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Multi-Level Governance for The Integration of Social Sector Interventions and Disaster Management: A Case Study of Yogyakarta

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Abstract

Poor communities in both urban and rural areas shoulder a double burden of poverty and heightened exposure to natural hazards. Disaster interventions must therefore address both prevention and mitigation simultaneously. Integrating social sector initiatives, especially poverty reduction measures, with disaster management is essential. Social protection (SP) is a targeted poverty reduction tool that lessens economic and social risks for vulnerable households. SP aims to protect, prevent, and promote livelihoods by offering a platform for comprehensive strategies tackling disaster and climate-related impacts. This study examines whether Indonesia's national and local governance structures facilitate such integration, with a focus on national policies and a case study of Yogyakarta Province. This research employed a qualitative design, incorporating content analysis, literature review, document analysis, and focus group discussions. The results showed that the government has introduced Adaptive Social Protection (ASP) to align social protection, disaster management, and climate adaptation at the national level. At the local level, Yogyakarta has advanced further with strong civil society engagement through the Disaster Risk Reduction Forum, also known as the Forum PRB. Integrating disaster management with social initiatives through the four pillars of ASP (institution, program, data, and financing) is still in its infancy nationally. By contrast, at the local level, Yogyakarta has made significant progress, with advanced collaboration among actors and social sectors, primarily focusing on education, health, and some aspects of social protection.

1.0 INTRODUCTION

Natural disasters often strip poor households of the income they need to survive. Traditional farmers, fishers, and informal sector workers in developing countries are highly vulnerable to climate-related events (Brouwer et al., 2007; Fitrinitia & Matsuyuki, 2022; Mahanta & Das, 2017). To build resilience, climate-dependent households must diversify and transform their livelihoods (Uddin et al., 2021). This long-term shift demands coordinated action across sectors; internal initiative alone is insufficient and must be reinforced by external support (Ahammad, 2011; Hamza et al., 2012; Wamsler & Brink, 2014).

External intervention, such as disaster management and climate-adaptive action, often leaves gaps that limit the ability of poor and vulnerable groups to mitigate the adverse impacts of natural hazards, including floods, eruptions, and earthquakes. The social aspects, including the health and education sectors, should be integrated into a comprehensive strategy to enhance the quality of life for these populations. Social protection (SP) offers a practical entry point for this integration (Drolet, 2014; Sarker et al., 2020; Weldegebriel & Amphune, 2017; Zhang et al., 2012). By providing access to critical resources, SP helps vulnerable groups manage and mitigate the impacts of disasters (Ulrichs et al., 2019). SP can also facilitate stronger linkages and improvements across sectors, including education and health services.

The term "social protection" varies by context. The term originates from the economic context, which is defined as a social safety net. This program provides support to vulnerable populations, particularly those with limited financial resources, to help them overcome economic hardships. Then, in a social context, the term refers to supporting groups considered deserving of assistance (such as widows, orphans, and persons with disabilities. In a political context, social protection is viewed as a comprehensive effort to promote equality, empowerment, and the fulfillment of economic, social, and cultural rights, rather than merely offering targeted and temporary cash or consumption-based aid. (Devereux & Sabates-Wheeler, 2004). It refers to instruments provided by both public and private sectors to reduce and anticipate the negative impacts of economic pressures or disasters on individuals and households. (Brunori & O'Reilly, 2010). This conceptual flexibility makes SP well-suited to addressing disasters and climate-related events.

The application of SP to support disaster and climate-related events requires adaptation from its conventional form, as SP was not originally designed to address the impacts of disasters (Sagala et al., 2014). Cross-cutting and collaborative approaches play a significant role in developing adaptive and resilient strategies for disaster risk reduction. The government, private sector, and civil society are actively involved in collaborative and integrative cooperative efforts across various sectors. This initiative is being implemented at the national level and extends to the meso and micro levels, involving collaboration among diverse stakeholders across multiple scales.

The Government of Indonesia (GoI) has begun to make SP more adaptive and flexible in response to crises such as natural disasters and pandemics. The National Development and Strategic Plan of the Ministry of Social Affairs outlines a new roadmap, namely ASP (Perpres. RI. No. 18, 2019; Renstra Kemensos. PDF, n.d.). This development represents a strategic opportunity to integrate social sector programs supporting disaster risk mitigation and poverty alleviation. GoI is preparing a roadmap called Adaptive Social Protection to develop this breakthrough. However, as this framework is still in its early stages, it requires further refinement to define its components, determine its institutional positioning, and establish a comprehensive design at both national and local levels.

Yogyakarta has become a leading region in managing disasters, particularly geological and hydrometeorological hazards. Compared to other major Indonesian cities such as Jakarta, Bandung, and Surabaya, Yogyakarta faces a significantly higher disaster risk. While Jakarta contends with environmental issues like flooding, water and air pollution, and waste management, Bandung and Surabaya face similar challenges, and their overall disaster risk is lower. In contrast, Yogyakarta frequently experiences earthquakes triggered by tectonic activity from Mount Merapi, cold lava floods, and volcanic ashfall from pyroclastic flows. The province also struggles with environmental issues such as waste accumulation, water pollution, and declining groundwater levels. These conditions demand a more integrated and responsive disaster management system that involves the government, communities, and the private sector. Given the variety of disasters faced by Yogyakarta and the active involvement of civil society in local policymaking, this province provides a relevant context to examine how the integration of social protection and disaster management is implemented

across sectors and levels of government. Yogyakarta can serve as a role model for other local areas, including provinces and cities, in enhancing disaster preparedness and response.

Thus, this study aims to explore the readiness of Indonesia's multilevel governance to facilitate the integration of disaster management and social sectors through cross-cutting strategies and inter-sectoral collaboration. It seeks to address the following research questions: first, how has the integration between disaster management and social initiatives been implemented at the national level in Indonesia? Second, how can local strategies mainstream integration and cross-cutting approaches between disaster management and social sector initiatives? And third, what instruments can be employed to align integration efforts between national and local levels? The analysis begins at the national level, examining the integration mechanisms, and extends to the local level, where civil society has developed cross-sectoral programs targeting grassroots communities, including actors mapping analysis, especially at the provincial level. Yogyakarta, recognized for its advanced governance in disaster risk reduction, is used as a case study to capture local-level initiatives and innovations.

