What Is the Operation Logic of Cultivated Land Protection Policies in China? A Grounded Theory Analysis

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Abstract: Cultivated land protection policies (CLPP) are essential for maintaining social stability, guaranteeing food security, and ensuring sustainable development. However, a mismatch exists between policy performance and the objectives that influence the implementation of CLPP, and the system mechanisms of CLPP must be revealed and explored. Based on the literature review, this paper summarizes the current dilemmas of China’s cultivated land protection at the theoretical level, and preliminarily depicts the external foundation of CLPP in view of China’s topography and spatial distribution of cultivated land. This paper uses CLPP texts as research samples based on grounded theory to construct an analytical framework. The results show that the operation logic of the CLPP is founded on situation–structure–motivation–action–space–outcome. Accordingly, systematic analysis and in-depth understanding of the operation logic of CLPP will help to re-examine the profound relationship between policy text and implementation effect from such perspectives as transnational, trans-regional, and multi-scale. It also helps to reveal the hidden scientific value of spatiotemporal pattern for cultivated land protection, and serve the formulation and implementation of relevant policies in the future. Under the background of the new era of ecological civilization, it is urgent to enhance the operational effectiveness of the CLPP, identifying the focus of policy implementation, and scientifically formulating the CLPP is of great significance to its success.

Keywords: cultivated land protection policies; operation logic; current dilemmas; grounded theory

1. Introduction

Cultivated land is a critical subject, and its protection is central to ensuring food security and maintaining social stability [1]. The projections show that feeding a world population of 9.1 billion people in 2050 would require raising overall food production by 70% between 2005 and 2050 [2]. Since 1960, the amount of cultivated land per capita in the world has decreased from 0.41 ha to 0.21 ha [3]. Furthermore, it is estimated that 5 to 10 million ha of cultivated land is abandoned every year as a result of soil degradation and the construction of buildings and infrastructure (Food and Agriculture Organization of the United Nations, FAO, 2009). In 2019, the Intergovernmental Panel on Climate Change (IPCC) noted in its report entitled “Risk Management and Decision-making in Relation to Sustainable Development” that climate and land changes result in compound risks to food systems, human and ecosystem health, and livelihoods. Control of land degeneration and the sustainable use of cultivated land plays an important role in reducing soil erosion, eliminating hunger, and coping with climate change [4,5]. In particular, the 2030 Agenda (Transforming our World: The 2030 Agenda for Sustainable Development) also established the “land degradation neutral world” to reset or reduce the level of soil degradation. This is a significant challenge for scientists and policymakers worldwide who seek to protect cultivated land [6] and achieve sustainable development of agricultural and socio-economic production while ensuring food security [7,8].
Protecting cultivated land is a recognized worldwide topic. Internationally, cultivated land protection forms and priorities have their own characteristics, but they have certain commonalities in scientific planning, legal protection, government regulation, and market operation. The cultivated land protection policy of the United States is mainly macro-control oriented. First, it is to formulate a complete legal system for cultivated land protection, that is, to plan and protect cultivated land from the aspects of planning, taxation, requisition, etc.; then it is to implement the land use control system and the land development right system [9,10]. Canada mainly guides cultivated land protection through the planning system, including laws and regulations, land use planning, and restrictions on the right to agricultural land development [11]. In the face of high urbanization, Britain still retains a large number of cultivated land thanks to its focus on the implementation of the land development right system [12,13]. After the 1960s, many laws have been issued to strengthen the planning and management of land resources in Britain. Comparatively speaking, in France, the cultivated land protection policy puts more emphasis on centralization, and the central government exercises the land legislative power. Private cultivated land must be used for agricultural management, and it is not allowed to abandon cultivation, inferior cultivation, or to build houses on cultivated land [14]. In Germany, the ecological compensation policy and the ecological index trading mode ensure land use and ecological balance, which is a policy worthy of reference [15]. Given its limited land resources, Japan has not only established a sound legal system for the protection of cultivated land, but also paid special attention to the creation of new urban agriculture [16]. In addition, South Korea also formulated a series of laws to reasonably protect and develop agricultural land resources [17]. In general, compared with the above-mentioned countries, the particularity of China’s cultivated land protection policy lies in basic national conditions and the complex relationship between the multiple subjects of cultivated land protection.

Food security in China faces many challenges [18,19]. China is a developing country with a large population, less cultivated land per capita, less high-quality cultivated land, and less cultivated land reserve resources than developed countries [20,21]. Cultivated land protection in China began in the 1980s and is the most stringent cultivated protection system in the world [22,23]. However, in reality, cultivated land protection has not achieved the expected effect of the policy [24,25]. According to the monitoring data of the Ministry of Natural Resources [26], cultivated land decreased by 354,700 ha, 388,000 ha, and 336,500 ha in 2013, 2014, and 2015, respectively. By 2015, China’s per capita cultivated land area was only one-third of the world average. In 2015, the national high-quality cultivated land area was 3.9738 million ha, accounting for only 2.9% of the total national cultivated land area. The quality of cultivated land in some areas has continued to deteriorate [27]. In particular, the performance of cultivated land in terms of quality and ecological protection is relatively low [21,28,29] because rapid urban expansion has led to cultivated land degradation [30,31], cultivated land conversion [32,33], cultivated land abandonment, and the decline of cultivated land fertility [34]. In addition, excessive intensive use of cultivated land has caused various problems, such as overloaded agricultural ecosystem operations and increasing environmental pressure [35,36], which has seriously undermined the sustainable development of agriculture in China [37]. Because of this, based on the development situation of cultivated land use and protection, the Chinese government formally put forward a series of policy objectives and measures to strengthen cultivated land protection from the three dimensions of quantity, quality, and ecology in 2012 [38,39].

