

# Solutions to Improve the Efficiency of Construction Cost Management for Project Management Board of Agricultural and Rural Development Investment in Ninh Binh Province, Vietnam

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## ABSTRACT

Improving the efficiency of the project management process in Ninh Binh province, Vietnam is very necessary at the moment, it contributes to promoting the development of the province not only in the construction sector but also affects many other aspects. Each other's lives in the province in general and also contribute to the development of the country in particular. The article describes some outstanding issues in the management of construction costs at the management board of agricultural investment and rural development in Ninh Binh province and identifies factors affecting the management of projects. Thereby the resulting research suggests solutions to improve the management to help projects be carried out smoothly, without many obstacles in the construction process. As a result, the management board can decide the best solutions to manage the best project which contributes to improving socio-economic life, and help Ninh Binh province develop more and more.

**Keywords** : Construction investment cost management, project management board, agriculture and rural development (MARD), solutions, Ninh Binh province.

## Article Info

Volume 9, Issue 6

Page Number : 202-210

## Publication Issue :

November-December-2022

## Article History

Accepted : 10 Nov 2022

Published: 22 Nov 2022

## I. INTRODUCTION

According to the provisions of Clause 1, Article 63, Law on Construction: "Ministers, heads of ministerial-level agencies, chairpersons of provincial People's Committee, chairpersons of district-level People's Committee, competent representatives of state enterprises shall decide to establish specialized construction investment project management board, regional construction investment project management

board to manage a number of projects of the same specialty, works routes or in the same area". According to Clause 8, Article 4, the Law on Enterprises stipulates: "State-owned enterprises are enterprises with 100% state-owned charter capital". Based on the above provisions, the Project Management Board (PMU) established by state-established enterprises is a specialized and regional management board in accordance with the Law on Construction [1,2].

Project Management Units perform project management in phases: project preparation, project implementation, construction completion, and putting the project's works into operation. and project management according to management contents: Work volume management, construction work quality management, implementation progress management, construction investment cost management, construction safety management construction, environmental protection management in construction, management of contractor selection and construction contract, management of risks, management of construction information systems [3-7].

To improve the management of the scope and work plan, the first thing is that the PMU needs to coordinate with the consultant to organize the building of a quality management system according to ISO 9001: 2008 standards. Applying at PMU to develop standard procedures to implement and control work at PMU, prevent errors, and minimize rework, thereby improving productivity, and working efficiency, clearly defining responsibilities and powers in implementing tasks, creating a foundation for building a professional, effective working environment, enhancing reputation and image of the PMU In order to effectively manage the completion according to the set plan, in addition to the human factor, it is also necessary to improve the technology element in project management, specifically: Building a communication system from the PMU to project management field offices (fax machines, telephones, internet, computers ...) to promptly handle technical situations, report progress, direct project management in the fastest way. The most accurate, additional equipment for staff working in the room as well as at the construction site such as laptops, desktops, hydrometers, electronic total stations, GPS locators, structural quality testers, supplement and update existing software in management such as progress management, cost management, investment capital management... [8-14]

Construction cost management is an important stage in the construction and construction process, and has a decisive role in the economic efficiency of the project. Management of construction investment costs directly affects the construction progress, and quality of the works...

Improving the efficiency of construction cost management is very necessary and urgent today in the development of agriculture and rural development (Agriculture and Rural Development), this article to provide solutions that help the management work better so that investment projects contribute to the construction and development of the province's socio-economic development [15-18].

## **II. CURRENT SITUATION OF THE PROJECT MANAGEMENT BOARD OF THE CONSTRUCTION INVESTMENT PROJECT FOR AGRICULTURAL AND RURAL DEVELOPMENT WORKS IN NINH BINH PROVINCE**

In the management of construction investment in general and the field of Agriculture and rural development in particular, the stage of investment preparation, project appraisal, investment implementation, progress management, construction quality, and acceptance and settlement of works are important jobs of construction investment management. In Ninh Binh province, most of the projects in the Agriculture sector can basically ensure usability to be used according to the design requirements, without major technical errors, and promote socio-economic efficiency. However, in reality, there are still a number of projects with defects in quality or technical problems, slow progress, causing waste and frustration in public opinion, and reducing efficiency, the first goal being private.