1.1 Indonesia and the Cases of Disaster

As an archipelago nation on the Pacific Ring of Fire, Indonesia is prone to natural disasters. Based on Figure 1, the number of disaster events in Indonesia over the past 20 years has increased significantly from 1985 to 2024. In the last 10 years, the most frequent disasters in Indonesia have been related to meteorology (global warming, droughts, tornadoes, and others), with 4,903 events occurring between 2015 and 2019. Geological disasters, such as earthquakes, landslides, and volcanic eruptions, occurred most frequently from 2020 to 2024, totaling 4,454 events (BNPB, 2024). Similarly, hydrological disasters (floods, tsunamis, coastal erosion, and others) were most frequent from 2020 to 2024, with a total of 4,210 events (BNPB, 2024). Within various typologies of hazards, Indonesia is indicated as a "laboratory" for natural disaster events. Therefore, the society and governance of development need to consider the risk potential.

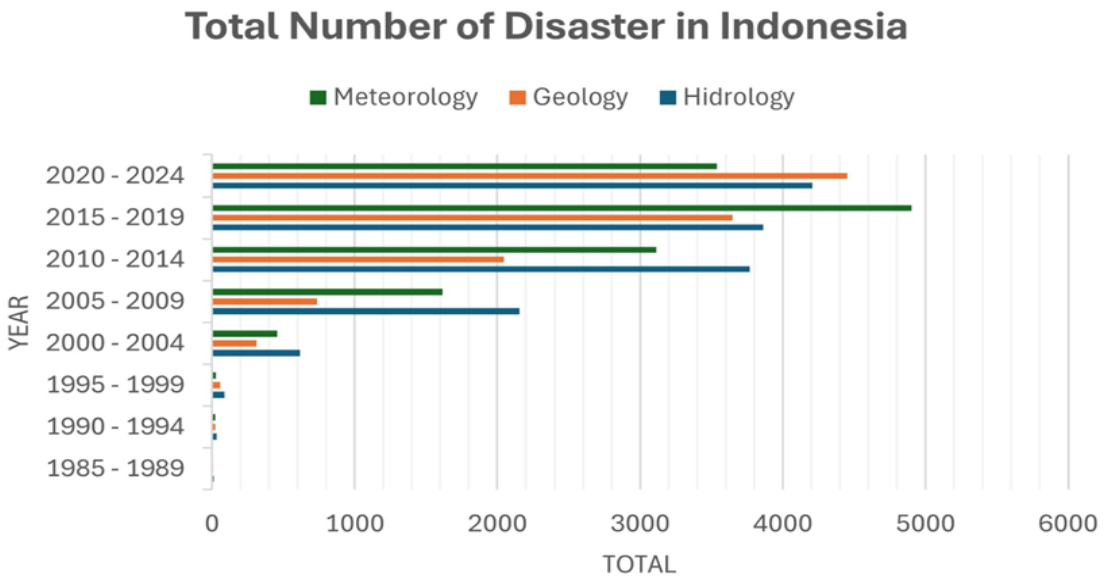

Figure 1. Number of Disasters in Indonesia
Source: DIBI, BNPB2024

1.2 Compelling Reason for the Need for Integration

Rising disaster risk is expected to deepen poverty, and existing inequalities determine how different groups experience and recover from shocks (Kuriakose et al., 2013; Mahanta & Das, 2017). Immediate destruction, displacement, and costly avoidance strategies all heighten the chance of livelihood loss (Dang et al., 2017; Masozera et al., 2007; ODI, 2013). Consequently, poverty and disasters reinforce one another, making individuals and communities more vulnerable and less resilient. Empirical evidence highlights the link between poverty and disasters, including the impacts of climate change. For instance, in Senegal, households affected by natural disasters were 25% more likely to fall into poverty between 2006 and 2011(Dang et al.,

2017). Similarly, during Hurricane Katrina, low-income residents were disproportionately affected due to limited access to evacuation, demonstrating a positive correlation between poverty and disaster victimization (Masozera et al., 2007). In Indonesia, low-income households engaged in family farm businesses, particularly rice farming, are most vulnerable to weather extremes (Fitrinitia & Matsuyuki, 2023; Skoufias, 2003).

Addressing this issue requires holistic solutions considering poverty and disaster vulnerability, as these challenges are deeply interconnected and cannot be effectively resolved in isolation. Disaster management, including climate adaptive action, has close connections to social development because they play similar roles in improving well-being and minimizing the impact on livelihood (Aitsi-Selmi et al., 2016; Corr, 1995; Fitrinitia & Matsuyuki, 2023; Kundo et al., 2023; Rao & Enelamah, 2024).

A clear cause-and-effect relationship exists between disaster impact, poverty, and intervention. Countries have implemented multi-sectoral strategies to address these interconnected issues and adapt to environmental changes (Hamin & Gurran, 2009; Rapeli et al., 2018). Social aspects play a significant role in integrating disaster mitigation issues into daily life. Similar characteristics among the goals, target groups, and tools of social development intervention encourage sharing opportunities and blending mechanisms to moderate vulnerability in society (Béné et al., 2018; World Bank, 2013). Therefore, the integration mechanism between disaster management and social intervention is essential, especially in reducing poverty and increasing well-being.

Cross-cutting support enables vulnerable groups to enhance their adaptive capacity and resilience in the face of multiple and layered risks. Many interventions currently operate in silos and fail to overcome the institutional constraints that hinder effective collaboration (Browne, 2014; Jones et al., 2010). These failures often stem from overlooking commonalities, ignoring overlapping agendas, and lacking effective communication, leading to poor coordination, fragmented management, and insufficient funding mechanisms designed for integration (Béné et al., 2012; Davies et al., 2013). Therefore, changes and systematic improvement are essential to foster greater synergy among programs and institutions. This integration is also crucial for mitigating the detrimental effects of poverty and the consequences of disasters, including climate-related events.

