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Tax Policy Restores the Economy After a Disaster: A Comparative Perspective of Indonesia, the Philippines, and the United States

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ABSTRACT

Purpose: This study aims to compare the design, implementation mechanisms, and policy objectives of post-disaster tax incentives in Indonesia, the Philippines, and the United States, while examining how differences in fiscal capacity, institutional arrangements, and tax administration systems influence their effectiveness in supporting economic recovery.

Method: This study employs a comparative qualitative approach based on a systematic literature review and document analysis. The literature selection process followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. Data were collected from academic publications, government regulations, policy reports, and official documents published between 2010 and 2026. The selected studies were analysed using directed qualitative content analysis across five comparative dimensions: types of tax incentives, administrative tax relief, target beneficiaries, institutional arrangements, and contributions to economic recovery.

Findings: The findings indicate that Indonesia, the Philippines, and the United States all utilize tax policy as a fiscal instrument to support post-disaster economic recovery through tax relief, filing and payment extensions, and administrative assistance. However, significant differences exist in policy design and implementation. Indonesia adopts a centralized approach, the Philippines combines central and local government coordination, while the United States operates through a comprehensive federal framework with broader tax benefits and stronger institutional capacity. The effectiveness of post-disaster tax incentives is influenced not only by fiscal resources but also by administrative efficiency, legal frameworks, and institutional coordination.

Implications: The findings suggest that governments should strengthen interagency coordination, improve tax administration systems, and integrate tax incentives into broader disaster risk financing and recovery strategies to enhance policy effectiveness.

Novelty/Value: This study contributes to the growing literature on disaster-responsive fiscal policy by providing a comparative analysis of post-disaster tax incentives in both developing and developed countries. The study offers a more comprehensive understanding of how fiscal capacity, institutional governance, and tax administration systems influence the effectiveness of tax incentives, while also providing policy lessons for the design of more responsive, equitable, and resilient tax policies in the face of natural disasters.

Keywords: Post disaster tax incentives, economic recovery, comparative analysis, disaster taxation, fiscal resilience.

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INTRODUCTION

In the context of public financial management, taxation plays a fundamental role as a primary instrument for maintaining fiscal stability while supporting sustainable economic development (Capuno et al., 2024; Kucuk & Ulubasoglu, 2024). Tax revenue serves as a crucial source of government funding for the provision of public services, infrastructure development, social programs, and emergency response initiatives. However, the occurrence of natural disasters presents unique challenges for tax policy. Governments are required to allocate sufficient fiscal resources to support disaster response, recovery, and reconstruction efforts, while at the same time affected households and businesses often experience economic hardship that reduces their capacity to comply with tax obligations (Afonso et al., 2023; Izumi & Shaw, 2026).

In 2024, the combination of geological conditions and extreme weather events led to the occurrence of major disasters across various regions of the world, highlighting the importance of examining countries with the highest levels of disaster risk (World Economic Forum, 2025). The 2025 update, based on the most recent data, provides valuable insights into the countries most affected by such events (Singh, 2025). According to the latest comprehensive data for 2024, a country's level of vulnerability is largely determined by its geographical characteristics and the frequency of major disaster occurrences. For instance, the United States experiences a wide range of disasters, including tornadoes in the Midwest, hurricanes along coastal areas, and wildfires in the western region (Congressional Policy and Budget Research Department House of Representatives, 2024; Harshita Singh, 2025).

Table 1. Countries With the Highest Number of Disasters

Rank	Country	Number of Disasters 2024	Primary Disaster Types
1	United States	26	Wildfires, Hurricanes, Tornadoes, Winter Storms
2	Indonesia	20	Earthquakes, Floods, Volcano Eruptions
3	Colombia	14	Earthquakes, Landslides, Floods
4	China	12	Earthquakes, Landslides, Typhoons, Floods
5	Brazil	12	Floods, Droughts, Landslides
6	Philippines	12	Typhoons, Earthquakes, Volcano Eruptions
7	Venezuela	8	Floods, Landslides
8	Afghanistan	8	Earthquakes, Droughts
9	Thailand	8	Floods, Tropical Storms
10	Vietnam	8	Typhoons, Floods

Source: Statistics, Relief Web (2024)

Based on Table 1, the United States ranks first with 26 natural disasters in 2024, dominated by forest fires, hurricanes, tornadoes, and winter storms (Harshita Singh, 2025). This shows the high frequency of disasters in the United States, which is influenced by its vast geographical conditions and extreme climate variations. Indonesia ranks second with 20 natural disasters, with the main types of disasters being earthquakes, floods, and volcanic eruptions (Harjadi, 2024; Mahendra et al., 2022). Indonesia's position in this ranking reflects its high vulnerability to disasters due to its location in the Pacific Ring of Fire and its archipelagic nature, which is prone to hydrometeorological disasters.

Table 2. World Risk Index

Rank	Country	World Risk Index 2024 (Score)	Key Factors
1	Philippines	46.9	High exposure of typhoons and earthquakes
2	Indonesia	41.1	High seismic activity and volcanic risk
3	India	41.0	Diverse risks including floods, droughts, and earthquakes
4	Colombia	37.8	High seismic activity due to plate collisions
5	Mexico	35.9	Situated in a seismically active zone

Source: World Risk Index (2024)

The World Risk Index in Table 1, assesses a country's risk of being affected by natural disasters using a different approach, focusing on the levels of exposure and vulnerability. The index score ranges from 0 to 100 and reflects the likelihood of a country experiencing disaster events. According to the latest World Risk Index 2024 report, the Philippines remains the country with the highest disaster risk worldwide (Congressional Policy and Budget Research Department House of Representatives, 2024).

Table 2 presents the rankings of countries based on the 2024 World Risk Index (WRI), which reflects the level of disaster risk and vulnerability associated with natural hazards. The WRI score is derived from the interaction between a country's exposure to natural hazards and its structural vulnerability, including its susceptibility, coping capacity, and adaptive capacity (Congressional Policy and Budget Research Department House of Representatives, 2024; Mahendra et al., 2022). Although the United States may experience the highest number of natural disaster events in a particular year, disaster risk is not determined solely by the frequency of disasters. Rather, it is shaped by a combination of geographical, socioeconomic, and institutional factors that influence a country's vulnerability. Consequently, the World Risk Index and related assessments consistently identify the Philippines and Indonesia as among the countries facing the highest overall disaster risks globally, despite the United States recording a greater number of disaster events in certain years (Harjadi, 2024; Harshita Singh, 2025).