The Project Management Board of the construction investment project for agricultural and rural development works in Ninh Binh province still has some limitations in the process of operation, such as project management personnel's lacks expertise.

industry, bravery, independence and creativity are not high, applied technology is not modern, legal documents system is not clear, overlapping, the management process has not been completed, and has not been implemented properly. The management process is not really suitable for the actual construction, affecting the efficiency of project implementation. Therefore, the issue of completing the management of investment projects for the construction of agricultural and rural development works in Ninh Binh province is a matter of importance.

### III. CAUSES OF LIMITATIONS IN PROJECT MANAGEMENT IN AGRICULTURAL AND RURAL DEVELOPMENT WORKS IN NINH BINH PROVINCE

1. Existence in project management and administration of the Project Management Board: Project management is still limited, and the selection of private contractors is not guaranteed, leading to the selection of applications. the consultant is poorly qualified. Notably, the capacity and professional qualifications of a number of cadres and civil servants involved in Project Management are still limited, lacking a sense of responsibility in implementing tasks; Cognitive skills and coordination with relevant agencies have not yet achieved high efficiency. In the process of implementation, shortcomings, and violations occur.

2. Shortcomings in the stage of surveying and making investment projects: The quality of design documents and cost estimates is limited and inaccurate. In the design work, there is not yet a solution suitable for the specific conditions of the project. Designing based on inaccurate survey data leads to many unfeasible details, adjusted and supplemented design, slow progress, waste, and low work efficiency.

3. Existence in the project verification stage: The accuracy of verification is not high due to the quality of project documents as well as design, the total cost estimate has not mentioned all the contents of a project according to regulations. on survey data, current status

studies, forecasts ... The verification agency has not focused carefully on the contents of the project and subjectively believes in the documents provided by the investor and the supervision of consulting unit, focusing only on examining legal procedures. This leads to the situation that many projects have been consulted and verified in a sketchy manner. When they are deployed, they have to adjust the design - estimate to increase total investment.

Some verification consulting units still lack a sense of responsibility, and in the verification process, they do not detect errors in the design and estimate survey consultant. The process of stamping verification does not carry out the control of records, leading to inconsistencies in the design, or inconsistency between drawings and cost estimates.

4. Shortcomings in the stage of bidding implementation and selection of construction contractors: Awareness and understanding of people doing bidding work are not correct and incomplete. The development of bid evaluation criteria lacks specific instructions, lack of basic training, which leads to abuse of the right to perform acts such as dismissing unwanted bidders and creating chances of winning bids for intentional bidders.

The provisions on prerequisites for contractors are arbitrarily applied, leading to the status of non-essential conditions as prerequisites for defrauding contractors and vice versa. to become a prerequisite to create opportunities for bidders to not qualify for the list, even to win bids.

The quality of many projects that have been put to use is poor, and ineffective due to weak contractors' capacity: Many construction contractors fail to comply with the commitments in the construction contracts on the capacity of machinery and equipment, the ability to advance capital, and construction schedule. Many construction items are not in accordance with the approved design but are still accepted and paid for according to the approved construction drawings. The preparation of construction completion documents is also not in accordance with regulations: diary

recording, and construction completion drawings are not in accordance with actual construction (often taking design drawings as construction completion drawings).

#### **IV. SOLUTIONS TO IMPROVE THE EFFICIENCY OF CONSTRUCTION COST MANAGEMENT FOR PROJECT MANAGEMENT BOARD OF AGRICULTURAL AND RURAL DEVELOPMENT INVESTMENT IN NINH BINH PROVINCE, VIETNAM**

To promote the results achieved in the project management of agricultural and rural construction projects, and to overcome the shortcomings, and limitations, in the coming time, Ninh Binh Provincial Construction Investment Project Management Unit. It is necessary to focus on implementing solutions for organizing and managing project construction projects, improving the selection and management of design contractors, project verification, bidding, and selection of construction contractors. ... Specifically:

1. First, perfecting the construction project management organization: It is necessary to improve the quality of the professional staff of the Project Management Board, to research and assign staff to the right professional expertise, yet effective. In particular, it is necessary to standardize staff and organize well the training and fostering of professional expertise as well as formally define the title of project management engineer to have a basis for human standardization. Construction project managers must possess complete practice certificates according to regulations. It is necessary to complete a uniform and uniform management apparatus in project implementation and project management. This is an objective requirement, consistent with the law of social development. For effective management, specialization of the management apparatus is necessary, avoiding overlaps in management. The managerial staff must have a management practice certificate, have appropriate professional qualifications, have good ethical qualities,

and be especially knowledgeable about the law. The responsibilities of each professional group in charge of organization and management should be clear and unified in directing and guiding, not allowing overlaps to cause difficulties for each professional group. At the same time, it is necessary to step by step establish a professional and effective Project Management apparatus. This is a general solution, requiring smooth and synchronous coordination between professional groups in the unit.

2. Second, improve the selection and management of design contractors: Specifically, it is necessary to select a design contractor with sufficient legal status and capacity to perform the design consultant task of the project. judgment in accordance with the registered profession; To be responsible before the investor and the law for the construction consultancy products that the unit establishes.

At the same time, changing the way of calculating design costs not in the direction of determining the proportion of the project estimate to avoid the design consultant contractor raising the construction price to enjoy design difference costs, reducing the responsibility for the product, wasting investment capital and leading to many other negative problems. Design consulting when receiving designs for a project or a project that requires at least 3 design options, with optimal technical and economic solutions for the investor to choose one of those options. Designing - cost estimate documents must be verified, appraised, and approved by specialized agencies in charge of construction. For large and complex projects, it is necessary to invite independent consultants to inspect and criticize, in order to get the optimal and highly effective plan.

There should be specific regulations on the allowed rates of error of design consultants when preparing technical drawings and cost estimates. If the rate is exceeded, it must specify a specific level of compensation (possibly equal to the amount in excess). The consulting units have the weak capacity, proposing state management agencies operating in the

construction field boldly withdraw their practice licenses, publish on the bidding information page and not allow participation. local judgment.

3. Third, improve the work of project appraisal: When participating in verification activities, organizations and individuals must have sufficient capacity conditions suitable to the work performed; have a quality management system, and take responsibility for the quality of their work done before the investor and the law. Along with that, investment in training and improving qualifications and capabilities of the design documentation verification. Comply with the provisions of the law on construction investment project management, and construction work quality control in the process of verification. In particular, attention should be paid to the following points: Proposing the application of appropriate design solutions, ensuring safety, saving money, complying with current regulations and standards, Ensuring the conformity between estimated volume and design documents, unit price work norms compared to construction methods, material prices suitable to the market and usage requirements to avoid waste and loss during the project implementation.

4. Fourth, improve the quality of bidding, and selection of construction contractors: In the preparation of bidding documents, clear, specific and public criteria must be issued in order to avoid restrictions. the number of bidders participating in the bid was too high due to the high evaluation criteria. More specific regulations on standards for expert group members, and the number of experts to bid, ensure that the evaluation process, and the expert group must be independent of contractors.

In addition, there should be specific sanctions strictly sanctioning the phenomenon of bidding and anti-dumping in bidding. At the same time, associated with the responsibility of the investor in the process of implementing the bidding. For bidding packages with a winning bid price more than 10% lower than the approved bidding package price, there should be specific regulations on increasing the contract

performance guarantee amount to bind and enhance the responsibility of the winning bidder and improve the quality of construction works.

In addition, it is necessary to review all the contractors with weak capacity, the construction of the works did not meet the previous quality for appropriate sanctions. For bidders that have a form of fraud in bidding such as borrowing legal entities, borrowing other contractors' capacity to participate in the bidding or finishing bidding, then selling the bid ... depending on the degree of need of form handled properly. If it is severe, it is prohibited to participate in bidding activities permanently, while lightly, it is prohibited to participate for 5 years, and at the same time, disclose information about the violation.

