Journal of Private and Commercial Law

A peer-reviewed journal published by Faculty of Law Universitas Negeri Semarang, Indonesia. The title has been indexed by DOAJ, SINTA, GARUDA. ISSN 2599-0314 (Print) 2599-0306 (Online). Available online at https://journal.unnes.ac.id/journals/index.php/jpcl/index

Reevaluating Risk and Responsibility: Broader Implications of Construction Contract Regulations in Indonesia and Globally

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Abstract

This article critically examines the evolving landscape of risk and responsibility in construction contract regulations, with a focus on Indonesia and broader global contexts. A construction project is inherently subject to various risks, which increase in proportion to the project's complexity. Discrepancies between planning and actual conditions often lead to unforeseen risks, placing significant responsibility on all parties involved. In Indonesia, regulatory frameworks such as the Indonesian Civil Code (*Kitab Undang-Undang Hukum Perdata*) and the Construction Law

(*Undang-Undang No. 2/2017*) provide some guidance, but ambiguities surrounding risk management and contractor responsibility persist, often resulting in disputes, project delays, and inefficiencies. This research, using a normative juridical method with a statute approach, critically explores the division of risk burden (risk sharing) and the responsibilities of parties in construction contracts under both Indonesian laws and the guidelines of the International Federation of Consulting Engineers (FIDIC). The study also reviews risk allocation practices in other jurisdictions, such as the European Union, the United States, and the United Kingdom, to provide insights into varying approaches to risk management. The results indicate that parties involved in construction projects share an implicit obligation to collaborate in minimizing the negative consequences of unforeseen events. By categorizing risks according to their sources and types, a fair, balanced, and equitable risk-sharing framework can be achieved. This paper proposes the need for a redefined regulatory framework in Indonesia that integrates transparent accountability measures and collaborative risk management strategies, contributing to a more sustainable and efficient construction environment both domestically and globally.

KEYWORDS *Construction Contracts, Risk Allocation, Global Regulatory Frameworks, Risk Management, Legal Reform*

Introduction

National development constitutes an integral component of a state's broader effort to realize its constitutional and socio-economic objectives. It encompasses all aspects of public life and is jointly undertaken by government institutions and society at large.[1] In this context, physical development—manifested through infrastructure, public facilities, and large-scale construction projects—serves as a primary instrument for achieving public welfare. As noted by scholars such as Flyvbjerg[2], infrastructure development is closely linked to economic growth and national competitiveness. In Indonesia, the acceleration of such development has significantly increased reliance on the construction services sector, positioning it as a strategic industry with strong intersectoral linkages, particularly with raw material suppliers and end-user sectors.

[1] Pritchett, Lant. "National development delivers: and how! and how?." *Economic Modelling* 107 (2022): 105717.

[2] Flyvbjerg, Bent. "What you should know about megaprojects and why: An overview." *Project Management Journal* 45, no. 2 (2014): 6-19.

The strategic importance of the construction industry lies not only in its economic contribution but also in its function as a foundational enabler of other sectors. Gordon[3] highlights that construction outputs—such as transportation networks, energy systems, and public facilities—form the backbone of industrial and social development. Consequently, the rapid expansion of physical development creates both opportunities and challenges for construction service providers. While the sector benefits from increased demand, it also faces heightened exposure to legal, financial, and operational risks. This duality underscores the necessity of robust regulatory frameworks capable of ensuring both efficiency and fairness in construction practices.

Before the commencement of any construction project, parties are required to formalize their relationship through a construction contract. Such agreements, entered into by service users and providers, function as the legal foundation governing the execution of the project. Standardization plays a crucial role in this regard. According to Bunni[4], standardized contracts—particularly those developed by the International Federation of Consulting Engineers (FIDIC)—are designed to promote clarity, consistency, and equitable risk allocation. These standards are especially relevant in complex projects involving multidisciplinary engineering works, where the margin for error is minimal and the consequences of mismanagement can be severe.[5]

Construction contracts serve multiple functions beyond merely defining rights and obligations. They act as operational guidelines, control mechanisms, and administrative tools throughout the project lifecycle. As Sweet and Schneier[6] argue, effective contract management includes drafting, implementation, monitoring, and enforcement, all of which are essential for ensuring project success. In Indonesia, however, the practical application of these functions often reveals gaps between contractual provisions and real-world execution.[7] This discrepancy can lead to

3 Gordon, David. "The global economy: New edifice or crumbling foundation?." In *Social Structures of Accumulation: The Political Economy of Growth And Crisis* (Cambridge, MA: Cambridge University Press, 1994), pp. 292-305.

4 Bunni, Nael G. *The FIDIC Forms of Contract*. (New Jersey: John Wiley & Sons, 2005).

5 *See also* Bunni, Nael G., and Lydia B. Bunni. *Risk and Insurance in Construction*. (London: Routledge, 2022).