Moreover, the relationship between poverty and disaster vulnerability extends beyond social aspects to encompass the health and education sectors as well. Having increased education, health, and social status makes people more capable of coping, adapting, and transforming to the disaster impact (Jones et al., 2010; Thomas Bowen, Carlo del Ninno, Colin Andrews, Sarah Coll-Black, Ugo Gentilini, Kelly Johnson, Yasuhiro Kawasoe, Adea Kryeziu, Barry Maher, 2014). For example, education can enhance society's awareness of extreme climate-related events and change their perception, while effective disaster risk management should also incorporate health preparedness and response actions as a countermeasure to the adverse impacts (Lee 2015; Oktari et al. 2022).

Despite numerous previous studies focusing on policy implementation, limited research still explores and evaluates the integration effort in specific locations, particularly policy implementation across central and local scales. Most existing literature focuses on program evaluation, conceptual frameworks, or potential approaches for integration (Aleksandrova, 2020; Kuriakose et al., 2022; O'Sullivan et al., 2013; Vathana et al., 2013), often failing to address the issue of governance synchronization across multiple administrative scales, which is a crucial factor for successful implementation.

2.0 METHODS

This research employed a qualitative approach for data collection and analysis. The qualitative approach was a case study method involving data collection techniques such as desk reviews of previous research and focus group discussions (Creswell & Guetterman, 2019). The subsequent step involved interpreting the data and converting it into valuable information through content analysis. A case study was chosen due to its ability to evaluate activities or programs by developing an in-depth analysis of a case (Creswell, 1997). The specific case study focused on the processes within the GoI and the governance structures at the local or provincial level, specifically the case study of the Yogyakarta Province.

The data collection process consisted of several stages. It began with a desk review of previous literature, including academic studies and government planning and evaluation documents. A series of focused

discussions with relevant stakeholders followed this. The objective of the literature review was to identify and categorize previous studies at both global and local levels that explore the integration of disaster management with social aspects, such as health, education, and other related sectors. The criteria for literature selection included: (1) Global-scale literature that contributes to an understanding of integration concepts as discussed in academic journals and accessible through online search engines such as Google Scholar, ScienceDirect, and other journal databases; and (2) National or domestic literature consisting of existing regulations at the national and provincial levels in Indonesia, institutional reports, and recent news articles related to disaster management at both national and provincial levels, with a time range of publications from 2000 to 2024.

To enrich the data and support the triangulation process, a Focus Group Discussion (FGD) was conducted on July 13, 2023, in collaboration with the Yogyakarta Disaster Risk Reduction Forum (Forum PRB). The agenda was held at the Muhammadiyah Centre in Yogyakarta and was attended by 25 representatives from various disaster-related organizations, including the Regional Disaster Management Agency (BPBD) and the Regional Development Planning Board (Bappeda).

Participants were selected based on their institutional membership in the DRR Forum, representing multiple sectors, including: (1) education involving universities, training institutions, and the Yogyakarta Education Office; (2) health involving public and private hospitals, and the Yogyakarta Health Office; and (3) social protection involving civil society organizations (CSOs) working with vulnerable communities, including persons with disabilities, the national social security agency (BPJS), and the Social Affairs Office. The FGD aimed to explore several essential questions: (1) disaster mitigation or climate change adaptation programs implemented in the past three years; (2) areas of program overlap with other sectors; (3) the integration process across horizontal (inter-agency) and vertical (multi-level government) levels; (4) existing evaluation frameworks; (5) relevant policy frameworks; and (6) challenges in integrating disaster mitigation efforts with other social sectors, including health, education, and social protection.

The data processing and analysis phase involves both content analysis and stakeholder analysis. The collected data sources were processed through sorting and categorization using manual coding techniques. Content analysis was applied to the collected documents, such as journal articles, regulations, institutional profiles, and online news, as well as the results of focus group discussions. Data processing was essential for reducing and refining information, particularly from the content analysis of documents obtained from the central government. A total of 23 documents, including laws, regulations, and program evaluation reports, were reviewed. The information derived from these documents was then reduced to focus only on data relevant to the research questions. Data reduction was conducted by simplifying, classifying, and eliminating irrelevant information. Once the documents were collected, a categorization process was based on predefined topics, including: (a) disaster management, (b) climate change adaptation, (c) poverty alleviation, (d) the integration of disaster management and poverty alleviation, (e) the integration of climate change adaptation and poverty alleviation, and (f) the integration of disaster management, climate change adaptation, and poverty alleviation. Within each topic, sub-categories were identified: policies, plans, programs, and challenges. Content analysis categorization was also applied to the literature review, in which factors related to integration were mapped.

On the other hand, data from the Focus Group Discussion (FGD) with the Forum PRB of Yogyakarta were transcribed and categorized to address four key aspects: (1) the characteristics of the Yogyakarta DRR Forum, (2) mapping of horizontal and vertical actors involved in disaster management in Yogyakarta, (3) potential areas for integration within the local Yogyakarta context, and (4) challenges encountered in achieving integration in the local context. For the local-level analysis, Yogyakarta was selected as the case study area. This was further supported by stakeholder analysis conducted in two stages: first, identifying stakeholder groups; and second, assessing their roles and the depth of their influence based on power and leadership (Putra et al., 2017a; Schmeer, 2000).

Following data reduction, the next step involved data presentation to generalize and derive patterns or models from the summarized information. The data were presented in tables, figures, or matrices to visually illustrate how integration processes emerged at the national and local (provincial) levels, particularly in Yogyakarta.

The structure of this study was organized into two levels of analysis. A) At the national level, by using content analysis of available documents, the analysis focused on identifying policies, plans, and programs across three main approaches: disaster management, climate change adaptation, and social protection. This

was followed by examining integration opportunities based on the concepts promoted by the central government. B) At the local (provincial) level, analysis from FGDs and content analysis is used. The case of Yogyakarta was applied to explore a local governance initiative known as the Disaster Risk Reduction Forum (The Forum PRB). The analysis was to identify the potential for linking this local initiative with governance mechanisms at the national level.

3.0 RESULTS

3.1 Synergizing Policies, Plans, and Programs at the National Level

The countermeasures activities among social sectors, such as poverty and disaster impact, including the climate-related events, are held by the government and the non-government sector. Various multi-stakeholder and interdisciplinary collaborations have emerged to build a resilient and sustainable society. Several significant efforts led by the government and non-government organizations are summarized in **Table 1.** The table distinguishes between the policies, plans, and strategies developed by the government and programs led by government and non-government agencies.

