

The Impact of High-Standard Farmland Construction on Agricultural Total Factor Productivity

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Received: 28 June 2026; **Accepted:** 19 July 2026; **Published:** 13 August 2026

Abstract:

High-standard farmland construction plays an important role in improving cultivated land quality and increasing agricultural production capacity. This paper looks at its relationship with agricultural total factor productivity (TFP). It reviews the existing literature, discusses what is already known, and points out several questions that still need more study. The paper pays attention to both the effects of high-standard farmland construction on agricultural productivity and the ways through which these effects may happen. It also uses national survey data and practical cases from villages and townships in different regions of China to discuss the changes after project implementation and some problems found in practice. On this basis, several policy suggestions are given. The paper also briefly discusses the limitations of existing studies and a few issues that could be explored in future research. It is hoped that this review can help explain the role of high-standard farmland construction in agricultural development and provide some ideas for improving related policies.

Keywords:

High-Standard Farmland, Agricultural Total Factor Productivity, Case Study

1. Introduction

Agricultural high-quality development has become an important goal of China's agricultural and rural modernization in recent years. With cultivated land resources becoming more limited, ecological and environmental pressures increasing, and food security receiving more attention, the traditional development model based mainly on expanding inputs and output can no longer meet current needs. More attention has therefore been given to improving the quality, efficiency, and sustainability of agricultural development [1].

The new development philosophy has provided an important direction for agricultural high-quality development. It emphasizes innovation, coordination, green development, openness, and sharing. Compared with the traditional development model, more attention is now given to technological progress, better use of resources, and environmentally friendly agricultural production. This policy orientation can also be seen in recent government documents. The 2021 No. 1 Central Document identified high-quality development as an important task of agricultural modernization. The 2025 No. 1 Central Document further proposed developing new quality

productive forces in agriculture, showing a stronger emphasis on innovation-driven development. Existing studies usually explain agricultural high-quality development from several aspects, including the new development philosophy, the characteristics of development outcomes, and the role of new quality productive forces [2]. Some researchers also use bibliometric analysis and text-mining methods to look at how this research area has developed over time [3].

Against this background, high-standard farmland construction has gradually received more attention in policy discussions. It is mainly aimed at improving farmland quality and agricultural infrastructure. In policy documents, it is also linked with the idea of agricultural high-quality development and, more recently, the development of new quality productive forces in agriculture.

To evaluate whether these goals are actually achieved, researchers need some kind of indicator. Agricultural total factor productivity (TFP) is often used for this purpose. It is mainly because it reflects things like efficiency of resource use, technological progress, and overall production performance in agriculture.

Many existing studies have already looked at the economic effects of high-standard farmland construction, but the conclusions are not always the same. Some studies find positive effects on agricultural TFP, while others are less certain. The mechanisms behind these effects are also still not very clear. In addition, it is still an open question whether the effects are consistent across different regions, especially between major grain-producing areas and non-major grain-producing areas.

These issues matter both in research and in practice. TFP is widely used as a way to judge how well agricultural development is going. At the same time, farmland resources are becoming more limited, and food security is more important than before. So it becomes necessary to understand more clearly how infrastructure investment actually affects productivity. High-standard farmland construction is also a large-scale national program, involving a lot of public spending, and it does affect both agricultural production and rural households. Because of this, understanding its real effects and how they work is still quite important for policy making.

Previous studies have already given many useful findings, but they are still quite scattered. For example, economies of scale and technology adoption are often studied separately, even though they may actually work together. Also, results from national-level studies are not always the same as those from local case studies. So it may be useful to put these different types of evidence together.

This review therefore brings together evidence from county-level panel data studies, policy evaluation work, TFP decomposition analysis, and regional case studies. It looks at how high-standard farmland construction may affect agricultural productivity, the differences across regions, and some factors that may limit efficiency gains in major grain-producing areas. By combining these different types of studies, the review tries to give a more general picture of what is currently known, and what still needs further work.