6 Sweet, Justin, Marc M. Schneier, and Blake Wentz. *Construction Law for Design Professionals, Construction Managers And Contractors*. (Toronto: Nelson Education, 2014). *See also* Sweet, Justin. "Do engineers and lawyers approach problems differently?." *Journal of Professional Issues in Engineering Education and Practice* 134, no. 4 (2008): 367-367.

7 *See* Emirzon, Joni, and Henry Dianto Pardamean Sinaga. "Dispute resolution model of construction work contract: A case study in Indonesia." *International Journal of Global Community* 4, no. 2 (2021): 163-176; Muskibah, Muskibah, et al. "Force Majeure During

inefficiencies, disputes, and a lack of accountability among project stakeholders.

A central issue in construction law is the inherent uncertainty associated with project execution. Discrepancies between planned conditions and actual field realities frequently give rise to risks. Nabil A. Kartam and Saied A. Kartam identify construction risk as a function of variables such as design complexity, environmental conditions, and stakeholder coordination.[8] These risks can significantly impact project outcomes, affecting cost, time, quality, and overall performance. In many cases, risks are not only foreseeable but also unforeseen, requiring adaptive and responsive legal mechanisms to address their consequences effectively.

Various empirical evidences suggest that common sources of risk in construction projects include cost overruns, design changes, incomplete specifications, and delays in payment or scheduling.[9] Flyvbjerg notes that cost overruns are a persistent issue in large-scale infrastructure projects worldwide, often resulting from optimistic forecasting and inadequate risk assessment.[10] In Indonesia, additional factors such as fluctuating market prices, unclear scope of work, and weak contract administration further exacerbate these risks. These conditions highlight a critical gap between contractual expectations and implementation realities, raising questions about the adequacy of existing legal frameworks.

The Indonesian legal system provides a foundational basis for construction contracts through the Civil Code (*Kitab Undang-Undang Hukum Perdata*)[11] and Law No. 2 of 2017 on Construction Services.[12]

COVID-19 Outbreaks: Case of the Cancellation and Termination of Government Construction Contracts." *Journal of Indonesian Legal Studies* 8.1 (2023): 129-158.

8 Kartam, Nabil A., and Saied A. Kartam. "Risk and its Management in the Kuwaiti Construction Industry: A Contractors' Perspective." *International Journal of Project Management* 19, no. 6 (2001): 325-335.

9 *See* Alshihri, Saad, Khalid Al-Gahtani, and Abdulmohsen Almohsen. "Risk factors that lead to time and cost overruns of building projects in Saudi Arabia." *Buildings* 12, no. 7 (2022): 902; Larsen, Jesper Kranker, et al. "Factors affecting schedule delay, cost overrun, and quality level in public construction projects." *Journal of Management in Engineering* 32, no. 1 (2016): 04015032; Famiyeh, Samuel, et al. "Major causes of construction time and cost overruns: A case of selected educational sector projects in Ghana." *Journal of Engineering, Design and Technology* 15, no. 2 (2017): 181-198; Asiedu, Richard Ohene, Ebenezer Adaku, and De-Graft Owusu-Manu. "Beyond the causes: Rethinking mitigating measures to avert cost and time overruns in construction projects." *Construction Innovation* 17, no. 3 (2017): 363-380.

10 Flyvbjerg, "What you should know about megaprojects and why: An overview."

11 *See* Republic of Indonesia. *Indonesian Civil Code (Kitab Undang-Undang Hukum Perdata)*. Available online at <https://jdih.mahkamahagung.go.id/legal-product/kitab-undang-undang-hukum-perdata/detail>

12 *See* Republic of Indonesia. *Undang-Undang Nomor 2 Tahun 2017 tentang Jasa Konstruksi*. (Jakarta: Sekretariat Negara, 2017). Available online at <https://peraturan.bpk.go.id/Details/37637/uu-no-2-tahun-201>

However, Agustina argue that these regulations do not comprehensively address the complexities of modern construction risk. In particular, provisions on risk allocation and responsibility remain ambiguous, leading to inconsistent interpretations and enforcement.[13] This legal gap often results in disputes that could otherwise be mitigated through clearer and more detailed regulatory guidance.

At the global level, risk allocation has been more systematically addressed through standardized contractual frameworks such as FIDIC. These frameworks are grounded in the principle that risk should be allocated to the party best able to manage it.[14] However, the adoption of such standards in Indonesia is not without challenges. Differences in legal traditions, institutional capacity, and industry practices can hinder effective implementation. As Uff[15] observes, the success of standardized contracts depends on their alignment with domestic legal systems and the capacity of stakeholders to understand and apply them appropriately.