Is the effect of the CLPP consistent with the expected goal of three-dimensional protection [40]? The evolution of the CLPP has been systematically analyzed [41,42], including the policy performance [43]. A literary analysis of the CLPP literature reveals two main points. First, relevant scholars carried out a performance evaluation of CLPP based on the macro and meso scale and found that the implementation of a land use control system and basic cultivated land protection policy yielded positive results for cultivated land protection [44,45]. At the same time, the CLPP plays an important role in promoting food production [46], maintaining the quantity, and reducing illegal activities. Second, some
scholarly research shows that the performance of the CLPP is disappointing, and the cultivated land control system does not effectively constrain the demand and supply of cultivated land conversion [47,48]. Additionally, the land policy to control the growth of construction land and prevent the loss of cultivated land has proven a two-fold failure [49]. These arguments provide a basis for optimizing the path of cultivated land protection in China. As public policy, the historical logic and comprehensive attribution of the CLPP and the complexity of the policy’s external environment cannot fully explain the cause and effect whereby cultivated land protection is not consistent with the goal. Whether the system mechanism of the policy is clarified is a key factor affecting the policy effect. In the context of China’s land and space governance in the new era, what are the practical problems faced by the cultivated land protection policy? How do the elements of policy system interact? Is there any inherent logic law for induction? Therefore, a clear policy can explain the operation logic and help construct the theoretical framework of the CLPP.

This paper focuses on these issues to explore the operational logic and construct the theoretical framework of CLPP. It also supports current discussions of the systematic law of policy operation and goes on to identify the focus of policy implementation. This paper is organized as follows: In Section 2, we briefly review the relevant literature regarding cultivated land protection to introduce the current dilemma. In Section 3, we describe the research methods and data sources. In Section 4, using 62 texts of cultivated land protection policies as research samples, we perform coding analysis and construct an analytical framework based on grounded theory to explore the operational logic of CLPP. In Section 5, we discuss the operational logic of cultivated land protection and analyze the results. In the last section, we provide both conclusions and policy implications.

2. Literature Review

2.1. Mismatch between Cultivated Land Resource Value and Cultivated Land Protection Path

The comprehensive value of cultivated land resources includes economic, production, ecological, and social value. The root cause of cultivated land loss is that the total value of cultivated land resources and their reasonable distribution are ignored [50]. The non-market value of cultivated land such as ecosystem service function, ensuring national food security, maintaining social stability, and providing basic living security for farmers attracts much attention [51]. Researchers found that the excessive loss of cultivated land conversion accounted for 44.73% of the total cultivated land conversion area because the non-market value of cultivated land from 1989 to 2006 was ignored [52]. According to studies [53], the ratio of economic value, ecological value, and social value of cultivated land is approximately 1:2:3, indicating that the current market value of cultivated land resources is far from fully reflective of the value of cultivated land resources. However, the value of cultivated land has not been widely studied by the community. On the one hand, as the first behavior subject of cultivated land protection, farmers’ one-sided cognition of cultivated land value, low comparative benefits of cultivated land’s social and economic value [54], and obvious externality of cultivated land protection affect farmers’ enthusiasm for protecting cultivated land [55]. However, these factors also bring a series of problems, such as a deteriorating cultivated ecological land environment due to the excessive pursuit of economic benefits of cultivated land. The lack of comprehensive value cognition of cultivated land results in a disparity between requirements and the supply of cultivated land multi-functions [56]. In reality, China’s topography are three ladder distributions. According to the spatial distribution of cultivated land in 2017, the cultivated land quantity in eastern area is more than that in Western area, and the cultivated land quantity in areas with “light–temperature–water–soil” suitable conditions such as southeast coastal area are gradually decreasing (Figure 1a). The economic, production, ecological, and social value of cultivated land in different regions are spatiotemporal heterogeneity. Additionally, insufficient attention to the ecological attributes of cultivated land with a large amount of chemical investment in cultivated land use weakens the cultivated land ecological function. Therefore, some scholars have proposed focusing on the non-market value and ecological
value of cultivated land [57], the value of social responsibility [58], and the value of social welfare [59] to squeeze the benefit space of cultivated land conversion. Overall, the value of cultivated land has experienced a development process that has grown in scope. The cognition of cultivated land comprehensive value is still in the connotation deepening and standard quantification stages. A scientific and comprehensive evaluation system of cultivated land value is yet to be developed; the benefit distribution is unbalanced, which leads to a deviation in the path to cultivated land protection.

Figure 1. Chinese topography and spatial distribution of cultivated land. (a) represents the topographic map of China; (b) represents the spatial distribution of cultivated land area in China.