This contrast provides a strong rationale for comparing Indonesia, the Philippines, and the United States in the context of post-disaster tax policy. Indonesia and the Philippines represent developing economies with high levels of disaster vulnerability due to their location within the Pacific Ring of Fire, where recurring natural hazards frequently generate significant economic losses, infrastructure damage, and fiscal pressures. In contrast, the United States represents a developed economy with greater fiscal capacity, more established disaster management institutions, and a relatively comprehensive framework for post-disaster tax relief. Despite these differences, all three countries face recurring natural disasters and require timely fiscal measures to support economic recovery. Therefore, comparing their post-disaster tax incentive policies provides valuable insights into how differences in institutional capacity, fiscal resources, and governance structures influence policy implementation and effectiveness. Such a comparison also helps assess whether tax incentives serve merely as short-term relief mechanisms or as strategic instruments that contribute to broader economic recovery and long-term fiscal resilience.

The comparison of Indonesia, the Philippines, and the United States is particularly relevant because these countries represent different disaster risk profiles and fiscal governance contexts, which may influence the design and effectiveness of post-disaster tax incentives. Indonesia and the Philippines are highly disaster-prone developing countries located within the Pacific Ring of Fire, where frequent earthquakes, volcanic eruptions, typhoons, and floods often result in substantial economic losses, infrastructure damage, and significant fiscal pressures on government budgets. In contrast, the United States represents a developed economy with stronger fiscal capacity, more established disaster management institutions, and a relatively standardized framework for providing post-disaster tax relief at the federal level.

Despite differences in economic development and institutional capacity, all three countries experience recurring natural disasters that require timely fiscal interventions to facilitate economic recovery. Therefore, comparing these countries provides an opportunity to examine how differences in fiscal resources, administrative capacity, institutional arrangements, and disaster governance systems affect the implementation of post-disaster tax incentives. Furthermore, this comparison offers valuable insights into whether tax incentives function merely as short-term administrative relief measures or can also serve as strategic policy instruments that contribute to broader economic recovery and long-term fiscal resilience. The findings are expected to provide policy lessons for improving disaster-related tax policies, particularly in countries seeking to strengthen their disaster response and recovery frameworks. By examining these different contexts, this study aims to identify policy lessons and best practices that can be adopted to strengthen disaster-responsive tax policies, particularly in developing countries facing increasing disaster risks and limited fiscal capacity. This comparison is expected to generate practical policy recommendations for improving the effectiveness, equity, and responsiveness of post-disaster tax incentive policies across countries with varying levels of fiscal capacity and disaster vulnerability.

Despite differences in economic development, fiscal capacity, and institutional maturity, Indonesia, the Philippines, and the United States share a common approach in utilizing tax policy as a fiscal instrument to respond to the impacts of natural disasters. All three countries have implemented various forms of tax incentives and relief measures to reduce the economic burden on affected

individuals and businesses, maintain economic activity, and support post-disaster recovery efforts. In addition to serving as short-term economic stabilization tools, tax policies in these countries also form part of broader fiscal strategies aimed at facilitating reconstruction and enhancing economic resilience (Mapuasari et al., 2023). Therefore, the similarities and differences in these fiscal approaches provide a strong foundation for conducting a comparative analysis of the effectiveness of post-disaster tax incentives across different national contexts.

In the fiscal context, governments play a strategic role in maintaining post-disaster economic stability through various policy instruments, one of which is the provision of tax incentives and relief measures (Kucuk et al., 2021; Kucuk & Ulubasoglu, 2024). The implementation of such incentives in several countries aims to alleviate the economic burden on affected taxpayers, accelerate post-disaster economic recovery, sustain business continuity and prevent widespread business failures, support social stability and reduce the potential for conflict, promote long-term tax compliance, and complement direct assistance, subsidies, and reconstruction programs. As a result, recovery efforts can be carried out in a more comprehensive and sustainable manner (Afonso et al., 2023; Dari-Mattiacci & Faure, 2015).

In Indonesia, several tax policy instruments can be considered to support disaster mitigation programs, including tax exemptions, tax deferrals, reductions in the tax base, lower tax rates, and the implementation of tax expenditures through government-borne tax relief measures (Dwi Utomo, 2024; Mahendra et al., 2022; PSHK, 2017). In the Philippines, increased revenue generated from local tax collection may provide greater benefits to disaster-affected communities than intergovernmental fiscal transfers, as it enables local governments to respond more effectively to local recovery needs (Ballesteros & Domingo, 2010; Izumi & Shaw, 2026). Meanwhile, in the United States, post-disaster tax incentives are implemented through various forms of fiscal relief, including extensions of tax filing and payment deadlines, waivers of administrative penalties, and the recognition of disaster-related losses as deductible expenses for income tax purposes. These measures are intended to accelerate economic recovery, maintain the liquidity of households and businesses, and strengthen the fiscal resilience of communities affected by natural disasters (Internal Revenue Service, 2025; Kucuk & Ulubasoglu, 2024).

Evidence from studies conducted in various countries suggests that disaster-related tax incentives serve as rapid and flexible policy instruments for responding to emergency situations, particularly by alleviating the fiscal burden on households and businesses affected by natural disasters (Izumi & Shaw, 2026). Research in both developed and developing countries has found that tax relief measures, including tax reductions, deferrals, and exemptions, contribute to the recovery of economic activities, especially among small and medium-sized enterprises (SMEs) and local economic sectors in disaster-affected areas (Dari-Mattiacci & Faure, 2015; Harshita Singh, 2025) Furthermore, many studies emphasize that post-disaster tax incentives reflect governmental responsiveness, fairness, and empathy, thereby strengthening the legitimacy of public policies.

Previous studies have examined disaster-related tax policies in various national contexts. In Indonesia, research has primarily focused on the role of tax incentives and fiscal relief measures in assisting taxpayers and maintaining regional fiscal stability following disasters. Tax incentives, particularly those related to property taxation, have been shown to reduce the economic burden on affected communities while supporting the fiscal resilience of local governments (Dwi Utomo, 2024; Mahendra et al., 2022). In the Philippines, disaster-related tax policies have largely emphasized the importance of local government fiscal capacity and revenue mobilization in strengthening disaster resilience (Ballesteros & Domingo, 2010). Similarly, Capuno et al. (2024) demonstrate that local public finances play a crucial role in accelerating post-disaster economic and social recovery. In the United States, studies have found that various forms of post-disaster tax relief, including extensions of tax filing deadlines and tax deductions for disaster-related losses, can reduce the economic burden on taxpayers while supporting the recovery of households and businesses (Kucuk & Ulubasoglu, 2024).