2. Literature Review

2.1. Main Streams of Research

Research on high-standard farmland construction and agricultural total factor productivity (TFP) has increased in recent years. The literature in this area seems to

fall into a few main strands, although the boundaries are not always very clear. These include studies on how agricultural TFP is measured, work that looks at the effects of high-standard farmland construction, and research that discusses possible regional differences in these effects.

2.1.1. Measurement and Sources of Agricultural TFP Growth

A large number of studies focus on measuring agricultural TFP and explaining where the growth comes from. In general, two main types of methods are used. One is the parametric approach, such as Stochastic Frontier Analysis (SFA). The other is the non-parametric method, especially the DEA-Malmquist index. Based on these methods, TFP is usually broken down into technological progress, pure technical efficiency, and scale efficiency.

Using county-level data, Xu Tianyong and Li Zefeng [4] find that efficiency improvement has played a more important role in China's agricultural TFP growth. In contrast, technological progress seems to contribute less. Gan Tianqi et al. [5] reach a similar conclusion. Their stochastic frontier results suggest that the speed of technological change is relatively slow, and this has limited overall TFP growth, although there is still room for improvement in both technical efficiency and scale efficiency. Yu Kang et al. [6], after reviewing related studies, also describe China's agricultural productivity growth as mainly driven by efficiency rather than technological progress.

Building on these findings, Liu et al. [7] further show that the impact of high-standard farmland construction on productivity is not the same across regions. It depends quite a lot on local conditions and the broader rural development environment.

2.1.2. Economic Outcomes of High-Standard Farmland Construction

Another direction of research is about the economic effects of high-standard farmland construction. In most studies, there is a relatively common view that better irrigation and drainage systems, improved field roads, and higher-quality farmland can improve basic agricultural production conditions. These changes usually help reduce production costs, and grain output also becomes a bit more stable.

At the household level, Yu Yongqi et al. [1] mention that high-standard farmland construction may increase rural household income. Some other studies look at the issue from a broader rural development angle. For example, Ran Yi et al. [8] discuss the effects on production, living, and ecological functions in rural areas. Their work is mainly based on mountainous and hilly regions in Southwest China.

Taken together, these studies more or less suggest that the impact of high-standard farmland construction is not only about agricultural production itself. It may also touch different parts of rural life and development at the same time.

2.1.3. Regional Differences in Policy Effects

Some recent studies have started to pay more attention to regional differences in how high-standard farmland construction actually works. The effects of the policy are not exactly the same in all places. In general, it seems to vary a lot depending on local conditions, like resource endowment, farming habits, and also what each region is mainly trying to achieve.

One point that is often mentioned is the difference between major grain-producing areas and other regions. In major grain-producing areas, there are usually stricter requirements for grain production. Because of this, farmers may have less flexibility in choosing crops or adjusting how land is used. Some studies think this could make the improvement in productivity from high-standard farmland construction less obvious in these areas. In a few cases, the effect may even look weaker or slightly negative compared with other regions [5].

Overall, it seems that the same policy does not always lead to the same result. It depends quite a lot on the regional setting and the institutional background.

2.2. Research Gaps in the Existing Literature

Although the literature on this topic has increased in recent years, there are still some problems that have not been fully solved. One is that many studies still rely on provincial-level data, while county-level evidence is relatively limited. Because of this, it is sometimes difficult to see what is actually happening at the local level.

Another issue is that a lot of studies focus mainly on policy outcomes, but do not really go deep into the mechanisms. Things like scale economies and technology adoption are often mentioned, but they are not always studied in detail.

Regional differences are also still not very clear. Some studies suggest that the effects are weaker in major grain-producing areas, but there is still no very clear or systematic explanation for why this happens, or how large the difference really is.