2.2. Imbalance between Cultivated Land Protection Policy Objectives and Stakeholders

Cultivated land protection is a spatial allocation process in which multiple stakeholders participate in responsibility rights [60], and its stakeholders include the central government, local governments, and farmers [61,62]. However, the ambiguity of land property rights is the root of the interest game among multiple stakeholders involved in cultivated land protection in China [63]. The spatial allocation of cultivated land protection is both a complex process and an unbalanced relationship, which leads to a mismatch between the goals and achievements of central and local governments [64]. The central government assumes ensuring all social welfare as the basic goal, local governments focus on regional economic development, and farmers pay more attention to the production efficiency of cultivated land. The interest game among multiple stakeholders is a key reason for the failure of the cultivated land protection policy [65]. A principal–agent relationship is formed between central and local governments in the process of responsibility and rights distribution [66]. However, the rights and obligations of each subject are not clear, which can easily lead to responsibility shifting. The central government (the client) is the policymaker and must coordinate social, economic, and ecological development holistically. Local government (the agent) follows the logic of maximizing the benefits of local economy and political achievements, and its responsibilities as an intermediate principal are far greater than its rights. However, local governments are not all compensated accordingly, which easily leads to abuse of power by local governments and land violations. Farmers often fail to realize their rights and interests due to insufficient participation in public decision making. Finally, these actions have made a profound influence upon the replacement of policy objectives because of an imbalance of power, responsibilities, and interests.
2.3. Structural Contradiction between Restraint Mechanism and Incentive Mechanism of Cultivated Land Protection

Many scholars believe that a problem to be solved is establishing restrictive and incentive mechanisms to stimulate the enthusiasm of multiple stakeholders in cultivated land protection [31]. At present, cultivated land occupation and destruction frequently occur, the law enforcement mechanism is not perfect, protection responsibility is not clearly defined [67], and the cultivated land protection legal framework has not achieved legislative goals. In particular, China’s cultivated land resources are mainly distributed in the eastern monsoon area, and the high-quality cultivated land concentration areas are highly overlapped with the economically developed regions. Simultaneously, China’s cultivated land quantity gravity center is gradually migrated northward (Figures 1b and 2), combined with agricultural non-point source pollution, planting structure adjustment, natural disaster and ecological conversion, which will bring new challenges to China’s cultivated land protection in the new era. For example, due to the rapid urbanization occupying a large number of high-quality cultivated land, the existing cultivated land protection restrictive and incentive mechanisms are difficult to adapt to the practical needs of the development of ecological civilization in the new era, which may further aggravate the resource mismatch pattern of “South-to-North Water Transfer Project” and “North-to-South Grain Transport Project”, thus forming the endogenous contradiction of establishing restrictive and incentive mechanisms. In addition, governments at all levels bear responsibility for protecting cultivated land. The current administrative restrictive mechanisms fail to adjust the interest game of governments at all levels and cannot meet the actual needs of cultivated land protection [60,68].

![Image of cultivated land quantity gravity center migration](image)

**Figure 2.** The migration trajectory of cultivated land quantity gravity center in China from 2000 to 2017.

2.4. There Are Deficiencies in the Compensation Mechanism for Cultivated Land Protection

In recent years, the government and theory fields have explored the transformation of reliance on restrictive systems to an emphasis on both incentives and restraints, and the compensation mechanism of cultivated land protection is considered an important component [69]. The multi-functional spillover of cultivated land and the low cost of non-agricultural conversion are the main reasons for the loss of cultivated land [67]. Moreover, the profit losses in the process of cultivated land and non-grain conversion greatly reduce the enthusiasm of relevant stakeholders in cultivated land protection. Therefore, the construction of an economic compensation mechanism to compensate for the interests of multiple stakeholders in the process of cultivated land conversion could play a role in balancing the interests of relevant stakeholders in cultivated land protection [68]. However, the compensation mechanisms of cultivated land protection remain in the theoretical analysis and method exploration stages [70]. Currently, there is a lack of systematic research on many aspects, including the compensation subject, object, and compensation standards.
There are still some problems in the operation path and specific links of the regional compensation mechanism. In particular, regarding compensation for cultivated land protection, factors such as economic production conditions, resource endowment, and ecological environment are ignored. Additionally, the compensation mechanism for cultivated land protection needs to be improved in terms of complementing cultivated land from other areas and ecological compensation.

As a whole, the institutional system and policy context of cultivated land protection have basically taken shape, but the awareness of active protection at the farmer level has not been formed in society as a whole. Construction occupation continues to promote extensive use of cultivated land through a series of forms of transformation. Land comprehensive consolidation tends to increase land use indicators and there is not enough to prioritize improving the quality of cultivated land. At the economic and social level, the enthusiasm and initiative of various stakeholders for cultivated land protection are still in a passive state, that is, “no push, no go,” and soil pollution in different regions has not been effectively curbed. Although there are many research perspectives, content, and related concepts, the logic is the same. The CLPP must answer a key question: how can we effectively implement the trinity protection mode?

3. Research and Data Source

3.1. Research Method

Grounded theory is a qualitative research method, and its core idea is to first collect data and then encode the data level by level, refine the concepts, and compare them repeatedly without hypothesis by classifying and coding the original text materials (information fragments) [71,72]. Multiple concepts (concise definitions) reflecting real data are formed by repeatedly summarizing and comparing the key information points to gradually break through the stereotypes formed by the existing research. Thus, subjective path dependence among researchers is avoided (eliminating bias).

Therefore, what follows is the content with common characteristics (common convergence). However, the reliability and validity of coding should be ensured while mining the core categories of text data (theoretical saturation). Figure 3 shows the basic research steps needed for this paper based on grounded theory methodology.