Although these studies provide evidence of the importance of tax policies in disaster management, most still focus on the experience of a single country or a specific fiscal instrument. Consequently, there remains a limited understanding of how differences in fiscal capacity, institutional structures, disaster governance, and tax administration systems affect the effectiveness of post-disaster tax incentives

across countries. Therefore, this study aims to address this gap through a comparative analysis of post-disaster tax incentives in Indonesia, the Philippines, and the United States.

This study aims to compare the design, implementation mechanisms, and policy objectives of post-disaster tax incentives in Indonesia, the Philippines, and the United States. Specifically, it seeks to identify the similarities and differences in fiscal incentives, tax administrative relief measures, and institutional arrangements adopted by each country in response to natural disasters. Furthermore, the study examines how variations in fiscal capacity, disaster governance, and tax administration systems affect the effectiveness of tax incentives in supporting post-disaster economic recovery. By adopting a cross-country comparative perspective, this research is expected to contribute to the growing literature on disaster-responsive fiscal policy and provide policy recommendations for developing more effective, equitable, and sustainable post-disaster tax incentive frameworks.

LITERATURE REVIEW

Fiscal Policy Theory

Fiscal Policy Theory explains that governments utilize fiscal instruments, particularly taxation and public expenditure, to achieve various economic objectives, including economic stability, economic growth, efficient resource allocation, and a more equitable distribution of income (Musgrave & Musgrave, 1989).Within this framework, taxation serves not only as a source of government revenue but also as a policy instrument that can influence the economic behavior of individuals and businesses. Under normal circumstances, tax revenues are primarily used to finance the provision of public goods and services. However, when economic disruptions occur as a result of natural disasters, governments may implement responsive fiscal policies through various forms of tax incentives to alleviate the economic burden on affected households and businesses. These incentives may include tax exemptions, reduced tax rates, tax payment deferrals, extensions of filing deadlines, and other forms of tax relief.

From the perspective of Fiscal Policy Theory, post-disaster tax incentives constitute part of the government's stabilization function. Such measures are intended to maintain household purchasing power, preserve the liquidity of households and businesses, sustain economic activities, and accelerate economic recovery following natural disasters (Sudirman, 2014). Accordingly, tax incentives can be viewed as fiscal instruments that help mitigate the adverse economic impacts of disasters while promoting economic stability during the recovery period. In the context of this study, Fiscal Policy Theory serves as the theoretical foundation for explaining how post-disaster tax incentives are utilized by the governments of Indonesia, the Philippines, and the United States as fiscal policy instruments to support economic recovery. The theory also provides a useful framework for understanding how differences in fiscal capacity and tax policy across countries may influence the design and implementation of tax incentives provided to disaster-affected households and businesses.

Post-Disaster Tax Incentives

Post-disaster tax incentives refer to various forms of tax relief provided by governments to individuals, businesses, and other entities affected by natural disasters. These incentives are intended to reduce the financial burden arising from disaster-related losses and to facilitate economic recovery in affected areas. In the fiscal policy literature, tax incentives are widely regarded as a form of government intervention that can enhance liquidity, support business continuity, and stimulate economic activity during periods of economic disruption (Kucuk & Ulubasoglu, 2024; McClure, 2012). Post-disaster tax incentives may take various forms, including tax exemptions, tax deductions, tax credits, tax payment deferrals, extensions of tax filing deadlines, waivers of administrative penalties, and exemptions from customs duties and import taxes on humanitarian aid and reconstruction-related materials. The design and implementation of these incentives vary across countries depending on factors such as fiscal capacity, legal frameworks, disaster governance structures, and the administrative capabilities of tax authorities.

Tax incentives play a crucial role in influencing and stimulating various economic activities in many countries, particularly in the aftermath of natural disasters that have occurred in several nations (Afonso et al., 2023; Syamsuddin & Rory, 2021). Through these policies, the government can stimulate investment, encourage innovation, and accelerate the development of specific sectors in the economy (Afonso et al., 2023; Papavassiliou et al., 2025). Therefore, given their significant impact, serious

attention must be given to the design, implementation, and evaluation of the effectiveness of these tax incentives. Tax incentives are fiscal policies in the form of extensions of reporting and payment deadlines, deferral of collection, and reduction of penalties; tax relief for eligible disaster-related losses and documentation; amendments or corrections to tax returns for affected taxpayers; and tax-free assistance to encourage specific behaviors from taxpayers affected by natural disasters (Baturan et al., 2025; Mahendra et al., 2022). Theoretically, tax incentives are viewed as a tool to improve the efficiency of resource allocation and achieve economic development goals.

In the Indonesian context, qualitative studies on the use of tax instruments for disaster mitigation have increasingly focused on innovations in disaster financing policies, including the potential use of tax allowances for charitable donations and zakat under the Income Tax Law to encourage public participation in disaster insurance schemes. This development reflects an academic effort to bridge the gap between formal tax regulations and the practical needs of disaster risk management, although further empirical research is still required to assess its effectiveness. In contrast, the literature directly related to post-disaster tax incentives in the Philippines remains relatively limited (Izumi & Shaw, 2026).

A substantial body of research has examined the role of tax incentives as fiscal policy instruments for promoting economic growth, stimulating investment, supporting business continuity, and mitigating the economic impacts of various crises. Previous studies have primarily focused on the effectiveness of income tax incentives, tax incentives for micro, small, and medium-sized enterprises (MSMEs), environmental tax incentives, and tax relief measures introduced during the COVID-19 pandemic (Ihza et al., 2021; Larasati et al., 2021; Supriyanto, 2024). By contrast, studies on tax incentives related to natural disasters remain relatively limited and are generally confined to single-country policy analyses, evaluations of administrative implementation, or discussions of specific fiscal instruments used to support post-disaster recovery (Ballesteros & Domingo, 2010; Capuno et al., 2024; Kucuk et al., 2021; Xie & Li, 2014).

