments are inclined to favor the downstream rice industry (choice rule), as funds allocated for marketing are approximately 85% higher than those designated to improve production conditions (the ledger of the rice industry development project in Zhongyi Township in 2021).

In addition, the use of choice, boundary, and payoff rules has established direct labor control through the employment of long-term and short-term temporary labor. These temporary laborers do not enter into formal labor contracts, nor do they receive social security insurance (choice rule). Their employment was regulated by a combination of boundary, choice, and payoff rules, with each type of rule playing a distinct role in regulating their labor conditions, as illustrated in Figure 5.

Changes in choice and payoff rules have redefined long-term labor conditions. From the second phase, the SD Agricultural Cooperatives recruited long-term labor for rice processing activities (choice rule), with wages ranging from CNY 800 to 3000 per month based on job skill requirements (payoff rule). However, even the maximum salary of CNY 3000 per month falls below non-agricultural employment wages in the county, such as an average salary of over CNY 5000 per month for a construction worker (interview with C07, 2023). Their working hours are concentrated mainly on the period after the rice harvest and before the Chinese New Year (choice rule). To meet production deadlines, farmers may face increased workloads without overtime pay. The lack of labor security and low-wage incomes contribute to high mobility among long-term temporary laborers in processing workshops. Additionally, the use of long-term workers has decreased with the implementation of improved mechanization rates. During the third phase, the company utilized government funds for workshop construction and production line upgrades, resulting in a reduction in the number of long-term laborers from 17 in 2017 to 14 in 2023 while maintaining its processing capacity (interview with M01, 2023).

Position and choice rules have expanded the application of long-term labor to company-controlled farms. Long-term labor work in the company-controlled farm was engaged in rice cultivation for 7–8 months annually, ranging from rice transplanting to harvesting (choice rule). Additionally, these types of laborers are assigned the task of recruiting short-term temporary laborers to fulfill demand during the cultivation process (choice rule). The long-term temporary laborers are typically local villagers with extensive social connections, facilitating access to short-term labor (boundary rule). One of these laborers noted, "I know 80% of the permanent villagers and their family backgrounds in the village" (interview with C03, 2023). Following the recruitment of short-term labor, long-term laborers assume responsibilities such as assignment, coordination, supervision of work arrangements, and recording work hours (choice rule).

We also observed that changes in boundary and payoff rules have shaped the recruitment and pay of short-term labor. Short-term labor is primarily recruited by the company

for rice cultivation, especially during the busy farming season (choice rule). Generally, villagers residing close to the farm are easier to recruit due to the flexible nature of the work (boundary rule). Moreover, farmers with strong social connections are more available and trustworthy (boundary rule) (interview with C03, 2023). Depending on the difficulty and intensity of tasks like plowing, weeding, sowing, fertilizing, irrigation, harvesting, etc., the wages of short-term laborers range from CNY 80 to 250 per day (payoff rule).

4.2.3. Changing Income Increase

In addition to the control over land and labor, our analysis reveals that changes in income growth for farmers are shaped by the payoff rules governing pricing and profit distribution, as shown in Figure 6.