Beyond legal considerations, the allocation of risk in construction contracts also has significant social implications. Inequitable distribution of risk can disproportionately affect smaller contractors, workers, and local communities. Uff notes that dominant parties often impose contractual terms that shift excessive risk onto weaker counterparts, exacerbating existing inequalities.[16] In Indonesia, limited access to legal remedies and dispute resolution mechanisms further compounds this issue, creating a systemic imbalance that undermines both fairness and efficiency in the construction sector.

In light of these challenges, this study adopts a normative juridical approach to examine the division of risk burdens and responsibilities in construction contracts, particularly within the framework of FIDIC and Indonesian law. By employing statute and conceptual approaches, this research analyzes primary and secondary legal materials to identify gaps and propose improvements. Through descriptive and deductive analysis, the study aims to contribute to the development of a more balanced, transparent, and adaptive regulatory framework. Such a framework is essential not only for enhancing legal certainty but also for supporting sustainable and equitable development in Indonesia and beyond.

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13 Agustina, Agustina. *Bingkai Hukum Jasa Konstruksi (Masalah Populer dan Konsep Keadilan Holistik sebagai Paradigma Kepastian Hukum)*. (Medan: UMSU Press, 2024).

14 Bunni, *The FIDIC Forms of Contract*.

15 *See* Uff, John. *Construction Law*. 12th ed. (London: Sweet & Maxwell, 2020).

16 Uff.

Legal Framework and the Allocation of Risk in Construction Contracts

All activities in the construction industry must be based on an agreement that has been agreed between the service user and the service provider as a work bond which is the legal basis which in this case is in the form of a construction contract. All parties involved, namely owners, planners/architects, contractors, suppliers, in the entire project series must act professionally and responsibly. Contracts in the construction industry not only govern the parties involved, but also protect them from risks that may arise.

A construction contract is an entire document that regulates the legal relationship between service providers and service users in the implementation of construction work. The most common construction work is based on the FIDIC 1987 and FIDIC 1995 Contract Standards. FIDIC is an abbreviation for *Fédération Internationale Des Ingénieurs-Conseils (*FIDIC) or in English referred to as *the International Federation of Consulting Engineers* or when translated into Indonesian is the International Federation of Engineering Consultants. FIDIC has prepared 2 (two) versions of contract terms with different intentions and objectives, the first is intended for Works *of Civil Engineering Construction* and the second is specifically for Design *Build and Turnkey works*.

The *Federation Internationale Des Ingenieurs-Conseils (*FIDIC) contract is the most common form of contract standard for the international construction industry including Indonesia. FIDIC issued its first contract entitled *Form of Contract for Civil Engineering Construction Work* in 1957. As the title suggests, this first contract was intended for the Civil Engineering sector and was soon known for its cover color, and also known as the *Red Book*.[17] The contract standard was formed by FIDIC as an international representative body formed from national engineering associations. The most commonly used FIDIC contracts include the following:

[17] *See* Simanjuntak, Johan Oberlyn, et al. "Analisa kontrak proyek konstruksi di Indonesia." *Jurnal Visi Eksakta* 2, no. 2 (2021): 205-214; Kesek, Randy Angga Erland, and Sarwono Hardjomuljadi. "Analisis Red Clause Kontrak Konstruksi APBD Dengan Fidic Red Book 1999." *Konstruksia* 11, no. 2 (2020): 103-126. *See also* Baker, Ellis, et al. *FIDIC Contracts: Law and Practice*. (London: Informa Law from Routledge, 2013); Zhao, Tong. "Recovering loss of productivity under FIDIC contracts." *Journal of Legal Affairs and Dispute Resolution in Engineering and Construction* 14, no. 1 (2022): 04521037.

1. The Conditions of the Contract for Construction for Building and Engineering Works Designed by the Employer, referred to as the Red Book. First published in 1957, the fourth and final edition was published in 1987. FIDIC's Red Book is aimed at the civil engineering sector.
2. The Contract Terms for Factory and Design-Build, referred to as the Yellow Book. It was first published in 1999. FIDIC Yellow Book is indicated for contracts where most of the design is in the hands of the Employer.
3. The Contract Terms for EPC/Turnkey Projects, referred to as the Silver Book. It was first published in 1967, the third and last edition in 1987. FIDIC Silver Book is intended for the mechanical and electrical engineering sector.

Based on the legal source, there are two classes of construction contracts in Indonesia, namely the domestic group which is commonly used for development projects owned by domestic agencies and the foreign group which is used for construction contracts in the international world or domestic projects that receive loan funds from abroad.[18] Based on Article 1 number 8 of the Construction Services Law Number 2 of 2017 (hereinafter referred to as UUJK No. 2/2017), a construction work contract is an entire document that regulates the legal relationship between service users and service providers in the implementation of construction work. In addition, the main provisions of construction are regulated in Articles 1604 to 1615 of the Third Book concerning the Attachment of the Civil Code (*KUHPerdata*)[19] concerning Wholesale Work where the term wholesale agreement is used for construction work contracts.