Although these studies have made important contributions to explaining the benefits of tax incentives for economic recovery, there are still limitations in understanding how differences in fiscal capacity, disaster management, and tax administration systems affect the design and effectiveness of post-disaster tax incentives across countries. Furthermore, research specifically comparing post-disaster tax incentive policies between developing and developed countries remains relatively limited. Yet, differences in economic characteristics, institutional capacity, and regulatory frameworks can lead to variations in both the implementation and the impact of the policies in question. Therefore, this study aims to address this gap by conducting a comparative analysis of post-disaster tax incentives in Indonesia, the Philippines, and the United States to gain a more comprehensive understanding of the practices, challenges, and effectiveness of tax policies in supporting post-disaster economic recovery.

Nevertheless, several studies on public and fiscal economics indicate that Philippine government spending on disaster management increases in proportion to the extent of damage and disaster risk, and this serves as a basis for policymakers to consider more adaptive fiscal mechanisms, including the possibility of providing tax incentives to enhance community resilience and response to natural disasters (Ballesteros & Domingo, 2010; Izumi & Shaw, 2026). In the context of the United States, research on post-disaster tax incentives has largely highlighted the role of tax policy as an instrument of economic recovery. Various forms of relief, such as extensions of tax filing and payment deadlines, waivers of administrative penalties, and tax deductions for disaster-related losses (casualty loss deduction), have proven effective in reducing the economic burden on taxpayers and supporting the recovery of households and businesses (Kucuk et al., 2021; Kucuk & Ulubasoglu, 2024) These findings indicate that tax incentives not only serve as short-term fiscal aid but also as instruments to strengthen resilience and accelerate post-disaster economic recovery.

Overall, unlike previous studies, which have largely focused on the experience of a single country or a specific fiscal instrument, this study offers a comparative cross-country perspective by analyzing how differences in fiscal capacity, institutional governance, and tax administration systems shape the design, implementation, and effectiveness of post-disaster tax incentives in supporting economic recovery. Thus, this study is expected to expand the literature on disaster-responsive fiscal

policy while generating policy lessons relevant to countries with varying levels of disaster vulnerability and fiscal capacity.

RESEARCH METHOD

Research Design

This study employs a comparative qualitative research design to examine post-disaster tax incentive policies in Indonesia, the Philippines, and the United States. A qualitative approach was chosen because this study aims to understand the policy design, implementation mechanisms, and objectives of post-disaster tax incentives within different fiscal and institutional contexts. The analysis focuses on comparing how each country utilizes tax policy as a fiscal instrument to support economic recovery following natural disasters.

Research data were collected through a systematic literature review and document analysis covering academic publications, government regulations, policy reports, and official documents related to disaster-responsive tax policies. To ensure transparency and rigor in the literature selection process, this study adopted the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) framework. Relevant literature was identified through academic databases such as Scopus, Google Scholar, ScienceDirect, and SpringerLink, as well as official publications from government agencies and international organizations such as the OECD, IMF, World Bank, FEMA, the Internal Revenue Service (IRS), and disaster management authorities in Indonesia and the Philippines.

The literature search was conducted using a combination of keywords, including *"post-disaster tax incentives," "tax relief," "disaster recovery," "fiscal policy," "natural disasters," "economic recovery," "Indonesia," "Philippines,"* and *"United States."* The search was limited to publications in English and Indonesian published between 2010 and 2026. The PRISMA process consisted of four stages:

1. Identification. All records retrieved from various databases were collected and compiled. Duplicate records were subsequently removed.
2. Screening. Titles and abstracts were reviewed to assess their relevance to disaster-related tax policies and fiscal responses.
3. Eligibility. Studies that passed the screening stage underwent a full-text review and were evaluated against the predetermined inclusion criteria.
4. Inclusion. Studies that directly addressed post-disaster tax incentives, fiscal responses to natural disasters, or disaster-related tax policies were included in the final analysis.

The inclusion criteria for this study were as follows: (1) studies examining tax incentives, tax relief measures, or fiscal policies related to natural disasters; (2) peer-reviewed journal articles, policy reports, and official government documents; (3) publications available in English or Indonesian; and (4) studies providing empirical or conceptual evidence related to economic recovery, fiscal responses, or disaster management. Conversely, studies that were not related to taxation, post-disaster recovery, or fiscal policy were excluded from the analysis. The selected studies were subsequently analysed using a comparative qualitative approach to identify similarities, differences, and emerging patterns in the design and implementation of post-disaster tax incentives across Indonesia, the Philippines, and the United States.

Data Collection

The data were analysed using a directed qualitative content analysis approach. This method enables researchers to interpret policy documents and relevant literature based on predefined analytical categories derived from fiscal policy theory and the concept of post-disaster tax incentives. The analysis was conducted using five comparative dimensions: (1) types of tax incentives provided, (2) forms of tax administrative relief, (3) target beneficiaries, (4) institutional arrangements, and (5) contributions to economic recovery. The findings from each country were subsequently compared to identify similarities, differences, and policy implications regarding the effectiveness of post-disaster tax incentives. A comparative approach was employed to obtain a deeper understanding of how variations in fiscal capacity, tax administration systems, and institutional arrangements influence the implementation of post-disaster tax incentives. By comparing Indonesia, the Philippines, and the United

States, this study seeks to generate policy lessons and practical recommendations for developing more disaster-responsive tax policies that can support economic recovery and strengthen fiscal resilience.