In addition, different parts of the literature are often not well connected. For example, policy evaluation studies, TFP decomposition studies, and regional heterogeneity studies are usually done separately. Because of this, the overall understanding of how high-standard farmland construction affects agricultural productivity still feels a bit scattered.

This review tries to put these different pieces together again. It looks at the relationship between high-standard farmland construction and agricultural TFP, and pays attention to both mechanisms and regional differences.

3. The Impact of High-Standard Farmland Construction on Agricultural Total Factor Productivity

3.1. Whether Policy Effects Exist

Most studies in the literature find that high-standard farmland construction has a positive effect on agricultural total factor productivity (TFP). Some empirical evidence based on multi-period difference-in-differences (DID) models using county-level data shows that areas with higher investment in high-standard farmland construction usually experience higher TFP. The effect seems to be more obvious in non-major grain-producing areas, where productivity increases of more than 10 percent have been reported after the policy was implemented [4].

Studies that use provincial data also show more or less the same result [6]. Even though provincial-level data may hide some local differences, the general picture is still that high-standard farmland construction seems to improve agricultural efficiency.

But the effect is not always immediate. Several studies mention that productivity improvement usually does not appear right away after the project is finished. It often

takes some time, maybe one or two years. After that, the effect tends to become more stable. So in a way, it looks like infrastructure needs a period before it actually turns into productivity gains [4].

There are also differences across regions. Many studies point out a contrast between major grain-producing areas and non-major grain-producing areas. In non-major grain-producing areas, the positive effect is usually easier to see. In major grain-producing areas, however, the effect is weaker, and in some cases it is even negative.

Some explanations have been given for this difference. In major grain-producing areas, grain production responsibilities are relatively strict, so farmers have less flexibility in choosing crops. They often keep planting staple crops like wheat and corn. Compared with cash crops or livestock, these activities usually bring lower returns. So even if farmland conditions improve, the increase in productivity is not always very obvious [5,6]. In the end, the effect of high-standard farmland construction is not always fully reflected in agricultural TFP.

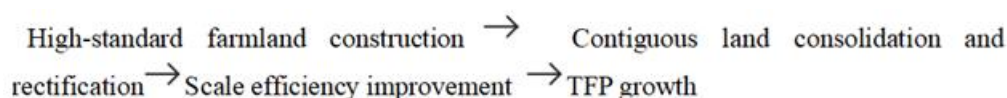
3.2. How High-Standard Farmland Construction Influences Agricultural TFP

High-standard farmland construction improves agricultural TFP primarily through the following two core channels.

3.2.1. Economies of Scale Mechanism

Path:

Figure 1. Transmission pathway of the economies of scale mechanism

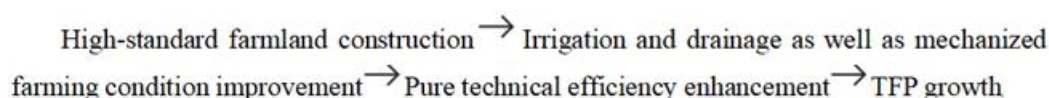


One idea that appears quite often in the literature is that high-standard farmland construction may have something to do with larger-scale farming. With land consolidation and better field infrastructure, especially machine-accessible roads, land transfer and more centralized management can become a bit easier in practice. Because of this, family farms, cooperatives, and other larger operators may find it slightly easier to expand their scale in some cases. After these changes, some of the problems of smallholder farming may be reduced. This mainly includes fragmented plots, low level of mechanization, and relatively high management costs. When farming becomes more large-scale, machinery and other inputs can usually be used in a more efficient way, and labor use also becomes more organized. Production costs may go down, and the use of cultivated land may become more efficient. In existing studies, these changes are often summarized as an improvement in scale efficiency [5].