Table 1. Identification of Policy, Planning, and Program on Social Protection, Climate Change Adaptation, and Disaster Risk Reduction at the National Level

	POLICY	PLANNING	PROGRAM
Social Protection	• **Law (UU) No 40/2004, National Social Security System**: • Regulations regarding universal social protection and security for every citizen • **Law (UU) No 13/2011, Handling the Poor:** • Social security and protection for the poor • **Law (UU) No 24/2011, Social Security Administrator and Regulation Of The President of The Republic of Indonesia No 46/2015, Ministry of Social Affairs:** • Regulations regarding the implementing agency for social protection	• **Regulation of the President of the Republic of Indonesia No. 18/2020, National medium-term development plan 2020-2024:** • A **comprehensive social protection scheme** to increase social assistance programs for the poor and vulnerable • Directing **Adaptive Social Protection** that considers climate change and natural disasters as part of the consideration of social protection	• **Family Hope Program (PKH) :** • **National Conditional cash transfer program** to poor households, also with a **family development session,** which has a regional assistant • **Unified Database (BDT)**: • A **single database** for all national Social Assistance Programs. A registry that categorized low-income families
Climate Change Adaptation	• **Law (UU) No 32/2009, Environment Protection and Management:** • An adaptation and mitigation to climate change as part of environmental issues • **Law (UU) No. 16/2016, Authorization of the Paris Agreement** • The ratification of the Paris Treaty in the Indonesian regulation and program • **Regulation of The President of The Republic of Indonesia No. 16/2015,**	• **Climate Resilience Development (PBI):** • National action **plans for adaptation are needed** because of the impact of climate change on the marine and coastal Sectors, water, agriculture, and health. which is coordinated and integrated with all stakeholders • **Regulation of The President of The**	• **The Program Kampung Iklim (PROKLIM):** • Participatory action led in the local community regarding climate hazards and their impact on climate-related disease control, handling sea level rise, increasing vegetation cover, and others • **Climate change adaptation and resilience (APIK)**:

	POLICY	PLANNING	PROGRAM
	Ministry of Environment and Forestry: • Managing the institution that operates climate change adaptation and mitigation activities includes the guidelines for CCA activities	**Republic of Indonesia No. 18/2020** • **National medium-term development plan 2020-2024:** • Planning to protect **food security and public health** against climate change	• Assist the GoI in integrating the CCA plan in RAN API and DRR locally and nationally.
Disaster Risk Reduction	• **Regulation of The President of The Republic of Indonesia No. 24/2007, Disaster Management:** • The highest mandate as the principal for disaster management in Indonesia. The government is responsible for **disaster risk reduction, disaster protection, recovery from disaster impacts, and related budgets** • **Regulation of The President of The Republic of Indonesia No 8/2008, National Disaster Management Authority:** • Following decentralization, the National Disaster Management agencies up **to the district level**	• **Regulation of the President of the Republic of Indonesia No. 18/2020, National medium-term development plan 2020-2024:** • Strengthening **Disaster Data and Information** • Improvement of **Mitigation, Management, and Infrastructure** • Integration of **policies and spatial planning** based on DRR • Strengthening the integrated **multi-threat disaster mitigation system**, • **National Plan for Disaster Management 2015-2019:** • Guidelines for stakeholders to have an integrated and comprehensive plan	• **Disaster Data and Information Management**: • One single entry of data about disaster information • **The Kampung Siaga Bencana (KSB)**: • Community-based disaster management and strengthening the social interaction of community members • **The TAGANA:** • **Social worker** related to disaster management • **Safer Communities through Disaster Risk Reduction in Development (SC-DRR) by UNDP:** • **Assisting the Government in linking** the National Disaster Management Plan with the provincial-level

As mandated by the Constitution, the GoI is responsible for ensuring the welfare of all citizens. The Ministry of Social Affairs must protect unconditional and conditional mechanisms for poor groups. Table 1 illustrates that social protection has been an integral part of national policy since 2004. On the other hand, significant progress has been made regarding strategies and planning. In 2020, the GoI introduced a more comprehensive approach named Adaptive Social Protection. Meanwhile, the programs still in place are *the* Family Hope Program, *also known as Program Keluarga Harapan* (PKH), a national safety net scheme. This program complements the Unified Database Program (BDT), an integrated data source for social assistance beneficiaries. This BDT program is managed by the Ministry of Social Affairs and is coordinated with other government institutions, including the National Statistics, BNPB, and the Ministry of Internal Affairs.

The GoI has also established mechanisms to manage disaster impacts, from preparedness to recovery, as part of the broader disaster risk reduction efforts. BNPB, established in 2008, leads this effort and outlines its mandate in the National Medium-Term Development Plan (RPJMN), emphasizing mitigation and cross-sectoral coordination. Disaster-risk-reduction programmes are implemented by BNPB and the Ministry of Social Affairs, with special attention to strengthening the national disaster database. Community-based

initiatives include Disaster Preparedness Volunteers (Taruna Siaga Bencana, TAGANA) and Disaster-Resilient Villages (Kampung Siaga Bencana, KSB). The United Nations Development Programme (UNDP) supports these efforts through pilot projects in six provinces.

Climate change adaptation as an adaptive action is the latest approach among the three others. GoI accommodates the transformation purpose of national mandates regarding environmental protection and management. Also, there is a policy that aligns with the Paris Agreement. It manifested through the medium-term development plan/strategy and Action Plan for Climate Change Adaptation, or RAN API, as a National action plan for adaptation. It is an effort to mainstream climate issues in national development. Moreover, climate change adaptation programs have a wide range of coverage. It stems from a participatory action by the local community, known as Program Kampung Iklim, and has evolved into efforts by international donors to assist national and local governments in integrating climate issues into their development plans.

3.2 Stakeholder Mapping of Local Level through Disaster Risk Reduction Forum

Yogyakarta, recognized as a disaster-resilient region, has established the PRB Yogyakarta Forum. This forum comprises various stakeholders representing different layers of society.