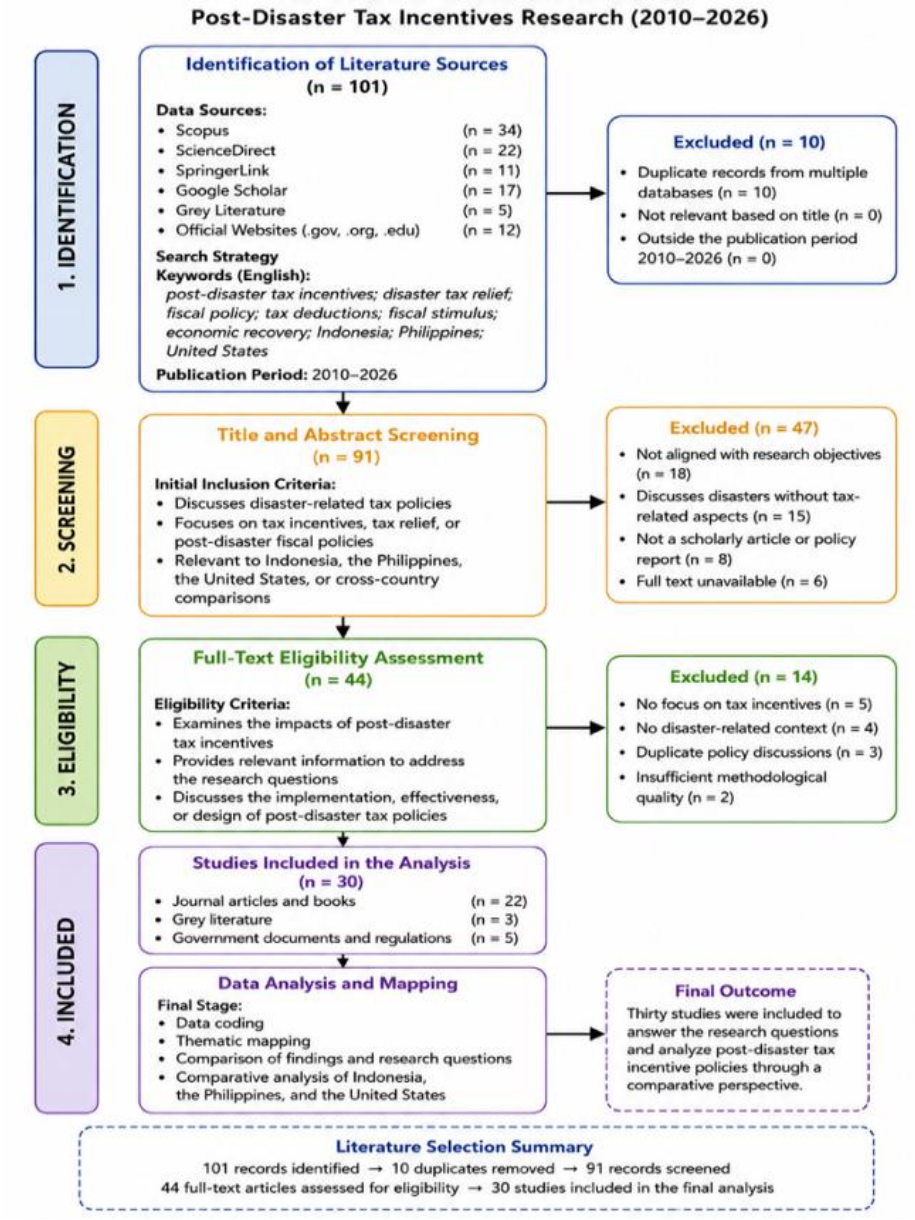


Figure 1. PRISMA Flow Diagram
Source: Various sources, processed by the authors (2026)

Based on the PRISMA framework in Figure 1, the literature search yielded 101 documents from Scopus, ScienceDirect, SpringerLink, Google Scholar, grey literature, and the official websites of governments and international organizations. After removing 10 duplicate documents, 91 documents were selected based on their titles and abstracts. A total of 47 documents were eliminated because they did not meet the study criteria. Subsequently, 44 documents underwent a full-text review, and 14 were excluded for being irrelevant to the study's focus. In the final stage, 30 documents were retained for analysis using a Directed Qualitative Content Analysis approach to compare the implementation of post-disaster tax incentives in Indonesia, the Philippines, and the United States.

RESULTS AND DISCUSSION

Results

Identification of Relevant Documents

The search and screening process identified a number of relevant documents from both scholarly publications and grey literature sources. The results of the document identification process are presented in Table 3.

Table 3. Distribution of Literature Included in the Final Analysis

No	Literature Category	Number of Studies	Percentage (%)
1	Journal Articles and Books	22	73.33
2	Grey Literature	3	10.00
3	Government Documents and Regulations	5	16.67
	Total	**30**	**100.00**

Source: Author's analysis (2026)

Table 4. Literature Selection Process Based on PRISMA

No	PRISMA Stage	Number of Records
1	Records identified through database searching	101
2	Duplicate records removed	10
3	Records screened (title and abstract)	91
4	Records excluded during screening	47
5	Full-text articles assessed for eligibility	44
6	Full-text articles excluded	14
7	Studies included in the final analysis	30

Source: Author's analysis (2026)

Table 5. Distribution of Literature by Search Keywords

No	Keywords	Journal/Books	Grey Literature	Official Websites (.edu, .org, .gov)
1	Tax Incentives Natural Disaster	40	0	4
2	Disaster Tax Relief	12	2	3
3	Fiscal Policy	6	0	3
4	Tax Deductions	4	2	1
5	Fiscal Stimulus	4	1	1
6	Post-Disaster Tax Incentives	8	0	0
	Total	**74**	**5**	**12**

Source: Author's analysis (2026)

Based on the literature selection process (Table 4) using the PRISMA framework, a total of 101 initial documents were identified from academic databases, grey literature, and the official websites of government institutions and related organizations. After removing 10 duplicate documents, 91 documents were selected through a review of titles and abstracts. A total of 47 documents were subsequently excluded because they did not align with the research objectives or lacked relevance to tax incentive policies related to natural disasters. Next, 44 full-text documents were evaluated during the eligibility assessment phase, and 14 studies were excluded for failing to meet the established criteria. In the final stage, 30 studies—comprising 22 journal articles and books, 3 sources of gray literature, and 5 government documents and regulations—were included in the analysis (Table 5). These studies served as the basis for a comparative analysis of post-disaster tax incentive policies in Indonesia, the Philippines, and the United States.

Implementation of Post-Disaster Tax Incentives in Indonesia, the Philippines, and the United States

The implementation of post-disaster tax incentives in Indonesia, the Philippines, and the United States illustrates how fiscal policy is utilized as an instrument to support economic recovery following natural disasters. Despite differences in economic development, fiscal capacity, and institutional arrangements, all three countries employ tax policies to alleviate the economic burden on affected individuals and businesses while accelerating the recovery process.

1. Indonesia

In Indonesia, post-disaster fiscal policy is supported by Law Number 24 of 2007 on Disaster Management, which serves as the primary legal framework for national disaster management. This law transformed the government's approach from emergency response-oriented measures to a comprehensive disaster risk management system encompassing the pre-disaster, emergency response, and post-disaster phases. The implementation of tax incentives and tax relief measures is primarily administered by the Directorate General of Taxes (DGT) through various administrative policies and tax facilities for disaster-affected regions. Indonesia's fiscal and tax policies related to natural disasters generally consist of a combination of disaster management regulations, tax facilities, administrative relief measures, and fiscal support for economic recovery. The Ministry of Finance has issued several regulations to support disaster management, including Minister of Finance Regulation (PMK) No. 28/2025, which governs fiscal mechanisms and the management of disaster funds at the national level.