3.2.2. Technology Adoption Mechanism

Path:

Figure 2. Transmission pathway of the technology adoption mechanism



A second mechanism is related to the use of agricultural technologies. When irrigation and drainage conditions improve, it becomes easier to apply technologies

such as water-saving irrigation, soil testing and formula fertilization, and integrated pest management. These technologies themselves are not new, but the conditions for using them are better after infrastructure is improved. At the same time, better field roads also make it more convenient to use modern agricultural machinery. Supporting facilities like electricity supply systems may also make it possible to use technologies such as electric irrigation, greenhouse production, and storage of agricultural products. In practice, these improvements do not really introduce new technologies, but more about how existing ones are used in daily farming activities. Because of this, farmers may be able to produce more output with similar levels of input. In the literature, this is usually described as an improvement in pure technical efficiency [4, 5].

3.2.3. Relative Importance of the Two Mechanisms

The evidence in the literature suggests that the importance of the two mechanisms is not the same across regions. Many empirical decomposition studies find that pure technical efficiency tends to play a larger role in agricultural TFP growth compared with scale efficiency. This seems to be more obvious in hilly and mountainous areas, where fragmented plots and difficult terrain have long limited the use of modern agricultural technologies. In relatively flat areas, however, the advantages of larger-scale farming are often more visible.

Another point that is mentioned quite often in existing studies is that high-standard farmland construction does not seem to have a strong direct impact on frontier technological progress. Its main role is more about helping the spread and better use of technologies that already exist, rather than creating new technological breakthroughs. In simple terms, it improves how farmers use technology, but does not really push the technological frontier forward in a major way.

This view is also consistent with what many studies on agricultural TFP in China have found, where efficiency improvement is usually more important than technological progress [4,6].

4. Real-World Cases: Practices in Different Regions of China

4.1. National-Level Evidence from Macro Surveys

Based on a large-scale questionnaire survey covering 28 provinces, Chen et al. [9] give an overall picture of how high-standard farmland construction has been implemented in China. Their results show that completed projects are mainly located in the middle and lower reaches of the Yangtze River, the Huang-Huai-Hai Plain, and Northeast China. In many other regions, there is still a clear need for further upgrading or renovation of existing facilities. Problems such as uneven investment, differences in construction standards, and weak post-construction management are also quite common.

Looking more closely at existing projects, several issues appear repeatedly. One is the gradual aging or deterioration of infrastructure, especially irrigation and drainage systems and field roads. Another is related to soil quality decline. Low soil organic matter is often mentioned in many regions. Some studies also report other problems, such as aging of land improvement works, outdated power supply systems, soil compaction, and insufficient soil depth. In some places, more serious land degradation problems like desertification, acidification, and salinization can also be found, although the degree is not the same everywhere [9]. Overall, it seems that although

the construction area has expanded, the issues of maintenance and long-term land quality improvement are still not fully solved.

To show how high-standard farmland construction works in different areas, this paper also looks at two typical cases: Bijie City in Guizhou Province, which is a mountainous non-major grain-producing area in western China, and the southern plain of Hebei Province, which is a flat major grain-producing area in eastern China [2,10].

4.2. Bijie City: Practices in Mountainous Non-Major Grain-Producing Areas

Bijie City is located in the northwest of Guizhou Province. The area is mostly mountainous and hilly, and farmland is relatively fragmented. A large proportion of cultivated land consists of medium- and low-yield plots. By 2024, the city had developed about 206,900 hectares of high-standard farmland, which is roughly 25.41% of total cultivated land [2].

Before high-standard farmland construction was carried out, agricultural production in many parts of Bijie was restricted by a mix of natural conditions and local socio-economic factors. Fields were small and scattered, which made it difficult to use large machinery. In many places, farming still depended mainly on manual work or animal power. Irrigation systems were also quite weak, so production depended heavily on rainfall, and crops were easily affected by drought or flooding. Field roads were not well developed, which made transporting inputs and harvested grain inconvenient. At the same time, a large number of young people left for work in cities, so rural labor was mostly elderly. This also weakened farming capacity and, in some cases, farmland was partly left uncultivated.