5. Fifth, improve the quality of construction supervision: The consulting unit as well as the investor when assigning supervisors must have the choice of individuals to participate in construction supervision., have a responsibility, the right competencies with expertise, rich practical experience, agility, acumen in the process of handling work, have good ethical qualities and practice certificates as prescribed. At the same time, it is necessary to send staff of their units to participate in training courses to improve supervision skills, and grasp new legal provisions on construction supervision to organize the correct implementation. At the same time, strengthen inspection and supervision to ensure the quality and effectiveness of the project.

6. Sixth, the direction to complete the stage of payment and settlement of works: Time for pre-acceptance test and payment must be clearly specified in the construction contract delivery and receipt, investment capital in the year to be checked and accepted. receive the volume and value performed in the year as a basis for payment and settlement of investment capital of that year.

Thus, it will improve the responsibility of the investor, and avoid the situation that the investor does not carry out the procedures, causes difficulties, and does not take over on time for the contractors. In case the investor does not do or hesitate to carry out the

procedures for checking and accepting the settlement for the contractor when the contractor is eligible, he/she must attribute the material responds to the investor.

Regulations on sanctioning of administrative violations in construction activities towards increasing the sanction level for each violation of discipline, making and approving the settlement report of completed construction investment projects in order to end the situation Late settlement of investment capital is commonplace today.

Specifically, regulating the penalty for contractors and investors when making and submitting the final settlement report of works is late, maybe 0.2% compared to the finalized value of work items, works or projects. completed for one day to send late the investment capital settlement report to the verification agency.

At the same time, the investor must review and clearly define the individual responsibility of the unit in making and sending the late settlement report and that individual must compensate for that individual to learn from experience in the following works.

Besides, it is necessary to publicize the process of controlling investment capital payments and publicizing the settlement. The State Treasury proactively instructs investors to complete legal documents to serve as a basis for advancing and controlling investment capital payments, and publicly post up the process of controlling investment capital payment according to instructions. Ministry of Finance.

## V. CONCLUSIONS

The PMU needs to make a plan for material supply, to supply it on time, and on schedule, and ensure the quality through contracts with the suppliers. Construction machinery that is working for a long time must carry out periodic maintenance, detect failures to promptly repair, and avoid work during construction but encounter breakdowns, inoperability, and impact construction progress. The measures for

capacity risks for company staff are still inadequate. Organize regular training courses to improve the capacity of staff, focusing on improving the skills of the workers.

Workers who have not undergone training and working in enterprises, they must provide basic knowledge about the work they are doing and the necessary skills, processes, and technical requirements - technology, instructions proficient use, and safe use of equipment and tools in the construction process. Measures for the risks that can be caused by the investor: Improve the quality of the contract when assigning the contractor to the investor, and proactively identify the risks that may occur during construction. to include the terms of the contract. Measures for risks related to losses at the construction site are caused by many reasons, but in general, most of them cause a considerable loss for businesses. Therefore, it is necessary to take appropriate measures to limit loss and waste at the construction site, specifically: Regulating the regime of safe storage of machinery, equipment and objects, specifying specific responsibilities for each fish personnel and team in the issue of protecting assets and materials, avoiding wasteful loss. Increasing the responsibility of security guards on site. Measures for risks in occupational safety management: Provide occupational safety protection for the company's officers and workers. Introduce rules on occupational safety and environmental sanitation, widely disseminate them to all officers and workers and provide sanctions when there are violations. Assigning specialized staff in charge of supervision of occupational safety and environmental sanitation to urge and supervise the implementation of occupational safety for workers. Always have an active plan to cope with adverse weather situations such as timely shielding when thunderstorms...

Improving the efficiency of the project management process in Ninh Binh province is very necessary at the moment, it contributes to promoting the development of the province not only in the construction sector but also affects many other aspects. each other's lives in the

province in general and also contribute to the development of the country in particular. Achieving results requires the help of departments, and people together contribute their strength to achieve the best effect.