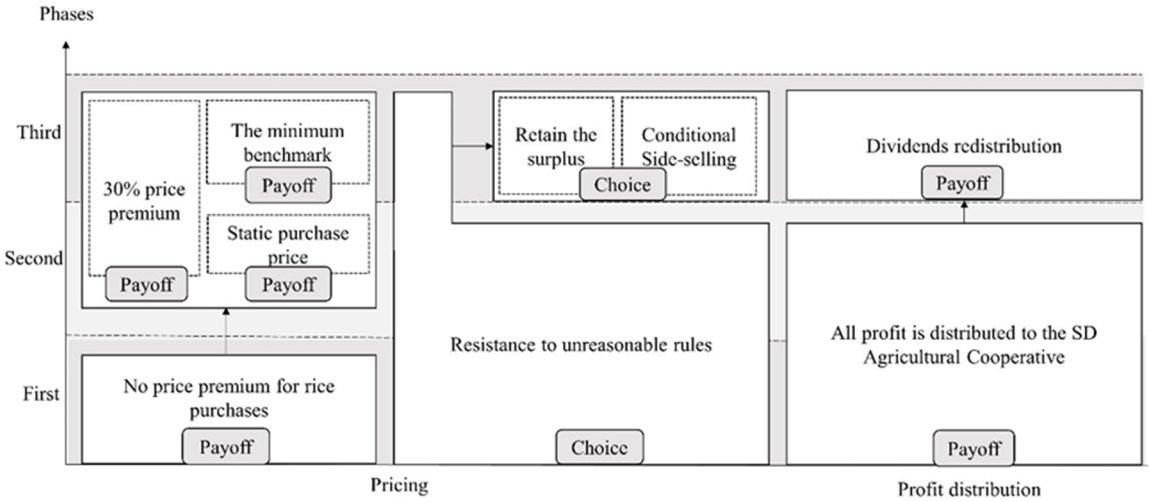


Figure 6. Changes in the rule configuration of value distribution in CF. Farmers can benefit from CF: (1) the township government paid the premium for rice; (2) farmers' resistance helped modify the rice delivery rules; (3) the intervention of village collectives helped establish a new profit distribution mechanism.

During the first phase, which was constrained by a lack of initial capital, the SD Agricultural Cooperative did not offer a price premium for rice purchases. The manager guaranteed farmers that their rice crops would be purchased at market prices during the phase (payoff rule). From this perspective, the pricing appears unattractive to farmers. Consequently, the township government intervened to adjust the price of rice in CF. As a township government official explained: "To ensure farmers profit more from contract farming, we have increased the rice pricing by 30%, and the premium was funded by the township government (payoff rule)" (interview with G02, 2023).

However, the government and the company may have misled farmers by manipulating the payoff rule, especially by obfuscating the benchmark for rice pricing. The company set the rice pricing at CNY 3.4/kg, reflecting a 30% increase from the minimum purchase price of CNY 2.26/kg mandated by the State Grain Administration (interview with M01, 2023). Since the market price is typically around CNY 2.8/kg, the so-called 30% increase in rice pricing amounts to only a 21% increase when considering the market price as the benchmark. Furthermore, the contract terms specify that rice pricing is variable, allowing for negotiation to increase it if the market price rises during acquisition, and to remain unchanged if the market price falls. This term offers farmers protection against downside price risks. Despite this term, the purchase price of CNY 3.4/kg has remained static since 2016 (payoff rule) because the company always implemented the term based on the minimum rice purchase price stipulated by the State Grain Administration (payoff) (interview with C01).

The findings reveal that farmer resistance has led to key adjustments in choice rules in CF. The escalating input cost, such as for rice seeds and unpaid labor, coupled with stagnant prices, has resulted in squeezes on farmers' profit margins in contract farming. In response, farmers have started to resist rules they find unreasonable by resorting to contract violations. The main prevalent violations are side selling to external markets (choice rule). When the market price exceeds the contracted price, some farmers, driven by the prospect of higher short-term profits, sell part or all of their harvested rice to open markets (interview with M01, 2023). A second resistance strategy involves selective quality manipulation (choice rule). Some farmers strategically sell higher-quality rice to external retailers to secure better incomes while providing lower-quality rice to the company and disguising it as adverse production shocks (interview with M01, 2023). These strategies may be facilitated by the more adaptive and competitive pricing mechanisms of external retail markets compared to the company's fixed pricing. Finally, as dissatisfaction with contract farming intensifies, farmers may choose to exit the arrangement altogether in pursuit of higher incomes (choice rule). Such a trend was not uncommon in Sanxing Township. According to the 2022 statistics from rice growers participating in contract farming in Sanxing Township, participation in CF has declined from a peak of over 600 farmers to 512.