Based on focus group discussions and literature studies, actors in the Forum PRB are divided into five categories: government, civil society, academia, community organizations, and the private sector. Civil society plays an essential role in disaster management in Yogyakarta by mobilizing community resources, advocating for vulnerable populations, and ensuring transparency and accountability. Frequently serving as first responders during disasters, these organizations deeply understand local contexts and needs. Non-governmental organizations (NGOs) in Yogyakarta majorly contribute to advocating and policy-making within the Forum PRB. Among them, the Yakkum Emergency Unit and Sheep Indonesia stand out for their active involvement in disaster response, demonstrating significant contributions to effective disaster risk management. Local governments play a pivotal role in coordinating disaster response efforts, formulating policies, allocating resources, and providing essential services during emergencies. Their authority to implement and enforce disaster management strategies renders their role indispensable for ensuring an organized and effective response to disasters. The Regional Disaster Management Agency (BPBD) serves as the leading institution in disaster management, acting as the focal point for response efforts, while the Regional Development Planning Agency (Bappeda) is responsible for planning, funding, and inter-sectoral coordination within the Forum PRB. Additionally, regional agencies not directly focused on disaster management, such as the Health Office, Education Office, and Social Affairs Office, are also actively involved in the Forum PRB, highlighting a comprehensive, multi-sectoral approach to disaster management.

Academic institutions contribute significantly to disaster management through research, technological advancements, and specialized expertise. They provide insights into best practices and innovative solutions and offer education and training to enhance local capacity. The involvement of four major universities in Yogyakarta, namely Gadjah Mada University (UGM), Islamic University of Indonesia (UII), Veteran National Development University (UPN Veteran), and Ahmad Dahlan University, in the Forum PRB demonstrated the academic community's commitment to effective disaster management practices. Academics are also appointed as coordinators for capacity-building initiatives in disaster management, emphasizing their vital role in this field. Since the advent of decentralization, the private sector has emerged as a key stakeholder in disaster management. Corporate social responsibility (CSR) initiatives have provided companies with a platform to engage in disaster response efforts. The Forum PRB facilitates the active involvement of the private sector in disaster management activities and includes private sector entities as members of the forum, thereby enhancing collaborative efforts in disaster response and resilience building.

As illustrated in Figure 3, civil society and government actors have the highest participation in the Forum PRB. Unlike other regions where government involvement predominates in disaster management (Putra et al., 2017b), Yogyakarta exhibits significant civil society engagement. This is evident from the large number of civil society groups actively participating in the Forum PRB. This suggests that civil society plays a significant role and has a substantial impact on disaster management within the region.

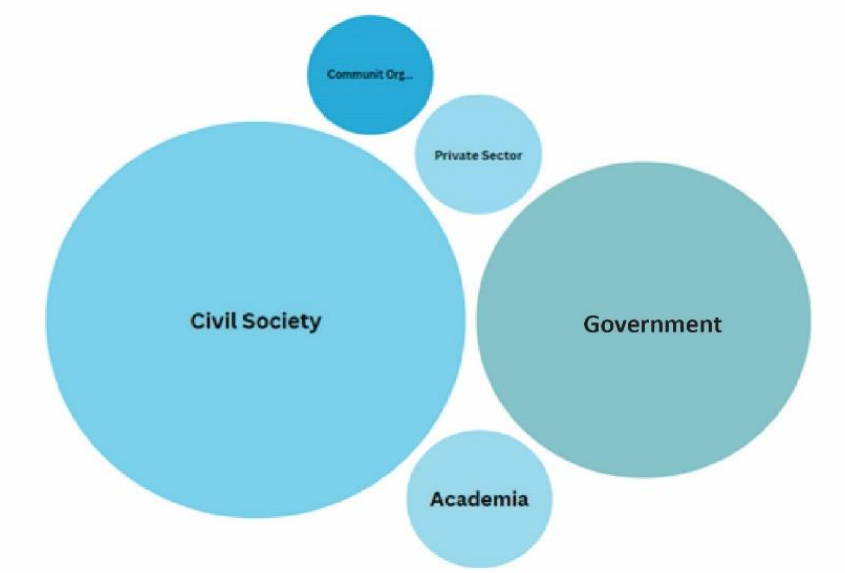

Figure 3. Mapping of Actors on Disaster Management Activities at the Local Level

Forum PRB of Yogyakarta becomes a platform for cross-sectoral communication and planning. Through this forum, stakeholders coordinate and plan multi-sectoral activities throughout the disaster cycle, encompassing preparedness, response, emergency actions, rehabilitation, and reconstruction efforts.

In the education sector, the Forum PRB, in collaboration with the Education Office and BPBD, has supported the implementation of the Safe School Disaster Units (*Satuan Pendidikan Aman Bencana*, SPAB) program at 16 elementary and junior high schools in Yogyakarta Province. This initiative focuses on building basic disaster management capacities, particularly for hydrometeorological hazards, through the implementation of mitigation strategies and evacuation planning. While formal education institutions have adopted SPAB, non-formal education is still underdeveloped in disaster preparedness. At the university level, academics have developed disaster-related curricula and community outreach activities, although curriculum standardization requires further development. Integrating DRR into school curricula also fulfills the community's right to social protection and safety, especially for vulnerable groups.

In the health sector, integration between disaster management, climate adaptation, and social issues is primarily observed in emergency response, with limited expansion into broader health system functions. Civil society organizations like the Muhammadiyah Disaster Management Center (MDMC) collaborate with local government agencies to develop hospital disaster plans and ensure service delivery to vulnerable populations. These efforts encompass emergency response and support for mitigation, preparedness, and rehabilitation. Some initiatives have begun addressing climate-related health risks, such as anticipating and managing vector-borne diseases like dengue fever, which are exacerbated by climate-related events. However, comprehensive integration into health systems beyond emergency contexts is still limited.

The social sector demonstrates initial efforts toward disaster integration, notably through government-led initiatives such as TAGANA, which provides rapid response and social assistance during disasters, and Disaster Resilient Villages or *Kampung Siaga Bencana* (KSB), which strengthens community-based preparedness at the village level. A notable example is the integration of disaster-related modules into the PKH, which introduces basic preparedness knowledge to beneficiary households to enhance their resilience and support adaptation to changing environmental conditions. However, the integration is still limited due to the insufficient disaster-related capacity of PKH facilitators and the lack of systematic collaboration with other stakeholders across sectors.