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[18] Inayah, Desy Tri. "A Comparative Study of National and International Contracts Document Refers to the FIDIC Standard on Construction Projects in Indonesia." *INCEESS 2020: Proceedings of the 1st International Conference on Economics Engineering and Social Science, InCEESS 2020, 17-18 July, Bekasi, Indonesia*. Vol. 466. European Alliance for Innovation, 2021. *See also* Sugianto, Fajar, Velliana Tanaya, and Tomy Michael. "A brief comparative study between indonesian contract law under indonesian civil code and singapore contract law." *Journal of International Trade, Logistics and Law* 9, no. 2 (2023): 132-143.

[19] *See* Chapter III on Indonesia Civil Code. Articles 1604 to 1615 of the Indonesian Civil Code (KUHPerdata) in the Third Book regulate wholesale work agreements (*perjanjian pemborongan pekerjaan*), which serve as the early legal foundation for construction contracts in Indonesia. In this arrangement, one party (the contractor) agrees to complete a specific work for another party at an agreed price and result, rather than under a continuous employment relationship. The provisions outline basic rights and obligations, including standards of work, responsibility for defects, completion duties, and general risk allocation between parties. However, these articles are highly general and do not address the complexity of modern construction projects. The main problem with these provisions is their limited ability to accommodate contemporary

Construction work contracts are in the form of contract documents that contain technical, administrative, legal, financial/banking, taxation, and socio-economic aspects. A construction work contract is one of the nominal contracts or unnamed contracts, or unknown contacts in the Civil Code, but in general it can be seen in the provisions of Article 1319 of the Civil Code, which states that "*all agreements, both those with a special name and those not known by a certain name, are subject to the general regulations contained in this chapter and the previous chapter*". This article means that any agreement, even if it does not have a name in the Civil Code, the parties are also subject to the provisions and principles therein.

The aspects contained in the construction contract, among others, are a) Technical Aspects, which are the dominant aspects in the construction work contract which include general and special conditions of the contract, technical specifications, and drawings; and b) Legal Aspects, which are aspects that include provisions that have legal implications such as temporary suspension of work, termination of agreements/termination of contracts, compensation for delays, dispute resolution, force majeure, applicable law, contract language, domicile, and other matters that override Article 1266 of the Civil Code regarding the termination of agreements through the courts.[20]

In Indonesia, construction work contracts are embodied in Construction Contracts both from the pre-contractual stage, formation/preparation to their implementation. Documents that cover technical aspects are outlined in the Annex to the General Requirements and Special Conditions whose substance not only refers to scientific and technological concepts or theories, but also refers to guidelines from Non-Governmental Institutions. Guidelines that are private, especially international construction service agreements often follow the terms or standards of contracts issued by several countries and professional associations. In Indonesia, it is commonly found in government projects

construction practices, which involve multi-party coordination, advanced technology, and complex risk structures. The KUHPerdata does not provide detailed rules on risk distribution, delay management, or third-party interference, leading to legal uncertainty in practice. As a result, disputes often rely on interpretation rather than clear statutory guidance, making outcomes inconsistent. This gap has encouraged reliance on newer regulations and international standards such as FIDIC, highlighting the need for legal reform to better align Indonesian contract law with modern construction realities.

[20] Damayanti, Chyntia, Moch Najib Imanullah, and Pranoto Pranoto. "Kajian Yuridis Pelaksanaan Kontrak Kerja Konstruksi Antara Kepala Bidang Bina Marga Dinas Pekerjaan Umum Kabupaten Kebumen dengan CV. Metro Jaya dalam Pekerjaan Peningkatan Kualitas Jalan Lintas Desa Lumbu Kecamatan Kutowinangun." *Privat Law* 3, no. 1 (2017).

that use loans from abroad or foreign private parties operating in Indonesia such as the FIDIC 1987 Contract Standard for civil construction work, the FIDIC 1995 Standard for design and *turnkey* work contracts, the AIA Standard for civil works, and the JCT 1980/SIA 80 Contract Standard for building work contracts.[21]

Based on Article 46 of UUJK No. 2/2017 states that the arrangement of the employment relationship between service users and service providers must be stated in the construction work contract.[22] The form can follow the development of needs and be implemented in accordance with the provisions of the law. The format used in both construction contracts in Indonesia and international construction contracts is the same which contains; Agreement/*Article of Agreement/Article of Contract*, Conditions *of Contract* in General and *Particular*, Appendices, *Technical Specifications* and Contract *Drawings*. A construction work contract according to Article 47 of Law No. 2/2017 must at least include a description of: a) the parties; b) work formulation; c) the duration of the coverage; d) equal rights and obligations; e) the use of construction labor; f) method of payment g) default; h) dispute resolution; i) termination of the construction work contract; j) compelling circumstances; k) failure of the Building; l) worker protection; m) protection of third parties other than the parties and workers; n) environmental aspects; o) guarantee for risks arising and legal liability to other parties in the implementation of Construction Work or the consequences of Building Failure; p) Construction dispute resolution options.