In response to these forms of resistance, the company initiated adjustments in rule configurations, especially in choice rules and payoff rules. First, the choice rule was revised by loosening delivery requirements. Originally, farmers were obligated to deliver their entire rice harvest to the company. In response to farmers' resistance, the company revised the contract terms, specifying that farmers need to deliver a minimum of 300 kg/mu of harvested rice (choice rule). This modification allows farmers to retain a surplus of rice. As the quote shows: "Higher-quality land can generally yield around 500 kg/mu. About 40% of the rice production can remain at the farmers' discretion" (interview with M01, 2023). This adjustment granted farmers greater discretion over surplus output, which they could retain for household consumption or sale on the open market. By increasing farmer autonomy and reducing the opportunity cost of compliance, this measure helped curb unauthorized side selling. Second, the payoff rule was adjusted to introduce conditional market access. While allowing farmers to sell their surplus rice externally, the company stipulated that the retail price is not lower than CNY 4/kg (payoff rule). This rule serves a dual purpose: it protects the company's investment by preventing market price undercutting, and it helps preserve the premium image of "Sanxing Rice" as a high-quality regional brand (interview with G03, 2023). These rule modifications reflect a strategic compromise: The company eased rigid enforcement of delivery and pricing in exchange for sustained farmer participation and reputational safeguarding.

According to interviews with contract farmers, rice CF in Sanxing offered a fixed income of approximately RMB 1750 per mu. After deducting basic production costs, including seed, plowing, and harvesting, the average net income was estimated at around RMB 1600 per mu (scope rule). However, it is important to note that this figure excludes unpaid family labor, which remains an implicit cost in smallholder production. When compared to farmers not participating in CF, the income advantage becomes more evident. Non-participating farmers reported net earnings ranging from RMB 1000 to 1300 per mu, depending on seasonal market fluctuations and yield variability. This represents an approximate profit increase of 1/3 for contract farmers. Furthermore, the involvement of the BY collective cooperative appears to be a more effective representation of farmers' interests. During the third phase, after settling operating costs and taxes, the MH Agricultural Company distributed some of the profits as dividends to the two cooperatives, with 49% of dividends going to the SD Agricultural Cooperative and 51% to the BY Collective Cooperative (payoff rule). Dividends from the BY cooperative are distributed to each

village collective cooperative based on the area under cultivation in the village. In 2022, the BY collective cooperative received a total of CNY 600,000 in dividends, and the dividends received by each village were between CNY 75,000 and 120,000. These dividends are mainly used for village public construction and subsidies for poor farmers, rather than being directly distributed to contract farmers (payoff rule).

5. Discussion

Many studies of CF position it within the global value chain, criticizing CF as a win–lose institution that enables transnational capital to take advantage of local land and labor and transfer the captured value to other locations [11,35,40,44,52]. However, the dynamics of contract farming in a highly localized value chain have not been fully understood in the existing literature. This study focuses on land use, labor relations, and value distribution in CF, using a case study in Sanxing Township, Chongqing, where the value chain is strongly rooted in a peripheral rural area. This approach enables us to go beyond "win–win" and "win–lose" dichotomies to understand the complex implications of CF on local community development and farmers' livelihood. Moreover, we have further investigated the power dynamics hidden behind these implications, with the focus not only on the asymmetrical power dynamics between agricultural investors and small farmers but also on how the participation of local governments and village collectives impacts this dynamic. It highlights the importance of context-specific rule configurations and hybrid governance arrangements in shaping more inclusive CF outcomes.