After the implementation of high-standard farmland projects, some changes can be seen, although they are gradual rather than immediate. Land consolidation reduced fragmentation to some extent by merging scattered plots into more continuous fields. Machine-accessible roads were also built, which made it easier to use agricultural machinery in production. Irrigation conditions improved as reservoirs and water channels were constructed, and sprinkler and drip irrigation were introduced in some areas, making water supply more stable.

On this basis, some farming practices started to appear more frequently. These include soil testing and formula fertilization, green pest control, and the use of improved seed varieties. These changes are not only the result of new technology itself, but also depend on whether local infrastructure makes these practices actually usable in daily farming. In some places, cooperatives and family farms played a more visible role in organizing production. There were also efforts to involve villagers in construction and later maintenance of facilities. In a few cases, new management arrangements combining insurance and service-based maintenance were tried to keep facilities working in the long term.

A village-level case in Qixingguan District gives a more concrete picture. Before land improvement, corn yield was around 350 kg per mu. After land leveling, canal renovation, and road building, yield increased to about 420 kg per mu. At the same time, labor costs fell by roughly 30 percent, and the use of agricultural machinery rose from below 20 percent to around 65 percent. Some households also saw changes in income structure. Income from land transfer rent and non-farm agricultural work together contributed to an average annual increase of about 5,000 yuan per household [2].

4.3. Southern Hebei Plain: Practices and Constraints in Major Grain-Producing Areas

The southern plain of Hebei Province is part of the Huang-Huai-Hai region. It includes 25 counties (districts) under Xingtai and Handan, with more than 12 million mu of cultivated land. According to the Hebei High-Standard Farmland Construction Plan (2021–2030), the area is divided into the Taihang Mountain Piedmont Plain, the Low Plain, and the Coastal Plain. In recent years, Xingtai and Handan have pushed forward high-standard farmland construction under the idea of “ecological priority and green development.” A strong focus has been placed on water-saving infrastructure in grain-producing areas. At present, more than 90% of cultivated land in this region has been included in high-standard farmland projects. Measures such as canal lining, pipeline water delivery, water–fertilizer integration, and sprinkler irrigation are widely used. These changes seem to have helped keep grain production more stable, and irrigation water use has also gone down by more than 50 million cubic meters per year [10].

With more projects being built, attention has slowly moved from construction itself to what actually happens when these systems are used in everyday farming. At this stage, some problems start to show up more clearly. These problems may also help explain why the effects are not the same in major grain-producing areas [10].

One thing that is often mentioned is land transfer and consolidation. In theory, project design usually assumes land can be put together in a more continuous way. But in reality, farmers are not always willing to transfer land. This is related to long-term household farming habits and also the way land rights are confirmed. Because of this, even after improvement projects, fragmented plots still exist in some places, and field boundaries are not always regular. This makes large-scale planning more difficult and also limits how much efficiency improvement can actually be achieved.

There is also the problem of coordination between departments. Farmland protection rules, land survey requirements, and water management arrangements do not always match in practice. For example, strict protection of permanent basic farmland can make it harder to adjust or straighten field roads. Water distribution timing is also not always consistent with actual irrigation demand. These issues do not stop construction, but they do affect how well some technologies can be used.

Human resources are another limitation. In many counties, there are only a small number of technical staff involved in farmland construction and management. This affects planning and construction to some extent. When local technical capacity is limited, project design is sometimes not very detailed, and implementation can also vary from place to place. This may also influence efficiency improvements.

Socialized agricultural services are still uneven. Services like machine sowing, fertilization, and harvesting are not equally developed everywhere. In some areas, irrigation systems are still not fully able to support integrated water management. Post-harvest services such as drying and storage are also relatively weak. Because of this, the potential benefits of large-scale farming are not always fully realized.

Soil fertility improvement is a longer-term issue. Even though infrastructure has improved, investment in soil quality is still relatively limited. Organic matter input is not always continuous in many places, partly because of funding limits and partly because of project design choices. Over time, this may affect whether productivity gains can be kept.