The similarity of UUJK No. 2/2017 and the provisions of the FIDIC contract stipulate the relationship between the parties and consider the risks. The allocation of risk takes into account the responsibilities of the parties, including their legal and warranty liabilities. The format is used in civil law jurisdictions and includes provisions that address rights and obligations during the course of the project. The load material in FIDIC standard construction contracts regulates the balance of rights and obligations of the parties as well as clear and impartial provisions on the sharing of burdens, risks and responsibilities. The fundamental difference

[21] Hansen, Seng. *Manajemen Kontrak Konstruksi*. (Jakarta: Gramedia Pustaka Utama, 2015). *See also* Japar, Sugiarto Raharjo. "Prinsip-Prinsip Kontrak Konstruksi Indonesia." *MIMBAR YUSTITIA: Jurnal Hukum dan Hak Asasi Manusia* 2, no. 2 (2018): 191-213.

[22] Utama, Meria, and Irsan Irsan. "General overview on selecting and drafting construction contract disputes resolution." *Sriwijaya Law Review* 2, no. 2 (2018): 152-169; Vidyapramatya, Nurindria Naharista, et al. "Authority of the Dispute Council in the Resolution of Construction Disputes in Indonesia." *Law Reform* 19, no. 1 (2023): 88-109.

is that FIDIC users need to be aware that if any of the agreed provisions are subject to delays, defects in contracts, variations and termination, as well as risks and liabilities in accordance with FIDIC's standard forms in accordance with civil law jurisdiction so that the parties' agreement is protected and does not cause unintended legal consequences for non-compliance with relevant local laws.

The risk in question is a variation in things that may occur naturally or the possibility of unexpected events that are a threat to property and financial gains due to the danger that occurs.[23] Risk refers to an event or set of circumstances that, if it occurs, will have an impact on the achievement of project objectives.[24] Both definitions can be interpreted to mean that risk can be equated with the possibility or threat of external or internal dangers, damages, liabilities or negative events that can be avoided through preventive measures.

The emergence of risks is a possibility that must occur and can manifest or affect the success of the project, the duration of the project is not according to the target time, or the cost exceeds the project budget. Another situation is the risk that occurs if there are any circumstances that cause the party that was initially released from the burden to be responsible for the negative impact caused by the unplanned event, meaning that it bears the risk outside the construction contract.

The principle of *risk sharing* in civil law is the development of the principle of freedom of contract, the principle of consensualism, the principle of pacta sunt servanda, and the principle of proportionality. The principle of freedom of contract, *pacta sunt servanda*, and the principle of consensualism are reflected as Article 1338 paragraph (1) Jo. 1320 of the Civil Code implies that the parties can enter into any agreement, including construction contracts, and agree on the contents desired by the parties and legally apply as a law for those who make them.[25]

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[23] Iqbal, Shahid, et al. "Risk management in construction projects." *Technological and Economic Development of Economy* 21, no. 1 (2015): 65-78.

[24] *See* Klee, Lukas. "Delivery methods under FIDIC forms of contract." *The Lawyer Quarterly* 3, no. 2 (2013).

[25] Article 1338 paragraph (1) of the Indonesian Civil Code (KUHPerdata) establishes the principle of *pacta sunt servanda*, meaning that every legally made agreement applies as law to the parties who made it. When read together with Article 1320, which sets the legal requirements for a valid contract (consent, capacity, a certain object, and a lawful cause), these provisions form the foundation of contractual freedom, including in construction agreements. In the context of *risk sharing*, these articles imply that the allocation of risk between parties is primarily determined by mutual agreement. As long as the contract is valid under Article 1320, the parties are free to define how risks—such as delays, cost overruns, or unforeseen events—are distributed. However, in practice, this principle often creates imbalance in construction contracts. The stronger party may impose standard terms that disproportionately shift risks to the contractor, even if the

Practical Challenges, Risk Manifestation, and Social Implications in Construction Project Implementation

Beyond legal frameworks, the practical implementation of construction contracts reveals significant challenges in managing risk and responsibility among stakeholders. Construction projects are inherently vulnerable to uncertainties arising from design changes, site conditions, financial fluctuations, and administrative inefficiencies. Kartam and Kartam emphasize that such risks are multidimensional and often interrelated, making them difficult to fully anticipate or eliminate.[26] In Indonesia, these challenges are intensified by discrepancies between contractual documentation and actual field conditions, leading to frequent disputes and project inefficiencies.