The findings suggest that although farmers lose control over land and labor to a certain extent, they can partially benefit from adjustments to the rule configurations. Due to the absence of large-scale agricultural producers in these peripheral areas [82], we found that the boundary rule in this context has facilitated, rather than constrained, the broad participation of local small-scale farmers in CF. Therefore, integrating a large number of small farmers into CF in peripheral areas of rural China is a feasible approach, which is contrary to widespread concern about excluding smallholders in CF [83,84]. Furthermore, the findings show that CF gains control over farmers' land primarily through decisions on and supervision of land inputs and land use. Therefore, CF in our case is not involved in forced changes in land rights and displacement, which is in contrast to others' observations, such as in Uganda [45]. In addition, the findings reveal that local investors use CF to influence the restructuring of local labor relations. Informal and unpaid labor groups composed of family members constitute the main source of cheap labor in contract farming, which is consistent with the main criticism of the exploitative labor regime of CF [15,35,36]. However, the findings also show that local investors leverage social networks and village collective agencies rooted in local communities to provide farmers with flexible access to long-term and short-term wage employment. We argue that this not only increases the diversity of local livelihood options, but, more importantly, these options have extensive local socio-economic connections. This is different from cases in countries such as Zambia, where employment opportunities may be captured by outsiders or a small number of local elites [7].

While investors play a crucial role in shaping rule configurations related to land and labor use, these configurations are also significantly influenced by local contract farmers. The findings illustrate how farmers' resistance could contribute to mitigating the agricultural company's appropriation of surplus value. To resist the hegemony imposed by the contracts, local farmers strategically adopted the tactics of side selling, selective quality manipulation, and withdrawing from CF schemes. These practices resemble farmers' everyday acts of resistance observed in the Philippines, which contribute to challenging the common portrayal of the "powerful" company versus the "powerless" contract farmers [53].

And it may be more prevalent in China due to Chinese farmers' autonomy in land use, their diverse livelihoods, and the high cost of contract compliance [12,85]. In response to the farmers' resistance, the agricultural company found it imperative to modify the rule configuration in CF to sustain and enhance contractual relationships with small farmers. Furthermore, our findings analyze the benefits of CF in price premiums, enhancing farmers' agricultural skills, increasing wage employment, and utilizing redistribution to promote village well-being. These findings are aligned with discussions on the positive impacts of contract farming on local communities and smallholder farmers [10,27,84,86]. Therefore, although CF is far from being an innovative and inclusive alternative to large-scale land acquisitions, it can be more inclusive and beneficial to local communities and farmers' livelihoods through the reformulation of rule configurations.

The case of rice CF in Sanxing further reveals that rule configurations in CF are not merely shaped through interactions between investors and farmers but rather emerge from complex local power dynamics involving local actors, village collectives, and the local state. While CF in Sanxing was initiated by the local agricultural cooperative, our findings show that the cooperative is essentially a private agricultural company controlled by local private investors, which is in line with the phenomenon of "fake cooperatives" in China [56,57]. Yet, unlike typical privately driven CF schemes, this cooperative was embedded in broader government support and collective participation. The findings show that by leveraging central government fiscal payment transfers, the government could provide farmers who participate in CF with land-input packages and formulate related usage rules. The political intervention has, therefore, promoted the integration of CF's expansion and farmers' livelihoods. We further distinguish the differences between state intervention in our case and other political dynamics, such as patronage relations in Tanzania [87]. The findings suggest that farmers did not face the risk of falling into debt relationships and bankruptcy due to the high land-input costs and retained the option to exit. This also contrasts with the use of indebtedness as a primary control vehicle in cases reported from Chile, India, and Uganda [44,45,88]. Most importantly, the findings further suggest that private investors, despite establishing cooperative relationships with local governments, did not bypass local governance. Instead, with the decentralization of the local government to village collectives, CF evolved into a hybrid half-private, half-collective structure.