Finally, post-construction management is still often mentioned as a problem. Responsibility is not always clearly divided, and funding is limited in some areas. Systems involving both government and farmers are still not fully developed. In practice, some farmers are not very familiar with how to use and maintain the facilities properly. Because of this, infrastructure does not always last as long as expected, and policy effects may weaken over time [10].

4.4. Case Comparison and Insights

Table 1. Comparison and Insights.

Comparison Dimension	National Macro Survey [9]	Bijie City (Western Non-Major Area) [2]	Southern Hebei Plain (Eastern Major Area) [10]
Scope/Type	Macro summary of 28 provinces	Mountainous and hilly, non-major area	Plain, major grain-producing area
Construction Concentration	Middle-lower Yangtze, Huang-Huai-Hai, Northeast	—	Huang-Huai-Hai region
Main Achievements	Regional concentration, high renovation demand	TFP improvement, farmers' income increase	Significant water saving, but limited TFP improvement
Main Problems	Insufficient investment, inconsistent standards, lack of management & protection, facility aging, insufficient fertility	Funding, talent, management & protection	Lagging land transfer, departmental conflicts, talent shortage, insufficient services, weak fertility improvement, lack of management & protection

Core Insights

Taken together, the national macro survey shows that there are some common problems in how high-standard farmland construction is implemented in different regions [9]. The case of Bijie seems to suggest that in non-major grain-producing areas, better infrastructure can more easily lead to improvements in production efficiency and also household income [2].

The situation is different in the southern Hebei Plain. In major grain-producing areas, the effects of the policy are relatively weaker, and this seems to be related to several structural factors. These include land transfer arrangements, coordination problems between different departments, and the development level of socialized agricultural services [10].

Looking at these cases together, a more general point can be made, although it is not very strict. The effect of high-standard farmland construction does not depend only on physical infrastructure itself. It is also closely related to other conditions that support it. These include funding arrangements, technical standards, coordination between departments, availability of technical staff, socialized service systems, soil fertility improvement, and post-construction management and maintenance [2,9,10].

5. Policy Recommendations and Countermeasures

Based on the literature, mechanism discussion, and case comparisons above, a few policy ideas can be roughly summarized for improving high-standard farmland construction and its actual effects.

5.1. *Technology Extension and Supporting Capacity*

One point that appears quite often in existing studies is that building infrastructure itself is not always enough to improve productivity. If supporting technical services are weak, the effects of construction may not fully appear. Because of this, many studies mention agricultural technology extension and farmer training as important supporting measures.

In addition to physical construction, more attention may need to be given to whether farmers can actually use these technologies in daily farming. This includes things like irrigation management, use of machinery, and green pest control. Some high-standard farmland areas can also be used as demonstration sites. In these places, new varieties, machines, and farming methods can be shown to farmers, which may help spread these practices more easily.

Another issue often mentioned is soil quality. Problems such as low organic matter, soil compaction, and acidification still exist in many regions. Improving soil conditions is usually not something that can be done quickly. It often requires longer-term measures. In the literature, methods such as straw returning, soil testing with formula fertilization, and crop rotation or fallow are commonly suggested. Some studies also mention the need for more regular monitoring of cultivated land quality [9].

5.2. *Regional Differentiation and Institutional Adjustment*

The studies reviewed in this paper generally suggest that policy effects are not the same across regions. In major grain-producing areas, the gains in productivity seem to be limited by some institutional arrangements that are linked to grain security goals.

In this context, some literature mentions that a certain degree of flexibility in cropping patterns might help improve land-use efficiency. This usually refers to combinations like grain–economy–feed production, although in practice this is not always easy to implement. The idea is mainly to improve land returns while still keeping basic grain supply.