In addition, Directorate General of Taxes Decree No. KEP-251/PJ/2025 provides temporary tax relief measures for taxpayers affected by natural disasters. More recently, the Directorate General of Taxes introduced disaster-related tax incentives through KEP-251/PJ/2025, which grants tax facilities to taxpayers in the provinces of Aceh, North Sumatra, and West Sumatra affected by floods, landslides, earthquakes, and strong winds. These measures include: (1) the declaration of force majeure status by the Directorate General of Taxes; (2) the waiver of administrative penalties for late submission of monthly tax returns due between 30 November and 31 December 2025; (3) the waiver of penalties for late submission of annual tax returns during the same period; (4) tax payment and remittance relief, including the cancellation of penalties and interest for late tax payments and filings, as well as extensions of filing and payment deadlines until 30 January 2026 for tax obligations due between 25 November and 31 December 2025; and (5) relief related to the issuance of VAT and Luxury Goods Sales Tax (VAT/LGST) invoices for the November–December 2025 tax periods.

In addition to these administrative relief measures, taxpayers receiving disaster-related relief were granted extended deadlines for filing tax returns and making tax payments until 30 January 2026. These policies are geographically targeted and apply only to taxpayers residing or operating in disaster-affected areas officially designated by local governments. Furthermore, Indonesia has established specific tax provisions governing humanitarian donations for major natural disasters. One notable example is Minister of Finance Regulation No. 609/PMK.03/2004 concerning the income tax treatment of humanitarian assistance provided following the 2004 tsunami in Aceh and North Sumatra. Under this regulation, donations made by taxpayers to disaster victims may be recognized as deductible expenses for income tax purposes. Additional incentives include exemptions from customs duties on humanitarian aid and relief goods imported from abroad for disaster response and recovery purposes, provided that the applicable administrative requirements and procedures are fulfilled (Directorate General of Taxes, 2025; Kucuk et al., 2021; Kucuk & Ulubasoglu, 2024).

2. Philippines

The Philippines is one of the countries with the highest levels of disaster risk in the world, frequently experiencing typhoons, floods, earthquakes, and volcanic eruptions (Ballesteros & Domingo, 2010; Harshita Singh, 2025). Consequently, the Philippine government has developed a range of fiscal and tax incentives as part of its national disaster response framework. These measures are administered by the Bureau of Internal Revenue (BIR), the country's tax authority. Republic Act (RA) No. 10121 serves as the primary legal framework for disaster risk reduction and management in the Philippines. The Act was enacted by the Philippine legislature and signed into law by the President, establishing a comprehensive approach to disaster risk management. Meanwhile, the Bureau of Internal Revenue (BIR) is responsible for tax administration and the issuance of technical regulations concerning tax compliance, penalty waivers, administrative tax relief, and other post-disaster tax measures. Several key tax incentives are provided to taxpayers affected by natural disasters in the Philippines.

First, the government grants extensions of deadlines for filing and paying income taxes for both individual and corporate taxpayers, as well as extensions for value-added tax (VAT) and withholding tax reporting requirements. In addition, penalties and surcharges for late filing and payment may be

waived for taxpayers located in disaster-affected areas (House of Representatives of the Philippines, 2025). Second, tax exemptions are available for disaster-related donations. Donations made to disaster victims may be exempt from donor's tax, while corporate donations may be treated as deductible expenses for income tax purposes. Furthermore, imported goods intended for humanitarian assistance may be exempt from VAT, customs duties, and excise taxes (House of Representatives of the Philippines, 2025). Third, the Philippine tax system provides loss relief measures for taxpayers affected by disasters. Asset losses resulting from natural disasters may be recognized as deductible losses for income tax purposes, while damaged assets that are subsequently restored may qualify for adjusted depreciation treatment (House of Representatives of the Philippines, 2025). Fourth, specific incentives are available for micro, small, and medium-sized enterprises (MSMEs) and selected sectors operating in disaster-affected areas. These measures include administrative tax relief, temporary suspension of tax audits, and installment-based tax payment arrangements (Ballesteros & Domingo, 2010; Botman et al., 2008; House of Representatives of the Philippines, 2025).

The characteristics of disaster-related tax incentives in the Philippines are generally responsive and temporary in nature, as they are activated following an official disaster declaration. These measures are geographically targeted toward affected areas and largely depend on policy decisions issued by the central government through the Bureau of Internal Revenue. Moreover, the incentives primarily focus on administrative relief and compliance facilitation rather than direct reductions in tax liabilities. As a country with a high level of disaster exposure, the Philippines has developed a post-disaster tax incentive framework that emphasizes filing and payment extensions, penalty waivers, and tax benefits related to donations and disaster-related losses (Ballesteros & Domingo, 2010; Izumi & Shaw, 2026). These policies demonstrate how taxation can be utilized as a fiscal instrument to mitigate the economic impacts of disasters, particularly for taxpayers located in areas declared under a state of calamity.

3. United States

The implementation of disaster-related tax incentives in the United States is intended to mitigate the financial burden arising from natural disasters. Several key aspects of these incentives include:

1. The Internal Revenue Service (IRS) provides administrative relief in the form of extensions for tax return filing deadlines and deferrals of tax payments due during disaster periods (Internal Revenue Service, 2025). These facilities are available to individual taxpayers, business owners, and corporations that reside or operate in areas officially designated as federal disaster zones by the U.S. government.
2. Individual and corporate taxpayers who suffer property damage or losses as a result of a disaster may claim a casualty loss deduction on their tax returns. Disaster victims are also permitted to report such losses either in the current tax year or by amending the previous year's tax return, allowing them to obtain tax refunds more quickly.
3. The U.S. tax authority, through the IRS, waives fees for replacing tax-related documents that have been lost or damaged as a result of a disaster.
4. In addition to administrative relief and casualty loss deductions, disaster-related tax incentives in the United States include the waiver of penalties on deferred tax payments and special provisions that allow disaster victims to withdraw retirement funds without incurring the usual penalties, subject to certain limitations.

Overall, post-disaster tax incentives in the United States are designed to provide taxpayers with greater flexibility and additional time to recover economically, thereby reducing the immediate burden of tax obligations during the post-disaster recovery period.