This hybrid structure represents a notable difference from the dominant CF models documented in the Global South. The existing literature often describes a shift from the basic "Company + Farmers" model to more layered arrangements such as "Company + Intermediary + Farmers", where capitalist intermediaries subcontract production and consolidate control over farmers [7]. In contrast, the Sanxing model of "Company + Cooperative + Village Collective + Farmers" introduces a less explored but important variation. While the role of village collectives in rural China has been noted in many studies [89–91], this case further discusses their dual function in CF: not only as facilitators of local land and labor resource coordination but also as rule-makers in CF. Unlike profit-maximizing capitalist intermediaries, our findings show that village collectives in Sanxing serve as a grassroots governance institution with political legitimacy and deep ties to local communities. It plays a crucial role in managing land use and agricultural inputs, negotiating redistribution terms, and compliance with state policies. Therefore, the model that includes the village collective may enhance farmers' negotiating power and make space for resistance from below, including side-selling and strategic withdrawal. These practices, in turn, pressured investors to reform rule configurations toward more inclusive CF arrangements. It is worth emphasizing that the use of village collectives as intermediaries to promote the vertical integration of small-scale farmers in Sanxing is not

entirely unique. Similar practices have been observed in various rural regions across China, including Hebei Province, Sanxi Province, and Qinghai Province [92–94]. The Sanxing case further highlights the reformulation of rule configurations in CF, grounded in the historical collective institutions in rural China. By embedding CF within localized power structures, a combination of active and cohesive village collectives, locally embedded investors, relatively independent small-scale farmers, and the decentralization of local state authority, Sanxing has reshaped the political economy of CF in ways that are more responsive to the interests and needs of smallholders.

Finally, we reflect on the generalizability of the Sanding case and the limitations of the IAD framework in capturing underlying power asymmetries. The case of CF in Sanxing offers important insights into rules configurations in land use, labor relations, and value distribution and allows for the abstraction of how local political and economic forces mediate the process. However, the extent to which these insights can be extended to other cases should be approached with caution. For example, in areas where village collectives are weak, the replication of such inclusive CF arrangements may face considerable obstacles. Nonetheless, the case contributes a valuable insight into a potential alternative for peripheral rural areas in China that seek to balance investor incentives with smallholder inclusion and rural development. In addition, while the IAD framework offers a systematic approach to analyzing how rules shape actors' strategies and outcomes, it tends to treat actors as relatively equal and thus may be limited in capturing entrenched power asymmetries. To address this limitation, our study places the IAD framework within the broader debate in the political economy of CF, particularly focusing on the question of who holds the power to formulate rules and who does not. This approach allows us to complement the IAD framework with a more critical understanding of power dynamics embedded in CF arrangements.

6. Conclusions

Debates persist over whether contract farming (CF) represents a "win–win" or a "win–lose" arrangement as an alternative to large-scale land acquisitions in the global land rush. We address these debates by examining who dominates the rules of the game and how they do so, focusing on the rule configurations of CF and the power dynamics behind it. Using the institutional analysis and development (IAD) framework, we have investigated the rule configurations of land use, labor relations, and value distribution under CF schemes in Sanxing Township, rural China. The findings suggest that local investors can manipulate rules strategically to impose complex formal and informal, direct and indirect control over farmers' land and labor. However, the reformulation of rule configurations may mitigate the adverse effects of CF on local communities and farmers' livelihoods. Farmers' resistance has facilitated adjustments in product pricing and the redistribution of surplus value. During the process, political and collective support embedded in local power dynamics also contributes to defending farmers' rights. Consequently, small farmers are not necessarily the losers in CF schemes.

This study goes beyond the "win–win" and "win–lose" dichotomy in CF. We do not agree that CF is an inclusive alternative to large-scale land acquisitions, nor that contract farmers are always disadvantaged to varying degrees. We argue that the progression of value appropriation through land and labor control within CF is not linear, but shaped and mediated by a range of power dynamics in specific contexts. Diversified local collaborative initiatives and strengthened collective governance systems could contribute to formulating more inclusive rule configurations in CF and other agricultural development programs. From a broader policy perspective, these insights have important implications for promoting the integration of small farmers into modern agriculture and expanding their voice in

value distribution. While our focus is on the power dynamics of different actors locally, it is essential to note that power struggles within families, between genders, and across generations are equally important yet less understood. Future research on these aspects can shed further light on the gains and losses experienced by different farmer groups within the agricultural transformation agenda.

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Notes

[1] 1 mu ≈ 0.067 ha.

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