![Figure 3. The grounded theory research method and process.](image-url)
3.2. Data Sources

The data in this paper mainly include two forms of policy text and statements by President Xi Jinping on cultivated land protection. This paper considers the CLPP from the founding of new China to today as the research object through the direct retrieval of the official websites of the CPC (the Communist Party of China) Central Committee and relevant state ministries and commissions. The relevant content of the research literature and the existing policy texts are retrieved retrospectively to obtain published policy texts related to cultivated land protection. To ensure that the information content of the policy is consistent with the theme, and that the texts are accurate, the following principles are followed: (1) the main content or part of the policy is directly related to cultivated land protection; (2) the nature of this policy is legislative documents within the scope of the law or other normative documents, such as binding opinions, measures, and notices formulated by the Party Central Committee, the State Council, and other state organizations.

4. Data analysis

4.1. Open Coding

Open coding is a process of cutting and giving concepts to words, sentences, paragraphs, and the whole text in the original materials. This process requires that the original materials be systematically classified, but the hidden concepts behind the materials be deeply excavated and combined with the research situation for an in-depth analysis of research problems (Figure 3). This method explores the key concepts hidden behind the original materials in the context of this research. For the open coding, the 71 data texts are read word by word followed by the principles of coding independence, openness, temporality, and revisability, which are constantly compared and summarized, and 94 initial concepts are condensed. According to the connotation and extension of each initial concept in the research context, 45 categories are formed, as shown in Table 1.

| Original Data | Labeling | Conceptualization | Categorization |
|---------------|----------|-------------------|---------------|
| In November 2013, when President Xi Jinping visited Shandong province, he said, “we should add wings to science and technology in agriculture and lay emphasis on increasing production and efficiency, combining good seed and good law, combining agricultural machinery with agronomy, and coordinating production ecology. We should promote the integration of agricultural technology, mechanization of labor processes, production and operation informatization, legalization of safety and environmental protection, and speed up construction of the technical systems required by the development of safe agriculture with high yields, high quality, high efficiency, and ecology.” | p1 We should speed up the construction of technology systems to meet the requirements of high yield, high quality, high efficiency, ecological, and safe agricultural development. | P1 High yield, high quality, high efficiency, ecological, and safe | PP1 Technical systems |
| In December 2013, President Xi Jinping delivered a speech at the central rural work conference, “The fundamental guarantee for national food security is cultivated land, and it is the lifeblood of grain production.” Farmers can be non-agricultural, but cultivated land cannot be non-agricultural. If the cultivated land is not farmed, we will have no land to live on. | p2 Farmers can be non-agricultural, but cultivated land cannot be non-agricultural. | P2 Cultivated land cannot be non-agricultural. | PP2 Lifeblood |
Table 1. Cont.

| Original Data                                                                 | Labeling                                                                 | Conceptualization                                                                 | Categorization                                                                 |
|------------------------------------------------------------------------------|--------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Circular on strengthening land management and stopping unauthorized occupation of cultivated land (the CPC Central Committee and the State Council, 1986) suggested initiatives to “strengthen land management and resolutely stop the illegal occupation and abuse of cultivated land,” urgent circular on forbidding development zones and urban construction from occupying cultivated land and abandoning it (General Office of the State Council, 1992); circular on strengthening the management of various development zones (General Office of the State Council, 2003); urgent circular on suspending examination and approval of various development zones. The General Office of the State Council, 2003, put forward “strictly control the loss of cultivated land”; circular on “no building houses in rural areas” (Ministry of Natural Resources, Ministry of Agriculture and Rural Areas, 2020) | A6 Strengthen land management and resolutely stop the illegal occupation and abuse of cultivated land. | A6 Unauthorized occupation of cultivated land is banned | AA3 Management control (A6, A10, A21, A72, A73) |
| Circular on resolutely stopping the “non agriculturalization” of cultivated land The General Office of the State Council proposed that the permanent basic cultivated land that has been included in the core reserve of nature reserves should be included in the ecological conversion and be withdrawn in an orderly manner. | A82 Ecological returning of cultivated land | A82 Ecological returning of cultivated land | AA37 Balance and coordination |

4.2. Axial Coding

The principal axial coding aims to analyze each category in the context of research and socio-cultural background. It not only eliminates the gap between theory and practice, but also improves the explanatory power of theory to social phenomena or behaviors. The connotations of the relationship between the main category and primary category are shown in Table 2.

Based on the qualitative analysis of NVivo12.0 software, this paper adapts human–computer cooperation to manage and code the data texts of CLPP, which will guarantee the reliability and consistency of the coding reach the qualified level. There are four basic problems that have been refined during literature review and study of policy texts, but the systematic research framework has not been set up before the coding process. The problems are as follow: What is the social foundation of CLPP? What is the institutional environment of its development? What kind of governance structure has been formed by CLPP? How does the policy system affect the allocation of cultivated land resources? On the basis of theoretical analysis and comparison of policy text materials, the coding analysis of the original data has been completed. For the principal axial coding process (Figure 3), this paper forms 22 main categories, including external environment, governance philosophy, internal conditions, stakeholders participation, rice bowl theory, red-line consciousness, bottom-line thinking, institutional rules, system construction, propaganda and guidance, support systems, internal core, external concurrence, composite space, new strategy, capacity increase, peasants’ subject positions, sustainability, pattern optimization, reform and innovation, improve the system, and ecological efficiency. Based on the dimension situation–structure–motivation–action–space–outcome, we define the logical relationship between primary categories in Table 2.
Table 2. Open coding and categorization.