Common risk manifestations in construction projects include cost overruns, delays in completion, and rework due to design modifications. Flyvbjerg highlights that large-scale infrastructure projects globally often underestimate costs and overestimate benefits, resulting in systemic inefficiencies.[27] In the Indonesian context, these issues are further exacerbated by weak contract administration, unclear scope definitions, and delays in payment processes. These factors create a chain reaction of risks that ultimately affect project performance, stakeholder trust, and economic outcomes.

From a social perspective, inadequate risk allocation has broader implications beyond contractual parties. Inefficiencies in construction projects directly impact public welfare, particularly in infrastructure-dependent sectors such as transportation, housing, and energy. Uff argues that disproportionate risk transfer to contractors often leads to financial distress among smaller firms, which in turn affects employment stability and local economic development.[28] Moreover, weak risk governance can

contractor has limited control over certain events. While legally binding under Article 1338(1), such arrangements may raise issues of fairness and good faith. Therefore, risk sharing under these provisions is not automatically equitable; it depends heavily on bargaining power and contract drafting. This highlights the need for good faith interpretation and regulatory guidance to ensure that contractual freedom does not result in unjust risk allocation in construction practice.

[26] *See* Kartam, and Kartam. "Risk and its Management in the Kuwaiti Construction Industry: A Contractors' Perspective."

[27] *See* Flyvbjerg, "What you should know about megaprojects and why: An overview."

[28] *See* Uff, *Construction Law*

reduce public confidence in infrastructure projects funded by the state, thereby undermining the legitimacy of development policies.

At this context, the Civil Code regulates the principle of risk with the principle of *res perit debitori* and *res perit domino,* both of which have the same legal force, not binding because the parties must still comply with the construction contract that has been made, meaning that the division of burdens, risks and responsibilities is regulated in the contract. In addition, according to FIDIC, the burden of risk varies depending on the category of unforeseen events that arise during the performance of the contract, but does not eliminate the essence of the principles in Civil Law.

In order to obtain practical and effective construction management, the sharing of risks according to FIDIC rules[29] must be allocated as follows:

1. To the negligent party, if the risk is caused by the wrong execution of the contract or lack of efficiency or reasonable care in the execution of the contract.
2. To the party who is the beneficiary of the insurance, if the party can cover the impact of the risk with the amount obtained from the insurance premium.
3. To those who obtain greater economic benefits as a result of bearing these risks.
4. If none of the reasons mentioned above, or if it would be detrimental to the purpose of the contract, to the party who suffered the loss due to the occurrence of the risk.

Before knowing the division of risks, there are 6 sources of risk including the onset of inflation; unforeseen soil conditions; material delays; incorrect design details such as the wrong size of the drawings made by the Architect; the main contractor cannot afford to pay or goes bankrupt; and there is no coordination.[30] According to the type, these risks are:[31]

1. External Risks
    a. Unpredictable: a) Changes in laws and regulations; b) Natural disasters; hurricanes, floods, earthquakes; c) As a result of the incident of destruction and sabotage; d) Environmental and social impacts as a result of the project; e) Failure to complete the project.

[29] *International Federation of Consulting Engineers* The FIDIC Contracts Guide (2000)

[30] Flanagan, R. and Norman, G. *Risk Management and Construction*, (Blackwell Scientific, Oxford University, 1993)

[31] Wideman, M. R. *Project And Program Risk Management: A Guide To Managing Project Risk Opportunities. (*Project Management Institute USA, 1992)

b. Predictable: a) Market risk; b) Operational (after the project is completed); c) Environmental and social influences; d) Currency changes; e) Inflation; and f) Taxes.

2. Internal Risks
   a. Non-Technical but Controllable: a) Management; b) Late Schedule; c) Cost Addition; d) Cash Flow; e) Potential Loss on Benefits and Profits
   b. Technical and Controllable: a) Technological Change; b) Specification Risk on Project Technology; c) Design; and d) Law; Licenses, Patents, Outside and Inside Lawsuits, and Unforeseen Things

According to Pollack and Algeo, the main sources of common risks are:[32]

1. Physical: Loss or damage due to fire, earthquake, flood, accident and landslide. Environment: Ecological damage, pollution and waste treatment, investigation of the state of society.
2. Design: a) New technologies and applications, test durability and safety; b) Details, accuracy and conformity of specifications; c) Planning risks arising from measurement and research; d) Possible changes to the approved draft; e) Design interaction with construction methods.
3. Logistics: a) Loss or damage to materials and equipment in transit; b) Availability of specialized resources, c) separation of organizations.
4. Finance: a) availability of funds and adequacy of insurance, b) provision of sufficient cash flow, c) losses due to contractors, suppliers d) fluctuations in exchange rates and inflation, e) taxation, f) interest rates, g) borrowing costs
5. Legislation: changes caused by legislation or the government
6. Intellectual property security
7. Land rights and use.
8. Politics: a) Political risks in the countries of project owners, suppliers and contractors, wars, revolutions and changes in the law, b) uncertainty of government policies.
9. Construction: a) feasibility of construction methods, safety, b) industrial relations, c) degree of change from the initial design, d) weather, e) quality and availability of management and supervision, f) hidden conditions.