## VI. RECOMMENDATIONS

- Ensure publicity and transparency in the management and use of public investment capital, with special attention paid to development investment capital belonging to state budget capital. Fully complying with the regulations on investment supervision and evaluation according to the provisions of the Law on Public Investment; Decree No. 84/2015 / ND-CP dated September 30, 2015 of the Government on investment supervision and evaluation and Circular No. 22/2015 / TT-BKHDT dated December 18, 2015 of the Ministry of Planning and Investment supervision and evaluation report forms.
- The allocation and implementation of the annual public investment plan must comply with the provisions of the Law on Public Investment No. 49/2014 / QH13 dated June 18, 2014, the Construction Law No. 50/2014 / QH13 dated June 18, 2014, Decree No. 77/2015 / ND-CP dated September 10, 2015 of the Government on annual and medium-term public investment plans, Decree No. 136/2015 / ND-CP dated 31/12/2015 of the Government guiding the implementation of a number of articles of the Law on Public Investment; Decree No. 120/2018 / ND-CP dated September 13, 2018 of the Government amending and supplementing a number of articles of the Government's Decree No. 77/2015 / ND-CP dated September 10, 2015 on annual and medium-term public investment plans; Decree No. 136/2015 / ND-CP dated December 31, 2015 of the Government guiding the implementation of a number of articles of the Law on Public Investment; Decree No. 161/2016 / ND-CP dated December 2, 2016 of the Government on specific mechanisms in construction investment management for a number of projects under national target

programs for the period 2016-2020 and other relevant current regulations. No debt in capital construction occurs.

- Strengthen inspection, guidance, and propose handling of entities' violations in the implementation of procedures: Signing contracts of delivery, payment, payment documents, and settlement documents ... Resolute handle signed contracts that do not comply with regulations and report to the Provincial People's Committee for handling violations in the contents of control and settlement.
- Organizing the appraisal to ensure the progress and quality requirements of the feasibility study report or the economic - technical report of the works; evaluation of design and cost estimates of works in accordance with the Law on Construction and Decree No. 06/2021/ND-CP dated January 26, 2021 of the Government on quality management, construction and maintenance of construction works [19].
- Synthesize, review, and arrange in order of priority, reasonable divergence of investment capital plans of public investment projects, advise competent authorities to consider, approve and adjust investment capital plans to ensure that it is consistent with the actual implementation progress of each project, and project and current regulations. Projects are only allowed to arrange capital plans for new construction when they fully satisfy investment procedures as prescribed by law. Concentrating investment capital for the province's key projects and works.
- Organizing the establishment and approval of tasks and technical plans for construction survey, and construction design tasks to ensure the right regulations, close to reality; selection of consultants to set up projects to ensure qualified capacity and experience. To inspect and supervise the quality of surveys and design in accordance with procedures and regulations to ensure that investment projects are highly feasible, and cost-effective, and improve the efficiency of investment capital use. Only report on survey results, basic design dossiers, and construction

## VII. REFERENCES

design dossiers when ensuring quality and complying with the contents of signed contracts.

- Strengthening the organization of training and dissemination of regulations on investment management and construction for those participating in construction activities in the area, especially the leaders and professional staff at the commune level.
- Good control over the implementation of investment and construction in the area according to its competence, clearly specifying the personal responsibilities of the investment decider from the stage of investment preparation until the final settlement of the project is completed.
- Improve the quality of appraisal work according to decentralization; manage, receive and store dossiers in accordance with current regulations. Strengthening the inspection and supervision of the quality of construction works.
- Organize the implementation of project management contents in accordance with Articles 66 and 67 of the Law on Construction dated June 18, 2014.
- Fully implement the rights and obligations of the Investor, and the Management Board of construction investment projects in accordance with Article 68 and Article 69 of the Law on Construction dated June 18, 2014.

In addition, the specialized project management units and the regional project management units are also responsible for ensuring and creating favorable conditions for consulting and construction organizations to execute construction on schedule and with quality. works and must be held accountable to the Provincial People's Committee, the Investor, and State laws if detecting any mistakes, irresponsibility, or objectivity while performing the tasks.