| Dimension       | Main Category                  | Primary Category         | Connotation                                                                 |
|-----------------|--------------------------------|--------------------------|-----------------------------------------------------------------------------|
| **External**    | AA1 Consciousness awakening    | Farmers have their own land; there is clear ownership of rural land property rights. |
| **Situation**   | AA2 Clear concept              | We should establish the basic national policy of cultivated land protection and pay attention to the protection and rational use of cultivated land. |
| **Governance**  | PP3 Panda theory               | Cultivated land is the most valuable resource in China, and as vital as the protection of the giant panda. |
| **Internal**    | AA20 Production environment    | It is necessary to classify soil organic matter and improve soil quality. |
| **Internal**    | AA22 Factor input              | New agricultural inputs, such as new fertilizers, low toxicity and high efficiency pesticides, multi-functional agricultural machinery, and degradable agricultural film should be developed. |
| **Structure**   | AA34 Multiple stakeholders participate | Encourage government and social capital cooperation (PPP) mode, guide rural collective economic organizations, farmers, and new agricultural operators. |
| **Rice bowl**   | PP4 Keeps the rice bowl        | Chinese people need to put their rice bowls in their own hands and hold their own food. |
| **Red-line**    | PP5 Keep red line              | Keep the red line of cultivated land protection firm. |
| **Motivation**  | PP2 Lifeblood                  | Cultivated land is the lifeblood of food production. |
| **Bottom-line** | AA27 Bottom line thinking      | We should stick to the four bottom lines: no change in the nature of public ownership of land, no breaching the red line of cultivated land, no reduction in grain production capacity, and no damage to farmers' interests. |
| **Institutional**| AA3 Management control        | Using mandatory policy tools to strengthen land management, stop unauthorized occupation of cultivated land, stop “non-agricultural” cultivated land use. |
| **rules**       | AA4 Constraint incentive       | Permanent basic cultivated land protection, spatial planning, three-line delineation. |
|                 | AA6 Command control           | Strictly control incremental and classified management, economical and intensive utilization of land use. |
|                 | AA8 Technology                | Topsoil stripping, national cultivated land reserve resources survey and evaluation, land and resources remote sensing monitoring “one map”, conservation tillage. |
|                 | AA10 Supervision and inspection | Supervision and assessment, local government responsibility, and natural resources supervision. |
| **Action**      | AA11 Land use regulation      | Land use regulation institution. |
|                 | AA12 Law responsibility       | The crime of destroying cultivated land should be established. |
|                 | AA13 Index control            | Cultivated land index, construction land index, agricultural land conversion index. |
|                 | AA18 Economic measure         | Land reclamation fees, cultivated land occupation tax. |
|                 | AA14 Broaden channels and control total amount | Quality improvement, combination of compensation and improvement, and improvement from drought to water; attract social capital and financial capital to participate in land consolidation and high standard cultivated land construction. |
| **System**      | AA16 Capacity reserve         | A reserve of cultivated land quantity, paddy field, and production capacity should be established. |
| **construction**| AA25 Land consolidation+      | Relying on the cultivated land protection mechanism driven by land consolidation technology innovation, a land consolidation mechanism dominated by the government, dominated by farmers and participated by the society will be formed. |
### Table 2. Cont.

| Dimension          | Main Category                        | Primary Category               | Connotation                                                                 |
|--------------------|--------------------------------------|-------------------------------|-----------------------------------------------------------------------------|
| Propaganda and guidance | AA5 Propaganda and guidance          |                               | Strengthen the propaganda of cultivated land protection.                    |
|                    | AA29 Ecological compensation         |                               | Ecological compensation system for forest, grassland, wetland, and soil and water conservation. |
|                    | AA7 Balance of occupation and        |                               | Land requisition and compensation.                                          |
| Supporting system  | AA17 Joint responsibility system     |                               | Responsibility system of cultivated land protection, off-office auditing of cadres. |
|                    | AA24 Economic compensation incentive |                               | Compensation mechanism of cultivated land protection.                       |
| Internal core      | AA9 Quantity security                |                               | Cultivated land reserved.                                                   |
|                    | AA23 Ecological elasticity           |                               | Ecosystem protection of cultivated land.                                    |
|                    | AA26 Quality tapping potential       |                               | High standard construction of basic cultivated land, prevention, control, and remediation of heavy metal contaminated cultivated land. |
| External concurrence | AA30 Rotation fallow                |                               | Rotation and fallow of cultivated land.                                     |
| Space              | AA32 Game competition                |                               | Construction occupation and agricultural structure adjustment.              |
| Composite space    | AA35 Key protected areas             |                               | Grain production function zone and important agricultural product protection zone. |
| New strategy       | AA19 Rural revitalization strategy   |                               | All the income from adjustment is used to consolidate the achievements of poverty alleviation and support rural revitalization. |
|                    | AA21 International trade adjustment  |                               | Make use of the international agricultural product market and agricultural resources to effectively adjust and supplement the domestic food supply. |
|                    | AA28 Urban-rural integration         |                               | Break the institutional barriers that hinder the free flow and equal exchange of urban and rural elements. |
| Capacity increase  | AA15 Comprehensive production       |                               | Steadily improve the comprehensive grain production capacity.               |
| Outcome            | AA31 Peasantry’s inclination         |                               | Respect peasantry’s inclination and implement them in a safe and orderly manner. |
|                    | AA33 Farmers’ interests              |                               | Farmers’ interests will not be damaged.                                    |
| Peasants’ subject positions | AA36 Continue increasing productivity |                               | Comprehensively enhance the capacity of sustainable yield increase of cultivated land. |
| Sustainability     | AA38 Quantity-ecological- quality all in one |                               | New pattern of special protection of permanent basic cultivated land with strong protection, intensive and efficient management, and strict supervision. |
| Pattern optimization| AA39 Improve means                   |                               | Improve the balance in the management of cultivated land occupation and compensation. |
| Reform and innovation | AA40 Policy system                  |                               | The permanent basic cultivated land management and control system, cultivated land protection system, and balance policy system need to be further improved. |
| Improve the system | PP1 Technical system                 |                               | Accelerate the construction of the technology system to meet the requirements of high yield, high quality, high efficiency, ecological, and safe agricultural development. |