Types of Incentives

Based on a review of literature in various countries, including Indonesia, it can be concluded that incentive policies tend to take the form of economic incentives in the form of tax cuts, exemptions, and reductions. There are several types of tax incentives for disaster management, namely (Dwi Utomo, 2024; Mahendra et al., 2022):

a. Fiscal Incentives

   Fiscal incentives in natural disaster management are government policies in the areas of taxation and state revenue that aim to reduce the economic burden on affected communities, maintain business continuity, and accelerate post-disaster recovery. The main focus is on direct financial

relief, not just administrative procedural easing. These types of fiscal incentives can take the form of: (1) temporary tax exemptions on aid or compensation for victims that are not collected during the disaster emergency period, (2) tax reductions or deductions for disaster-related losses such as homes and business assets that can be deducted from taxable income, (3) tax credits for recovery costs, (4) deferral of tax payments without penalties/interest, (5) reduction of tax rates for affected areas, (6) tax exemption on donations where donations to disaster victims are exempt from gift tax and/or are deductible from tax (Mapuasari et al., 2023).

b. Administrative Incentives
Administrative incentives focus on formal obligations and sanctions, such as: (1) extension of reporting deadlines for tax returns, (2) removal of administrative sanctions, (3) simplification of documents by easing the requirements for removal and reporting, (4) accelerated refunds where tax returns will be prioritized, (5) exemption from fees for copies of tax documents (Supriyanti & Indah, 2021).

c. Trade and Logistics Incentives
Trade and logistics incentives in this case generally relate to aid supplies for victims affected by natural disasters. The incentives provided are: (1) exemption from import duties, such as humanitarian aid imports being exempt from import tax, (2) exemption from import VAT, whereby aid supplies for disaster victims are not subject to VAT, (3) exemption from excise duty for certain items needed on an emergency basis.

Table 6 shows that Indonesia, the Philippines, and the United States all utilize tax policy as a fiscal instrument to support post-disaster economic recovery. Common forms of assistance include extensions of tax filing and payment deadlines, waivers of administrative penalties, and various tax relief measures aimed at reducing the financial burden on affected individuals and businesses. These policies reflect the stabilization function of fiscal policy by helping taxpayers maintain liquidity and continue economic activities during the recovery period.

Despite these similarities, important differences exist in the design and implementation of post-disaster tax incentives. Indonesia adopts a relatively centralized approach through the Ministry of Finance and the Directorate General of Taxes, while the Philippines relies on coordination between the Bureau of Internal Revenue and Local Government Units (LGUs). In contrast, the United States implements disaster-related tax relief through a well-established federal framework involving the Internal Revenue Service (IRS) and other federal agencies. The United States also provides a broader range of tax benefits, including casualty loss deductions and accelerated tax refunds, reflecting its stronger fiscal capacity.

The findings suggest that the effectiveness of post-disaster tax incentives is influenced not only by fiscal resources but also by institutional capacity and administrative arrangements. Countries with clear legal frameworks and effective coordination mechanisms are generally better able to deliver timely tax relief. Therefore, strengthening institutional coordination and administrative efficiency is essential for improving the effectiveness of post-disaster tax policies and supporting long-term economic recovery.

Criticism of Natural Disaster Tax Incentives

Several studies show that providing tax incentives to taxpayers affected by natural disasters can ease their burden, but there are several criticisms of these incentives, namely:

a. Inequality of Benefits
Some critics argue that disaster tax relief is not always targeted appropriately, as this assistance is only provided if the area is officially declared a disaster zone or if taxpayers have taxable income. Low-income groups or those who do not owe large amounts of tax often do not feel the benefits (Dari-Mattiacci & Faure, 2015; Legal Aid Disaster Resource Center, 2022). This raises the question of whether tax relief really helps those who need it most.

Table 6. Comparative Analysis of Post-Disaster Tax Incentives in Indonesia, the Philippines, and the United States

No	Comparative Dimension	Indonesia	Philippines	United States
1	Types of Tax Incentives	Tax payment deferrals, waiver of administrative penalties, deductibility of disaster-related donations, customs duty exemptions on humanitarian aid.	Tax payment extensions, donor's tax exemptions, deductible disaster-related donations, loss relief provisions, tax incentives for MSMEs.	Tax filing and payment extensions, casualty loss deductions, accelerated tax refunds, penalty waivers, disaster-related retirement fund relief.
2	Administrative Tax Relief	Extension of filing deadlines, waiver of penalties and interest, simplified tax administration procedures in disaster-affected areas.	Filing and payment extensions, penalty waivers, temporary suspension of tax audits, instalment payment arrangements.	Automatic filing and payment extensions, waiver of penalties, free replacement of tax documents lost due to disasters.
3	Target Beneficiaries	Individual taxpayers, businesses, humanitarian organizations, and taxpayers located in officially declared disaster areas.	Individuals, corporations, MSMEs, charitable organizations, and taxpayers located in areas under a State of Calamity.	Individual taxpayers, businesses, disaster victims, and taxpayers residing in federally declared disaster areas.
4	Institutional Arrangements	Centralized system led by the Ministry of Finance and the Directorate General of Taxes (DGT).	Shared responsibility between the Bureau of Internal Revenue (BIR), central government agencies, and Local Government Units (LGUs).	Federal system involving the IRS, FEMA, state governments, and other federal agencies.
5	Contribution to Economic Recovery	Reduces compliance burdens, supports business continuity, facilitates humanitarian assistance, and strengthens fiscal resilience.	Supports local recovery efforts, reduces taxpayer burdens, strengthens disaster resilience, and promotes business continuity.	Enhances liquidity, accelerates recovery, supports household and business resilience, and facilitates reconstruction efforts.
6	Main Challenges	Administrative complexity, uneven access to incentives, and dependence on central government coordination.	Variations in implementation capacity across local governments and fiscal constraints at the local level.	High fiscal costs, intergovernmental coordination challenges, and increasing disaster frequency associated with climate change.