- [1]. Vietnam Construction Law, 2014.
- [2]. Vietnam Law Amending and Supplementing a Number of Articles of the Construction Law, No. 62/2020/QH14, The National Assembly, 2020.
- [3]. Kertzner, H. R. (2013). Project management: a systems approach to planning, scheduling, and controlling. New York: John Wiley & Sons.
- [4]. Lock, J. (2013). Project Management. New Orleans: Gower.
- [5]. Meredith, J. R., & Mantel Jr, S. J. (2011). Project management: a managerial approach. New York: John Wiley & Sons.
- [6]. Reiss, G., & Rayner, P. (2012). Portfolio and Programme Management Demystified: Managing Multiple Projects Successfully. Baltimore: Routledge.
- [7]. Reiss. (2007). Project Management Demystified. Dallas: Gower.
- [8]. Tuan Anh Nguyen, Hai Van Bui, 2021, Determination of Factors Affecting Capabilities of Competitiveness in Construction Auction of Company 59 – Ministry of Defense, International Journal Of Engineering Research & Technology (IJERT) Volume 10, Issue 01 (January 2021).
- [9]. Anh Tuan Nguyen, Truong Vu Pham, 2021, The Application of Statistical Package for the Social Sciences into Data Analysis to Identify and Evaluate the Risk Factors Influencing to the Implementation of the Renovation and Improvement National Highway 53, Tra Vinh – Long Toan Section, Tra Vinh Province, Vietnam, International Journal Of Engineering Research & Technology (IJERT) Volume 10, Issue 02 (February 2021),
- [10]. Nguyen Anh, T., & Pham Long, T. (2021). Completing the construction management at hoa binh construction group. International Journal of Engineering Technologies and



Management Research, 8(2), 9-20.  
<https://doi.org/10.29121/ijetmr.v8.i2.2021.859>

- [11]. Ho Thanh Phong, Vo Nhat Luan, Le Manh Tuong, Nguyen Anh Tuan, "Solutions to minimize the impacts of climate change on bridge abutments in the Vam Co river downstream, Long An province, Vietnam", International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET), Volume 9 Issue 5, pp. 178-195, September-October 2022.  
<https://doi.org/10.32628/IJSRSET229524>
- [12]. West, M. A. (2012). Effective teamwork: Practical lessons from organizational research. Nashville: John Wiley & Sons.
- [13]. Loosemore, M., Raftery, J., & Reilly, C. (2006). Risk management in projects. Chicago: Taylor & Francis.
- [14]. Leach, L. P. (2014). Critical chain project management. Houston: Artech House.
- [15]. Gabriel, E. (2009). The lean approach to project management. International Journal of Project Management, 15(4), 205-209.
- [16]. Fernandez, D. J., & Fernandez, J. D. (2008). Agile project management-agilism versus traditional approaches. Journal of Computer Information Systems, 49(2), 10-17.
- [17]. Hollie Booth et al. Exploring cost-effective management measures for reducing risks to threatened sharks in a problematic longline fishery. Ocean & Coastal Management, Volume 225, 2022, 106197.  
<https://doi.org/10.1016/j.ocecoaman.2022.106197>
- [18]. Srinivas Rallapalli et al. Hydro-conditioning: Advanced approaches for cost-effective water quality management in agricultural watersheds. Water Research, Volume 220, 15 July 2022, 118647.  
<https://doi.org/10.1016/j.watres.2022.118647>
- [19]. Decree No. 06/2021/ND-CP dated January 26, 2021 of the Government on quality

management, construction and maintenance of construction works.

**Cite this article as :**

Nguyen Anh Tuan, Do Tran Bao Thu, Nguyen Nhat Hung, Le Trong Nghia, "Solutions to Improve the Efficiency of Construction Cost Management for Project Management Board of Agricultural and Rural Development Investment in Ninh Binh Province, Vietnam", International Journal of Scientific Research in Science, Engineering and Technology (IJSRSET), Online ISSN : 2394-4099, Print ISSN : 2395-1990, Volume 9 Issue 6, pp. 202-210, November-December 2022. Available at doi :  
<https://doi.org/10.32628/IJSRSET229617>  
Journal URL : <https://ijsrset.com/IJSRSET229617>