Some studies also discuss the possibility of ecological compensation or interregional transfer mechanisms. These are often mentioned as ways to deal with the gap between production responsibility and economic return, although the actual operation of these mechanisms is still not very clear in many cases.

Another issue that appears frequently in empirical studies is coordination between different departments, such as natural resources, water conservancy, and agriculture. In many cases, the rules and standards of these departments are not fully aligned. From a planning point of view, better matching of technical standards and project design rules may reduce some inconsistencies during implementation [10].

Finally, evidence from cases such as Bijie also shows that land transfer conditions and the development of socialized agricultural services may play an important role in determining how effective the policy actually is [2].

5.3. Integration with Agricultural Machinery and Socialized Services

Some studies in the literature talk about the connection between farmland infrastructure and agricultural mechanization. In practice, field infrastructure like roads and access paths may not be enough on their own. Their effect often depends on whether machinery services and related support policies are available at the same time.

At the same time, the development of socialized agricultural services is still quite uneven across different regions. Services like outsourcing of production, mechanized harvesting, and full-process farm management are often mentioned in the literature as ways to reduce the burden on small farmers. But in practice, these services are not developed to the same level everywhere.

Some studies also mention that service standards are not always consistent across regions. Because of this, people often suggest that improving consistency might help make some farming stages more stable, like sowing, fertilization, harvesting, and also post-harvest work.

5.4. Fiscal Support, Human Resources, and Post-Construction Management

Funding and technical support at the county level is another point that appears quite often in the literature. Besides normal fiscal input, some studies also talk about other possible funding channels, for example combining different agricultural-related funds. But how well these work still depends a lot on local implementation, and the results are not always the same.

The shortage of technical staff is also something that is often mentioned. In many places, there are not enough people working in water conservancy or agricultural engineering. Because of this, some studies suggest that training and recruitment might help improve planning and construction quality. But in reality, this kind of improvement is not always easy to achieve.

Finally, post-construction management is still a common problem in many studies. Responsibilities among different actors are sometimes not very clear, and maintenance systems are not always well developed. Some literature suggests that clearer division of responsibility, together with more organized maintenance arrangements, may help improve long-term performance of facilities. There are also discussions about linking usage, benefits, and maintenance responsibilities to make the system more sustainable [2,9,10].

6. Conclusions

Based on the literature review, mechanism analysis, and case comparisons above, this paper summarizes the following five main conclusions:

High-standard farmland construction is generally associated with improvements in agricultural total factor productivity, and these gains are mainly reflected in efficiency improvements rather than technological breakthroughs. The literature suggests that such effects are largely transmitted through two channels: economies of scale, which are related to land consolidation and more contiguous field management, and technology adoption, supported by improved irrigation, drainage systems, and better access to mechanized farming. However, its influence on frontier technological progress appears relatively limited. At the county level, agricultural TFP in China is often described as “efficiency-driven and technology-lagging” [4–6].

There is also considerable regional heterogeneity in policy effects. In non-major grain-producing areas, infrastructure improvements tend to be more directly associated with increases in TFP and farmers' income. By contrast, in major grain-producing areas, such as the southern Hebei Plain, the effects are often weaker. Some studies even report limited or negative impacts, which are usually linked to a combination of constraints, including rigid planting structures, delayed land transfer, coordination problems among departments, shortages of technical personnel, insufficient socialized services, weak soil fertility improvement, and underdeveloped post-construction management and protection systems [5,6,10].

Overall, the effectiveness of high-standard farmland construction is not determined solely by physical infrastructure investment. National macro surveys and case studies both suggest that its outcomes are also shaped by a wider set of supporting institutional conditions. These include investment arrangements, technical standards, inter-departmental coordination, human resources, socialized service systems, soil fertility management, and long-term operation and maintenance. In this sense, infrastructure investment alone may not be sufficient to fully translate into sustained policy effects [2,9,10].

Conflicts of Interest

The author declares that there is no conflict of interest regarding the publication of this article.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

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