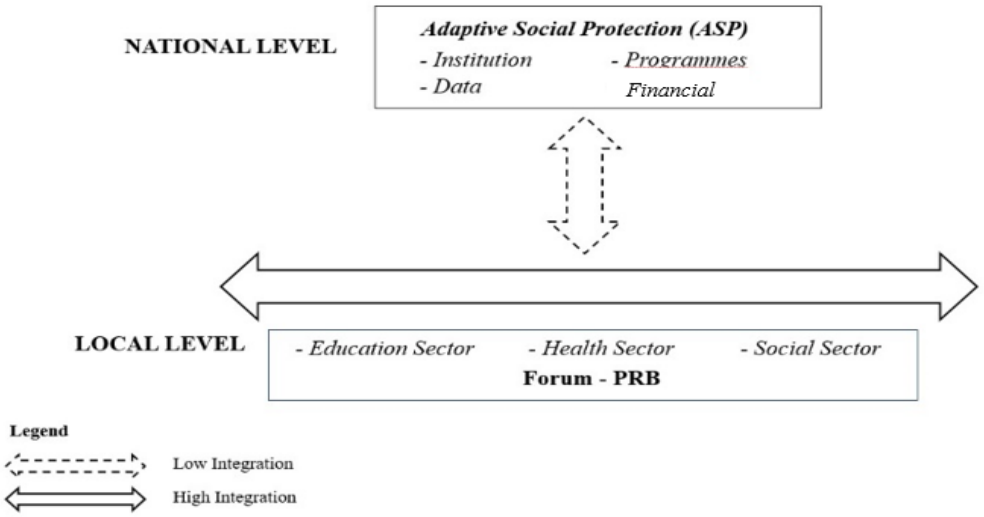

Figure 4. National and Local Level Linkages for the Integration Approach

The governance structure within the Forum PRB facilitates and accelerates integration at the local level by leveraging the complementary strengths of its stakeholders. This locally grounded and horizontally coordinated model demonstrates that integration can advance even without national regulatory frameworks. As shown in Figure 4, the multilevel coordination structure showed the integration of ASP in Indonesia.

4.0 DISCUSSIONS

4.1. National Level: Indonesia Needs an Integration Approach

Indonesia, as an archipelagic nation situated in a tropical climate zone, is highly prone to hydrometeorological hazards, with over 74.10% of more than 25,487 recorded disaster events between 2015 and 2021 categorized as hydrometeorological in nature, including floods, droughts, extreme weather, and forest fires (BNPB, 2024). The intensification of these events is closely linked to climate-related events, which are projected to result in economic losses of up to IDR 544 trillion from 2020 to 2024, unless policy intervention is implemented (Bappenas, 2021). These disasters disproportionately affect poor and vulnerable populations, with Indonesia's poverty rate reaching 9.71% in 2021 (Statistics Indonesia, 2021). Empirical evidence suggests that recurring disasters exacerbate the incidence and severity of poverty by disrupting livelihoods and reducing coping capacities (Hallegatte et al., 2017; Kosec & Mo, 2017). However, national policies on social protection (SP) and disaster management, including those related to climate adaptive action, remain fragmented, with separate policy frameworks and limited cross-sectoral coordination governing these areas. This condition hinders the ability of both systems to work effectively in dealing with interconnected challenges of climate-related disasters and poverty alleviation. Integrating social protection, disaster management, and climate change adaptation remains conceptual at the national level. Government policies attempt to align two parallel approaches: linking social protection with disaster management and aligning climate change adaptation with disaster risk reduction. However, there is a lack of overarching regulation that formally integrates all three components —specifically, social protection, disaster management, and climate change adaptation —into a unified framework. As a result, implementation across different levels of governance is still fragmented.

4.1.1 Disaster Management, Climate Change Adaptation, and Social Sector Intervention

At the national level, the GoI recognizes disaster management, including climate adaptive action, as a challenge that can hinder national development achievements. Therefore, in Indonesia's Medium-Term Development Plan for 2020-2024, disaster mitigation and climate change adaptation are integral factors in program formulation, included within the seven development agendas of the National Medium-Term Development Plan (RPJMN) (Bappenas RI, 2019). GoI has already acknowledged the importance of an integration approach, not only for disaster response but also for social intervention.

One of the strategic entry points for addressing social vulnerabilities is the implementation of social protection programs that promote well-being, alleviate poverty, and strengthen human capital. These programs are essential to enhancing the resilience of both households and communities, promoting greater equity, and

supporting national socio-economic development (Drolet, 2014; Kuriakose et al., 2013). The Sendai Framework also emphasizes that building up disaster resilience in affected communities should consider developing social safety nets linked with livelihood enhancement programs (IPCC, 2007).

Within the governmental structure, different ministries are responsible for these policy domains. The Ministry of Social Affairs supervises the social protection and social development sector. Climate change adaptation is an action that falls under the Ministry of Environment and Forestry's task, while disaster risk reduction is the responsibility of the National Disaster Agency (BNPB). These become a challenge when "coordination" is difficult to achieve. However, the National Planning Agency (Bappenas) has become a glue for developing the linked program among the issues. Among the three institutions, the Ministry of Social Affairs is the oldest ministry, and it has a dual role in managing social protection and addressing disaster impact issues. Before the establishment of BNPB in 2007, disaster management responsibilities were part of the Ministry of Social Affairs' mandate. As a result, the Ministry continues to play a significant role in humanitarian disaster response, particularly in mitigating disaster impacts through social mechanisms.

These three approaches had a fixed and firm path to establish each goal through policy, planning/strategy, and program. Although different ministries may lead to unlinked potential, some programs are already open to coordination with other agencies and ministries. The analysis also reveals that policies, plans, and programs exist in Indonesia, but full integration remains limited. At the policy level, the GoI has attempted social protection with disaster management, climate change adaptation, and disaster risk reduction. However, a holistic integration of all three approaches within a single **coherent framework** has not yet been achieved.