[32] *See* Pollack, Julien, and Chivonne Algeo. "The contribution of project management and change management to project success." *The Business & Management Review* 6, no. 2 (2015): 30-31.

10. Operations: a) fluctuations in market demand for products and services produced, b) maintenance needs, c) reliability, d) implementation safety, e) factory availability, f) management.

Based on the type and source of risk, it can be concluded that risk is divided into 4 (four) categories, namely natural risk, political and social risk, economic and legal risk, and risk arising from the contractual behavior of the parties.

1. Natural Risks
   a. Climate Conditions

      Based on Sub-clause 8.4 on Extension of Implementation Time, 17.3 on Employer Risk and 17.4 on Consequences for Service Users of Red and Yellow FIDIC[33], correlative stipulates that the burden of risk arising from climatic conditions is shared between the Contractor and the Employer. A contractor will bear the financial consequences arising from normal climate change i.e. loss of profits from tenders and incur additional costs, unless costs cannot be foreseen. In the event of significant climate change, the Employer will extend the implementation time, while the Contractor will bear the relevant costs i.e. registered additional costs and loss of profits. If the natural disaster is unexpected, the Employer provides work relief (EOT) and bears additional costs, while the Contractor bears the loss of profit.

   b. Unpredictable Physical Conditions

      As a means of preventing risks that occur due to unpredictable physical conditions, the Employer is responsible for the information before and after the base date to the Contractor in accordance with Sub-clause 4.10 on Location Data. Therefore, under the FIDIC Red and Yellow, the Contractor is the party responsible for the interpretation of the information.

      The provision that such risks are transferred to the Contractor has a double limitation, namely the contractor may consider the costs and time anticipated on the tender date during the investigation or the physical conditions that can reasonably be estimated on the tender date. Pursuant to Sub-clause 4.12 of the General Provisions of the Red and Yellow FIDIC Contract[34], physical condition means the natural and man-made physical condition and other physical barriers that contaminate the environment encountered by the Contractor at the performance site including subsurface and hydrological conditions, but excluding climatic conditions.

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33 *See* Baker, et al. *FIDIC Contracts: Law and Practice*.

34 Baker, et al., pp. 90-91.

The handling of unexpected physical conditions in principle relies on a contingency test that states that the Employer bears the burden of risk as long as the risk is not foreseen based on the cost and time provided by the Contractor, as well as based on the normal experience of the contractor involved in the project.

2. Political and Social Risks

Political and social risks are defined as the same as unconditional transfer of risks as per Sub-clause 17.3 on Employer Risk and Sub-clause 19 on Force Majeure of the General Provisions of the Red and Yellow FIDIC Contracts. If these risks occur and have an impact on the implementation of the project, the Employer will provide employment relief (EOT) and pay compensation for additional costs incurred by the Contractor, without providing additional benefits. However, social risk provisions such as vandalism or theft are not regulated in the General Conditions of the FIDIC Contract. Therefore, the content is subject to the principle of consensualism between the parties but the Contractor remains responsible in terms of technical, financial, and time required for the implementation of the work. On the other hand, under Sub-clause 17.2 on Maintenance of Works by the Contractor[35], the Contractor shall reimburse for the cost of maintenance of the works and goods during the performance period including any loss or damage incurred in relation to the work, goods or documents of the Contractor.

3. Law and Economic Risks

Economic risks are generally in the form of fluctuations (inflation) in the price of equipment, materials, and labor costs. Under Sub-clauses 4.1 and 6.1 of the General Conditions of the FIDIC Contract, the Employer shall make all necessary arrangements to employ all personnel and labour, as well as to provide them with remuneration, accommodation, food and transportation. It can therefore be concluded that the Contractor will bear all consequences arising from the lack of availability of personnel, materials, unless this shortage cannot be foreseen in advance up to the date of the Tender. Meanwhile, inflation risk is borne jointly between the Employer and the Contractor.