#### 4.3. Selective Coding

After continuous comparison of the main categories (Figure 3), it is clear that the core category of this paper is “the operational logic of CLPP”. Around this core category, we derive six dimensions of situation, structure, motivation, action, space, and outcome. This
The paper defines theory as the theoretical model of cultivated land protection operation logic, as shown in Figure 4.

**Figure 4.** The theoretical model of the CLPP operation logic in China.

Figure 4 shows that “Situation” refers to all types of environment in the CLPP process, including natural, social, economic, and other institutional environments; “Structure” refers to the allocation of resources by different actors in the process of cultivated land protection, and the structural relationship between different actors will also affect the process of policy operation; “Motivation” refers to the goal tendency or internal driving force of cultivated land protection policymaking; “Action” refers to the selection and use of relevant policy tools by relevant stakeholders in the process of cultivated land protection; “Space” refers to the spatial division of CLPP implementation; and “Outcome” refers to the specific efficiency or result of CLPP implementation.

4.4. Theoretical Saturation Test

Theory saturation means that the newly collected data cannot make a new contribution to the theoretical construction, which is used to identify the decision to stop sampling (Figure 3). We recoded and classified the remaining 20 CLPP texts and found no new concepts and categories and no new changes in the relationship between concepts and categories. This shows that the theoretical model shown in Figure 4 has passed the theoretical saturation test and has strong practical explanatory power.
5. Discussion

The cultivated land protection system has been implemented for more than 40 years in China. While it has achieved positive results, there are also some new contradictions and problems. To further promote the theoretical and practical innovation of cultivated land protection systems, problem awareness and goal orientation should be intensified, and there should be increased efforts to solve the challenges and difficulties of the new era. A breakthrough in theoretical innovation and the research on the essential stipulation of objectives and directions, thinking and ideas, elements and structures, mechanisms, and paths is required. Relying on regional cultivated land resource endowments integrates sustainable development, green development, and other elements in ideas, concepts, and implications. We emphasize the need to change “two-dimensional protection” into “three-dimensional protection”, “passive protection” into “active protection”, and “external push-pull” into an “endogenous driving force”. The mechanisms and path of cultivated land protection aim to achieve sustainable development and food security at the macro level, coordinated regional development and flexible space of cultivated land protection at the meso level, and innovation of cultivated land use and stimulation of endogenous power at the micro level. From a practice-deepening perspective, simplistic, representational, and sportive policy implementation should be avoided in favor of building a dynamic and balanced virtuous circle mechanism using “government and market” and “responsibility and incentives”. The combination of “macro–meso–micro” common direction, which contains the characteristics green, sustainability, initiative, prevention, and control, will span the whole process of cultivated land protection and be cast in the work of coordinating the spatial connection between the quantity structure and quality toughness of cultivated land. Tunneling through the environmental Kuznets curve should guide the conceptualization of the essential provisions for constructing long-term mechanisms for cultivated land resource use and protection. The following is mainly based on the subject–action–space dimension that explains the operation logic of cultivated land protection in China.

5.1. Stakeholders Logic

Under the complex institutional change environment from agricultural civilization to industrial civilization and then to ecological civilization, and from a planned economy to a market economy, the main structure of cultivated land protection is formed with government leadership. Farmers compose the main body, and there is social participation motivated by red-line consciousness and bottom-line thinking (Figure 4). All parties follow the inclusive interest theory logic of Olsen’s collective action in the profit-seeking game. The central government should comprehensively coordinate social, economic, and ecological aspects and formulate relevant norms at the macro level. Local governments face the contradiction between non-agricultural economic benefits and protection against economic costs, which leads to weak implementation. However, farmers are selective when protecting cultivated land based on farming benefits. From the perspective of the logic mechanism of CLPP, the long-term existence of weak actionability and limited thinking and cognition are mutually superimposed, which creates a strong incentive for multiple stakeholders to fall into Olsen’s collective action. That is, limited livelihood capital is constrained by the ability to take action, which is difficult to effectively transform in the operations of the socio-economic system but also shows a decreasing trend due to continuous loss. Accordingly, it will also inhibit the enthusiasm of the main protectors and accelerate the reverse cycle between cultivated land protection and actionability. First, the cultivated land protection system has the regulatory dimension of national compulsion and implementation guaranteed by national compulsion. Its highly differentiated organizational structure provides a stable organizational and institutional environment for the implementation of CLPP. The pressure of local financial and political promotion, high-pressure accountability performance appraisal mechanisms, and inefficient policy supervision mechanisms under fiscal and tax decentralization provide an institutional driving force for the local government to block the implementation of CLPP. Second, the weak values in the normative
5.2. Action Logic