4.1.2 Intersection Among the Three Approaches

As previously emphasized, social protection, disaster management, and climate change adaptation operate through distinct methodologies and institutional frameworks, often in relative isolation. Although efforts toward integration have been initiated, current practices tend to establish only limited linkages between the two fields. However, the inherent complexity of associated risks suggests that these three approaches may be insufficient if implemented independently.

Despite their independent development, these approaches share a fundamental commonality: their interventions target the vulnerability of affected populations. Poverty becomes significantly exacerbated when combined with the impacts of disasters and climate-related events. The limited adaptive capacity of impoverished and vulnerable groups to recover from natural shocks frequently traps them in a cycle of destitution. The adverse consequences of unforeseen risks and climatic shifts include the depletion of household assets, disruption of livelihoods, loss of income, and other detrimental effects that severely impact their long-term well-being.

From the analysis of Table 1, we can see that social protection can act as a unifying framework and a strategic entry point for integrating the other two approaches. ASP offers a responsive evolution of social protection, capable of addressing environmental disruptions stemming from disasters and climate events. ASP broadens the definition of collaboration between social protection, disaster management, and climate change. This integrated approach holds significant potential to enhance resilience and facilitate an escape from poverty. Specifically, ASP examines how social protection can enhance adaptive capacities, making them more resilient to both current and future shocks or stresses. It is structured around four core pillars: institutions and governance, program design and distribution, data, and finance (as seen in Figure 2). These pillars act as the connective tissue for the three disparate approaches. For instance, in climate adaptive action, ASP adopts existing social protection programs, such as transforming traditional insurance into parametric insurance (e.g., weather-indexed agricultural insurance). This provides a mechanism for communities to build their asset base, fostering proactive planning and climate-resilient livelihoods. Similarly, following natural disasters like tsunamis or volcanic eruptions, conditional cash transfers become a viable option for victims to rebuild their lives. ASP is posited to reduce vulnerability by critically buffering the negative impacts of disasters and climate-related events, effectively enhancing existing social protection frameworks by integrating disaster and climate considerations.

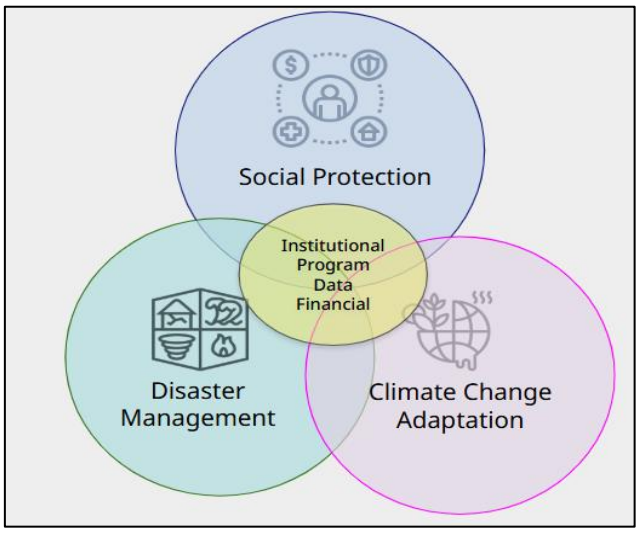

Figure 2. Adaptive Social Protection Concept

In Indonesia, ASP has been strategically embedded within the National Mid-Term Development Plan (RPJMN) for 2020-2024 and 2025-2029. The Ministry of National Development Planning (Bappenas) leads the conceptual development of ASP, translating it into pilot projects. The integration process, guided by the four pillars, is currently focused on the institutional level. This involves intensified coordination during the formulation of operational policies, such as government or presidential regulations, for inter-ministerial implementation with relevant bodies, including the Ministry of Social Affairs, the Ministry of Environment and Forestry, the National Disaster Management Agency (BNPB), and other technical ministries/agencies. Data integration has commenced by implementing a national socioeconomic census program, the Social Economy Registration Data, intended to be ASP's primary data source. Meanwhile, the programmatic and financial aspects are being reviewed to identify cross-cutting elements across the three approaches, to develop innovative and integrated program and financing models.

4.2 Local Level: Forum PRB of Yogyakarta as A Lesson Learnt

Decentralization has granted local governments greater authority, particularly in disaster management and response. Since the 2006 Yogyakarta earthquake, efforts to reduce risk and mitigate disasters have increased significantly. A wide range of activities and policies have emerged through cross-sector collaboration with diverse approaches. The Disaster Risk Reduction Forum, or the Forum PRB in Yogyakarta, serves as an active multi-stakeholder communication platform, involving NGOs, academics, the private sector, community organizations, and both provincial and municipal governments. The government's formal support for this forum, as demonstrated through the Governor's decree, signifies an awareness of the crucial role of cross-sector collaboration in addressing disasters, along with the government's tangible efforts to facilitate such forums.

The Forum PRB of Yogyakarta coordinates the mainstreaming of disaster resilience across sectors and provides the governor with input in formulating disaster risk reduction policies. Moreover, it acts as an effective communication conduit between communities, disaster management practitioners, and the government in disaster response. The Forum PRB is also part of the National Platform for Disaster Risk Reduction (Planas PRB). The Forum PRB aims to strengthen collaboration and synergy among various stakeholders facing disaster-related challenges. Meanwhile, the Planas PRB serves as a national coordination mechanism, integrating diverse disaster risk reduction initiatives to enhance preparedness and community resilience in Indonesia.

4.2.1 Governance Through the Local Multistakeholder Forum

Governance, broadly defined, is the process of decision-making and the process by which decisions are implemented or not implemented (Ali, 2015). Within disaster management, governance is essential in determining the effectiveness, coordination, and sustainability. Governance in disaster management refers to a proactive and comprehensive approach that encompasses all four phases of the disaster risk management cycle:

prevention, preparedness, response, and recovery (Vu et al., 2025). It emphasizes the collaborative engagement of multiple stakeholders to ensure that risks are managed systematically and inclusively.