Legal risks generally occur in changes in national laws and regulations. Based on Sub-clause 13.7 on Adjustment to Amendments to Laws and Regulations General Provisions of the FIDIC Contract[36]

[35] Baker, et al., p. 272.
[36] Baker, et al., p. 92.

stipulates that as long as the Contractor experiences delays and/or additional costs as a result of such amendments or interpretations, which are made after the Base Date, the Contractor is entitled to an extension of time due to such delay, in accordance with Sub-clause 8.4 on Extension of Completion Time, if completion of the Work is pending or will be delayed and is entitled to payment of the Additional Fees listed and will be included in the Contract Price. Therefore, according to the FIDIC – Red or Yellow Book standard, such legislative changes are under the responsibility of the Employer.

4. Risks Arising from the Conduct of Parties

This risk occurs if there is an act that violates the agreement that has been agreed between the parties, actual losses (delays in implementation and additional costs resulting in the expected profit on the date of submission of the offer), and a causal relationship. This form of risk is borne by the at-fault party between the Employer or the Contractor.

a. Risks borne by the Employer include: Late submission of Design Drawings or Instructions (Sub-clause 1.9 [Late drawings or instructions])
b. Delay in ensuring access to the site (Sub-clause 2.1 [21] [Right of Access to the Site])
c. Failure to send notice within the general contract period of 28 days, in relation to the maintenance of financial arrangements, when there is a request in this regard from the Contractor (Sub-clause 2.4 [Financial Arrangements of the Employer])
d. Delay in making a payment (Sub-clause 14.8 [Pending Payment])
e. Design defects (Sub-clause 17.3 [Employer Risk])
f. The use or occupation by the Employer of any part of the Permanent Employment, except as specified in the Contract (Sub-clause 17.3 [Employer Risk]).

Risks borne by the Contractor include:

a. Work accidents (Sub-clause 4.1 [General Obligations of the Contractor]) Damage, loss or expense (taxes and legal fees) that may arise as a result of the carriage of the Goods (Sub-clause 4.16 [Carriage of Goods])
b. Subcontractor's actions in breach of contract (Sub-clause 4.4 [Subcontractor])
c. Defects in equipment, materials, execution (Sub-clauses 7.1 – 7.5)

In addition to risks allocated between the Contractor and the Employer arising from their respective conduct, other risks may also stem

from third parties and affect project cost or duration. These include issues such as unauthorized access and site security under Sub-Clause 4.22 of the FIDIC Conditions of Contract, where the Contractor is responsible for preventing access to the site by unauthorized persons. Furthermore, delays caused by public authorities under Sub-Clause 8.5 [Delays Caused by Authorities] are generally borne by the Contractor in terms of project execution time; however, the Contractor is entitled to an extension of time pursuant to Sub-Clause 8.4(b) of FIDIC.

Therefore, the lack of effective risk management mechanisms creates a governance gap between legal regulation and practical implementation. While contracts are intended to function as instruments of control and accountability, in practice they often fail to prevent disputes due to vague drafting or inadequate enforcement. This situation highlights the need for stronger integration between legal norms, project management practices, and institutional oversight. Strengthening contract administration systems and adopting more adaptive risk-sharing models, similar to those used in FIDIC-based frameworks, may help bridge this gap and improve overall project outcomes.

Conclusion

This study shows that risk and responsibility in construction contracts are central issues that directly affect legal certainty, project performance, and stakeholder fairness. In Indonesia, although the Civil Code and Law No. 2 of 2017 on Construction Services provide a general legal foundation, they do not adequately regulate detailed mechanisms of risk allocation in complex construction projects. This creates interpretative gaps that often lead to disputes, inefficiencies, and unequal distribution of responsibility, particularly when unforeseen events arise during project implementation.

Comparatively, international frameworks such as the FIDIC Conditions of Contract offer a more structured and principled approach to risk allocation, based on the idea that risks should be borne by the party best able to manage them. However, this study also highlights that the effectiveness of such global standards depends heavily on their adaptation to domestic legal systems and institutional capacity. In the Indonesian context, partial adoption without full contextual integration has contributed to inconsistencies between contractual design and practical enforcement, especially in relation to delays, third-party interference, and site-related risks.

Therefore, this article concludes that a more coherent and adaptive regulatory reform is necessary to strengthen construction contract governance in Indonesia. Such reform should focus on clarifying risk allocation mechanisms, improving contract administration practices, and aligning national regulations with internationally recognized standards in a context-sensitive manner. By doing so, construction law can better support equitable risk distribution, enhance legal certainty, and contribute to more efficient and sustainable infrastructure development.

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DECLARATION OF CONFLICTING INTERESTS

The authors state that there is no conflict of interest in the publication of this article.

FUNDING INFORMATION

None.

ACKNOWLEDGMENT

None

GENERATIVE AI STATEMENT

None.

HISTORY OF ARTICLE

Submitted : January 12, 2025
Revised : May 12, 2025; August 20, 2025; October 15, 2025
Accepted : November 2, 2025
Published : November 30, 2025