The action logic of cultivated land protection is to reasonably intervene in the system operation of cultivated land protection by means of economic and technical tools, laws and regulations, administrative supervision, and other means, on the premise of adhering to the red line of cultivated land and ensuring food security to achieve Pareto optimization of resource elements (Figure 4). This optimizes natural resources, market elements, and social levels and then builds a transaction system oriented by the functional integration of cultivated land use systems if required. Similarly, by focusing on optimizing the spatial patterns of cultivated land protection, a solid foundation could be laid to improve the sustainable production capacity of grain and promote the sustainable and intensive development of cultivated land use. For example, for disaster prevention and control, coupling the motivation to seek advantages and avoid the disadvantages of cultivated land use with agricultural-induced production substitution behaviors and narrowing the income gap between urban and rural areas will reduce the pressure of cultivated land to promote national economic growth. These steps are critical to promoting the components of cultivated land ecosystems from damage to recovery. It is also critical to improve the technical level and efficiency of integrated prevention and control of biological disasters by increasing crop diversification [68]. Specifically, on the one hand, in terms of green development, it is possible to create, construct, and improve green initiatives and conditions of market operations, such as the biological seed industry, heavy agricultural machinery, smart agriculture, and green inputs. On the other hand, operational mechanisms should be constructed, such as land use regulation, balance of occupation and compensation, constraints and incentives, and economic compensation as a guarantee based on greater visibility of high-quality green development. There should be guidance, encouragement, and support for new agricultural operators who integrate modern agricultural production holistically creating rural collective economic organizations. Farmers and new agricultural business entities should be more active in protecting cultivated land. Furthermore, through these actions, a joint force to protect cultivated land and promote the use and protection of cultivated land resources with high-quality economic and social benefits should be formed.

5.3. Space Logic

Space is the carrier of the subject and action. According to the standard of spatial scale, cultivated land use systems can be divided into internal core, external concurrence, composite space, and new strategy. From quantity protection to both quantity and quality, and then to adhere to the trinity pattern of quantity control, quality management, and ecological management and protection, cultivated land protection in China has gradually formed an internal core space. That core space is composed of a stable quantity safety zone, a quality potential tapping zone, and a sustainable ecological elastic zone. In particular, external competition and cooperation space is composed of a game competition to resolve use conflicts and balance. Coordination emphasizes complementary integration, rotation, and fallow space to emphasize recuperation. The new strategic space is composed of rural revitalization to coordinate the development, an urban–rural integration space emphasizes organic interaction, and a key development space relies on the composite ecosystem (Figure 5). With the continuous progress of ecological civil construction, the space and function of cultivated land face a contradiction of imbalance and insufficiency, which is mainly reflected in the spatial conflict between the pollution and damage of cultivated
land and the conflict between the production function and ecological service function of cultivated land. For instance, the excessive application of chemical fertilizers and pesticides leads to three-dimensional pollution of soil and water biogenesis, the mismatch between single-crop cultivation and multi-dimensional ecological water resources efficient use mode, and the excessive neglect of the role of cultivated land forest network construction. In the future, under the requirements of ecological civilization construction, there will be 25.13 million ha of cultivated land, accounting for 18.5% of the total cultivated land in China [41]. This land must be managed by adjusting to local conditions and using fallow rotation to reconcile regional ecological risks. Therefore, we should internalize the positive externality of the internal core space through intensive management and ecological production; shape the external competition and cooperation space of population, resources, environment, economy, ecology, and policy; and expand the new strategic space of resource-saving, environment-friendly, and ecological conservation efforts.

5.4. Systematic Integration Logic of Stakeholders–Action–Space

From the perspective of the occurrence mechanism, the three dimensions of subject, action, and space are interwoven, embedded, and coupled in each link of the input–conversion–output–feedback in CLPP operation. In the internal core space, external competition, cooperation space, and new strategic space are the ultimate goals of cultivated land protection. The logical starting point is the relationship between the types and structures of cultivated land use in different spaces, which sometimes evolve into mutually restraining variables (Figure 4). For example, having more organic carbon and nitrogen in the internal core space can usually increase food production and help achieve the goals of food security and climate change mitigation [2]. However, nitrogen management of cultivated land in the external competition and cooperation space and the new strategic space becomes particularly complex because the natural endowment of regions is geographically different, and various types of soil will convert part of the input nitrogen into N₂O, thus increasing the burden of greenhouse gases [4]. The main body of cultivated land use in different spaces chooses the corresponding management behavior based on their cognition, and the

![Figure 5. The theoretical model of the CLPP operation logic in China.](image-url)
cultivated land protection action formed in this process is not unified but is closer to the trade-off synergy of spatio-temporal differentiation. Therefore, the Chinese government has begun to implement a series of measures to promote the transformation of China’s grain production. With these measures, the objectives of cultivated land protection are expanded. One measure is to ensure the safety of agricultural product supply and the other is to protect agricultural resources and the ecological environment. Therefore, the integrated logic of subject-action-space of cultivated land protection is not the cultivated land resource itself but that the external environment is composed of the social system, economic development, and cultural consciousness. It is particularly obvious that the use and protection of cultivated land contains a huge opportunity cost, and responsibility and incentives are an indispensable regulatory measure to guide and regulate the behavior of new agricultural operators. At the same time, ecological governance and comprehensive compensation mechanisms play a substantial role in balancing the relationship between market supply and demand, the scarcity of agricultural products, and the benefits of ecological restoration [21]. We should explore the third-party governance model represented by social capital, particularly agricultural machinery services for small farmers and the organization and management of agricultural enterprises.