Yogyakarta has initiated practical steps toward integration at the local level, driven by stakeholder capabilities and local needs. The Forum PRB has become a key governance platform that facilitates horizontal coordination among local actors. Through this platform, integration efforts, although not comprehensive, are being operationalized by each sector, such as education, health, and social protection. On the other hand, the Forum PRB provided a concrete–example of disaster governance. It exemplifies a multistakeholder coordination that facilitates cross-sectoral communication, policy alignment, and joint action. Governance through the Forum PRB is not solely concerned with formal institutional arrangements but rather with how actors with different capacities, levels of authority, and spheres of influence interact and collaborate to shape disaster management outcomes.

4.2.2 Key Actors Mapping of the Forum PRB

The Forum PRB, as an institutional body, demonstrates governance dynamics influenced by the distribution of power among involved actors. Drawing on Schmeer's (2000) stakeholder analysis framework, effective disaster governance can be analyzed through the lens of power distribution and leadership roles among key stakeholders. These stakeholders are categorized into three main groups as presented in Table 2:

- Group 1 has High Power and Leadership
- Group 2 has Medium Power and Leadership
- Group 3 has Medium-High Power without Leadership

Table 2. Power and Leadership Analysis of the Forum PRB

Leadership		**No Leadership**
High Power	Medium Power	Medium-High Power
Civil Society Organization Local Government	Academia	Private Sector Community Organization

The civil society organization and the local government are the two most influential actors, both holding substantial power and leadership roles in Yogyakarta's disaster governance landscape. The government provides the legal mandate, institutional infrastructure, and policy authority to coordinate disaster management at various levels. It is responsible for enacting regulations, allocating resources, and ensuring the implementation of disaster risk reduction (DRR) strategies. On the other hand, civil society operationalizes these strategies at the grassroots level, mobilizing communities, advocating for vulnerable groups, and enhancing accountability and transparency.

Academia occupies a moderate position in terms of power and leadership within the Forum PRB. Universities and research institutes contribute by conducting research, providing expertise, and developing new technologies and methodologies for DRR. Their roles in education and professional training also strengthen overall disaster-management capacity. Although they lack the direct authority of government bodies, their influence through knowledge and innovation is critical.

The private sector and community organizations possess moderate-to-high power but hold no formal leadership roles. The private sector can bolster preparedness and response by investing in resilient infrastructure, emergency services, and logistics, thereby facilitating rapid recovery. Their resources and capabilities are essential in facilitating quick recovery and rebuilding efforts. On the other hand, community organizations are vital at the grassroots level. They are instrumental in implementing community-based disaster risk reduction strategies, raising awareness, and providing local insights that are crucial for effective disaster response. Although they may not hold formal leadership positions, their power lies in their deep connection with local communities and their ability to mobilize resources and support at the community level.

Therefore, governance through the Forum PRB represents a hybrid model, combining hierarchical authority vested in government with horizontal collaboration among civil society and other stakeholders. This

distributed structure enhances coordination, adaptability, and legitimacy. The Forum PRB thus demonstrates how an inclusive, multi-actor platform can operationalize disaster management policies through effective power-sharing and leadership distribution.

4.3 Linking National and Local Levels Through Adaptive Social Protection (ASP)

At the national level, ASP is conceptually structured around four pillars: institutions, data, programs, and financial resources. However, these components are at the conceptual stage with limited translation into operational mechanisms at the local level. Conversely, at the local level, the Forum PRB has practically operationalized the integration agenda on three key sectors, especially education, health, and social protection, through cross-sectoral collaboration and context-specific implementation, even without direct regulatory or programmatic directives from the national level. The integration initiatives led by the Forum PRB could be further strengthened by adopting the four ASP pillars into its governance framework. This thereby positions it as a model of best practice for the broader national disaster management system. This highlights the essential role of local governance in implementing integrative approaches to resilience.

5.0 CONCLUSIONS

The mainstreaming of the integration concept between social interventions, particularly social protection, and disaster management, including climate-adaptive action, requires a synergistic approach (Davies et al., 2013). This approach is beginning to be evident in Indonesia's governance at both the national and local levels, with Yogyakarta Province serving as a case study.

At the national planning level, the integrative approach to disaster management and the social sector has been outlined, mentioning the cross-cutting mechanism between social protection, disaster risk management, and climate change adaptation. The cross-cutting mechanism of these three frameworks is still in the early stages. However, in terms of implementation, the Government of Indonesia attempts to link two approaches: social protection with disaster management and climate change adaptation with disaster management. The policy has not yet integrated all three approaches.

At the local level, decentralization enables more flexible and inclusive governance, involving a broader range of actors beyond local governments. In Yogyakarta, the Forum PRB exemplifies this by involving diverse stakeholders, including NGOs, CSOs, provincial and city governments, and the private sector. Yogyakarta demonstrates significant civil society engagement through the Forum PRB. The governance of disaster management encompasses multiple sectors and disciplines, with both government and civil society playing critical roles in the Forum PRB, which coordinates efforts in disaster management. The government holds the authority and leadership in coordinating disaster responses. On the other hand, the strong presence of civil society in Yogyakarta greatly enhances the mobilization and execution of disaster management activities within the community. Yogyakarta has made significant progress, with advanced collaboration among actors and social sectors, primarily focusing on education, health, and some aspects of social protection. Furthermore, the integration of social protection remains nascent, with initiatives primarily driven by the government and lacking substantial involvement from other stakeholders.

To align national and local efforts, the ASP approach has the potential to function as a unifying instrument that enables cross-sectoral integration among disaster management, climate change adaptation, and social protection. This approach is reflected in Indonesia’s Medium-Term National Development Plans for the periods 2020-2024 and 2025-2029. However, these components remain largely conceptual, with limited translation into concrete operational mechanisms at the local level.

In addition, this study proposes a set of three recommendations to enhance the sustainable integration of social protection and disaster management systems. First, at the national level, establishing institutionalized cross-sectoral coordination in the context of ASP. Second, at the local level, ideally, conducting meetings every two to three months is crucial, engaging key stakeholders such as government agencies, civil society organizations, the private sector, and local communities through a dynamic platform like the Forum PRB. Third, strengthen the existing Forum PRB by implementing the four pillars of ASP in the local context, ensuring the cross-cutting not only the institutional but also program, data, and financing due to regional resilience of Yogyakarta by fostering a more sustainable and adaptive disaster governance framework.

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