Source: Author's analysis (2026)

b. Fiscal Effectiveness
Some tax experts argue that tax assistance or relief sometimes only delays tax payments rather than providing direct cash. As a result, this assistance may not be sufficient to help disaster-affected businesses or households recover quickly, so its effect on economic recovery may be smaller than expected.

c. Administrative Implementation
Research shows that even though tax incentives or relief exist, their implementation is often ineffective. Many taxpayers find it difficult to access relief because the information and socialization are unclear, or the procedures are too complicated.

d. Fiscal Integration
Fiscal policy reports show that tax incentives are only a small part of the government's response to disasters (McClure, 2012). If tax assistance is not planned as part of a broader and more sustainable fiscal strategy, the government may find it difficult to support comprehensive economic recovery, making tax assistance alone ineffective (Hosono et al., 2023).

e. Taxpayer Experience
Surveys and news reports in the US show that many taxpayers affected by disasters find the tax relief or assistance process difficult and confusing (Internal Revenue Service, 2025). They experience long wait times and complicated procedures, so tax relief does not always alleviate the financial burden and administrative stress as expected.

Strategies for Implementing Natural Disaster Incentives

The government can implement several strategies to increase and optimize the impact of tax incentives for taxpayers, by:

a. Establishing Criteria for Disaster Areas and Status
The government, in this case through the Director General of Taxes in Indonesia, BIR/DOF in the Philippines, and IRS in the United States, as parties that play a very important role in providing incentive policies, especially natural disaster incentives, can officially designate a region or area as a disaster-affected area so that tax incentives can be provided in a targeted and controlled manner (Internal Revenue Service, 2025; Directorate General of Taxes, 2025; Thronton, 2025) Force majeure status is used to provide relief to businesses affected by disasters, such as deferral of tax payments or exemption from penalties for delays caused by such conditions.

b. Tax Obligation Waivers and Deferrals
Based on several implementations in various countries, including Indonesia, the government grants administrative penalty exemptions and defers tax payment and reporting deadlines during disaster periods (Dwi Utomo, 2024; Mahendra et al., 2022). This policy aims to help maintain the cash flow of business actors whose operational activities have been disrupted by natural disasters (Mahendra et al., 2022).

c. Development of Tax Incentives for Donations and Community Participation
Using fiscal facilities to encourage donations from the community or companies for disaster management activities, for example by making them a deduction from gross income in income tax calculations (Safitra, 2022).

d. Simplification of Procedures and Legal Certainty
Simplify the incentive claim mechanism, for example through online/automated services, so that taxpayers can access facilities quickly and easily. Legal certainty is also key to increasing business confidence in fiscal policy (Rahayu et al., 2025).

e. Policy Evaluation and Monitoring
The government can monitor the use of incentives to evaluate their effectiveness in supporting economic recovery and assess the need for policy adjustments over time. Conducting periodic evaluations is important to ensure that incentives have a positive long-term impact (Afonso et al., 2023; Xie & Li, 2014).

CONCLUSION

This study examined the implementation of post-disaster tax incentives in Indonesia, the Philippines, and the United States through a comparative analysis of fiscal policies, institutional arrangements, and tax administration systems. The findings indicate that all three countries utilize tax policy as a fiscal instrument to support post-disaster economic recovery by reducing the financial burden on affected individuals and businesses. However, notable differences exist in policy design and implementation. Indonesia relies on a more centralized fiscal approach, the Philippines emphasizes the role of local governments within a decentralized framework, while the United States has developed a more comprehensive and institutionalized system supported by stronger fiscal capacity and advanced tax administration. The study further reveals that the effectiveness of post-disaster tax incentives depends not only on the types of incentives provided but also on institutional capacity, administrative efficiency, policy coordination, and the availability of fiscal resources. Therefore, post-disaster tax incentives

should be viewed not merely as short-term tax relief measures but also as strategic fiscal instruments that can enhance economic resilience and accelerate recovery following natural disasters.

From a policy perspective, developing countries can improve the effectiveness of post-disaster tax incentives by strengthening interagency coordination, expanding taxpayer access to disaster-related tax facilities, improving tax administration systems, and integrating tax incentives into broader disaster risk financing and recovery strategies. The experience of the United States, particularly in terms of administrative flexibility and rapid tax relief mechanisms, provides valuable lessons for Indonesia and the Philippines in developing more responsive disaster-related fiscal policies.

This study has several limitations, as it relies on a literature review approach that depends primarily on secondary data and available policy documents. Therefore, future research is encouraged to utilize primary data through interviews, surveys, or case studies involving policymakers, tax authorities, business actors, and disaster-affected communities to gain a deeper understanding of the implementation and effectiveness of post-disaster tax incentives. In addition, future studies may adopt quantitative approaches to examine the impact of tax incentives on various economic recovery indicators, such as business sustainability, investment, employment generation, and regional economic growth. Expanding the scope of analysis to include additional countries and different types of disasters would also contribute to a more comprehensive understanding of best practices in disaster-responsive tax policies and fiscal resilience. Furthermore, a mixed-methods approach may be considered to integrate policy analysis with stronger empirical evidence.

List of Abbreviations

PRISMA – Preferred Reporting Items for Systematic Reviews and Meta-Analyses
WRI – World Risk Index
SMSEs – Small and Medium-Sized Enterprises
MSMSEs – Micro, Small, and Medium-Sized Enterprises
OECD – Organisation for Economic Co-operation and Development
IMF – International Monetary Fund
FEMA – Federal Emergency Management Agency
DGT – Directorate General of Taxes
PMK – Minister of Finance Regulation
VAT – Value-Added Tax
VAT/LGST – VAT and Luxury Goods Sales Tax
BIR – Bureau of Internal Revenue
RA – Republic Act
IRS – Internal Revenue Service
LGUs – Local Government Units
DGT – Directorate General of Taxes

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Authors' Contribution

KDM contributed to developing the conceptual framework related to tax policy in response to natural disasters by conducting a comparative analysis of two countries, namely the Philippines and the United States; designing the methodological framework to identify tax policies for natural disasters; collecting, processing, and analyzing data on tax policies in Indonesia, the Philippines, and the United States; and carrying out the overall manuscript writing process. ADI contributed to collecting, processing, and analyzing data related to tax policies for natural disasters in Indonesia, the Philippines, and the United States and their impact on economic recovery in Indonesia; contributed to writing the results and discussion; as well as language editing, proofreading, and reference compilation.

Conflict of Interest

The authors declare no competing interests.

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Availability of Data and Materials

The data and materials used in this study consist of publicly available academic articles, government regulations, institutional reports, and official publications from relevant authorities in Indonesia, the Philippines, and the United States published between 2004 and 2025. These documents were obtained from open-access journal databases, official government websites (.go, .gov, .edu), and institutional repositories. The coded materials and document analysis results generated during the study are available from the corresponding author upon reasonable request.

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