In short, there is a complex relationship between the multiple stakeholders of cultivated land use and protection (Figure 6). Their actions are mainly affected by the external factors of cultivated land protection. The conflict and bridging of different spaces have become an inexhaustible driving force for the development of a cultivated land protection system. In the future, the spatial distribution of cultivated land should be optimized according to the light and heat suitability of soil and water to agricultural production to highlight the targeted effect of green management of cultivated land. Based on the mutual coupling of various spatial types, ecological management measures should be implemented accurately to achieve the status of a basically stable layout, no reduction in quantity, no degradation of ecology, and improvements in quality to accelerate the spatial layout of cultivated land quantity, quality, and ecology in a coordinated and sustainable development direction. Meanwhile, the green power of multiple stakeholders, the adjustment of actions, spatial resilience, and multi-functional integration should be strengthened. The main responsibility of cultivated land protection is overall protection, system restoration, and comprehensive management. In addition, it is essential to integrate big data, artificial intelligence, and other modern technologies with operation processes to provide technical support for the information supply of sustainable use of cultivated land and reshape the cultivated land protection system in the new era.
Figure 6. The theoretical model of the CLPP operation logic in China.

6. Conclusions

This paper takes the policy texts of CLPP as the research object by grounded theory and analyzes the major dilemmas and operation logic of CLPP. We show that the logic operation of the CLPP is based on situation–structure–motivation–action–space–outcome. More attention should be paid to the logical operation of the CLPP in China, which we explain in
detail by analyzing the relationship among stakeholders, action, and space. The research conclusions help to identify the mechanisms of CLPP and to clarify the factors affecting the implementation of protection behavior. The research conclusion also sheds light on the obstacles faced by cultivated land protection in the process of ecological transformation and can guide improvements in protective measures. The key findings are as follows:

(1) The basic logic of the CLPP operation is to take the ultimate goal of cultivated land protection as the logical starting point and red-line consciousness and bottom-line thinking as the motivation. Based on a structure of government leadership with farmers as the main body and with social participation, this policy takes Pareto optimization of resource elements as the main direction. Multiple measures, such as the economy, technology, laws and regulations, and administrative supervision stimulate the functional integration of cultivated land use system. Then, relying on the internal core space, external competition and cooperation space, composite space, and new strategic space, the spatial pattern of cultivated land protection is optimized. The three dimensions of subject, action, and space are intertwined, embedded, and coupled in the input–conversion–output–feedback, and the conflict and bridging of different spaces become the inexhaustible driving force for the development of a cultivated land protection system. Therefore, we believe that the key to guaranteeing the effectiveness of CLPP in the future lies in solving the contradiction between theoretical abstraction and practical execution. Accordingly, we should distinguish the policy types and implementation methods of command control, economic incentive, and publicity guidance. In different stages of economic and social development, the optimization and combination of multiple policy tools should be reasonably used to ensure the effect of cultivated land protection. Moreover, in order to reduce the negative externality of cultivated land occupation, we should appropriately increase the comprehensive cost of converting cultivated land into construction land, and improve the efficiency of optimal allocation of land resources through land marketization measures. At the same time, land marketization measures should also be taken to improve the efficiency of optimal allocation of land resources.

(2) CLPP is a comprehensive system of human development and natural protection information, which integrates administration, the economy, technology, and culture. In the practice of national agricultural regionalization protection, the theory of cultivated land use and protection is consolidated. The CLPP continues to maintain continuity, stability, and sustainability, and plays a supporting role in China’s socialist modernization. The value and importance of CLPP in this era are reflected in the practice of the new development stage, new development concepts, and new development patterns of cultivated land protection. The completion of the goals and tasks of cultivated land protection does not mean the end of the system, but that China will continue to implement the world’s most stringent cultivated land protection system. The evolution process of CLPP is the result of the game of multiple stakeholders, which shows significant path dependence characteristics. Therefore, how to use policy implementation to effectively improve the self-enthusiasm of stakeholders has become the key to the innovation of cultivated land protection system in the future. In particular, we should find a safety coefficient interval to balance the cultivated land protection and construction needs of CLPP, and coordinate the interest demands and bureaucratic structure of different subjects. Some pension policies, low interest loan policies, preferential taxes, and other policy compensation should be explored in the institutional framework of cultivated land protection. In addition, we should strengthen agricultural production technology, agricultural product marketing, and other supporting measures to improve the enthusiasm of agricultural managers.

(3) CLPP should be based on the connotation of cultivated land and its protection objectives, and then implement adaptive governance for different forms of cultivated land use. Some factors such as the allocation of land use indicators and their marketization should also be fully considered to ensure the authority and applicability of the
policy. Simultaneously, we should promote the legislation of cultivated land protection from the aspects of legal concept, control methods, compensation means, target responsibility, which will be beneficial to improve the systematization and integrity of the legal system related to cultivated land protection. Furthermore, the cultivated land protection system needs to cope with the transformation of cultivated land use brought about by climate change, smart agriculture, and food system transformation, and it must become more inclusive and sustainable in the process of ecological governance. The system can support the higher productivity levels of economic growth, such as sustainable intensification of cultivated land use. Scientific and technological innovation and technology integration play various roles in the implementation of cultivated land protection systems, which can create extensive efficiency. In addition, accurate assessment of human needs, seed quality, cultivated soil, and agricultural product trading will be the basis for effective protection of cultivated land.

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