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Integrating Anticipatory Action in Indonesia

A Key Pillar of Indonesia's Disaster Management Priorities

Indonesia is highly vulnerable to extreme weather events, making anticipatory action crucial for preventing and mitigating their impacts on its population. This case study explores Indonesia's experience with anticipatory action supported by the World Food Programme (WFP).

In April 2023, the Government of Indonesia issued a drought emergency alert¹ to anticipate the potential food shortages in several provinces, including Nusa Tenggara Timur (NTT). This alert enabled the provincial government to access the resources to distribute rice to beneficiaries under the extreme poverty programme, thereby

preventing and mitigating the potential effects of the drought on the most vulnerable people.

This proactive approach to drought is not only an example of how governments can protect their most vulnerable populations before the impact of extreme weather events. It also highlights how the approach to disaster management is changing and how the Government of Indonesia, among others, is leading the trend regarding policy integration of anticipatory action.

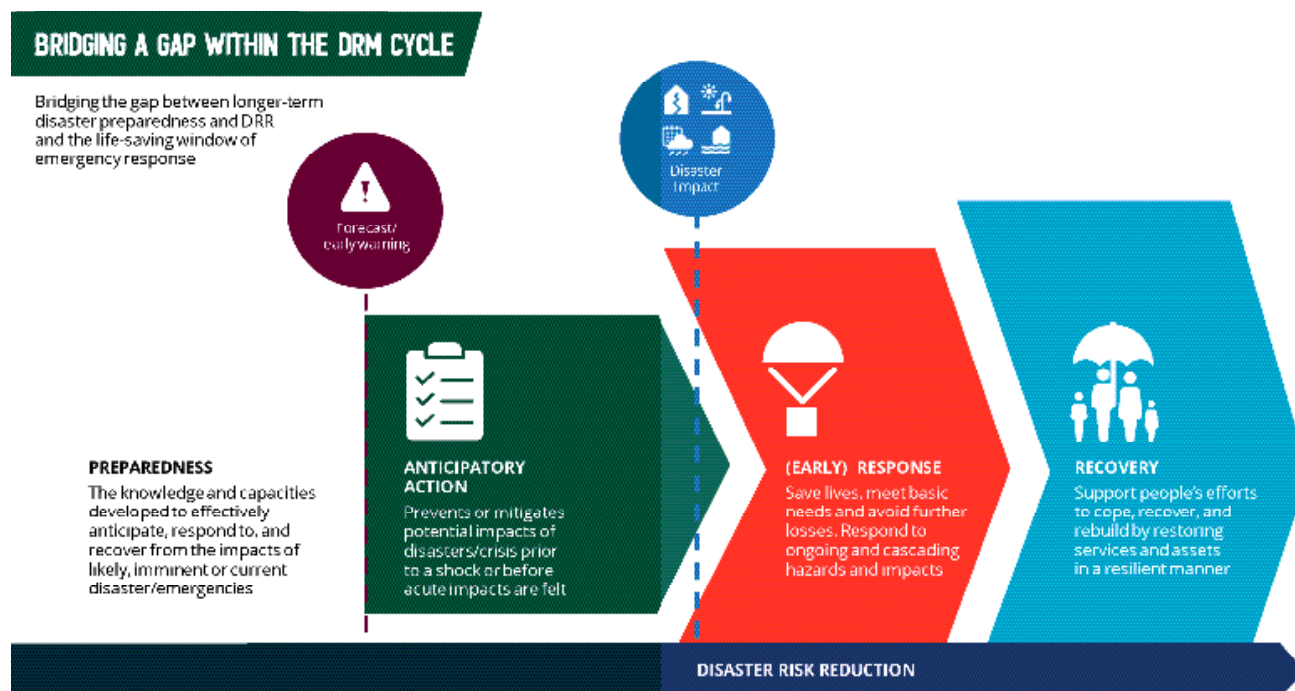
[Anticipatory action](#) (AA) is defined as acting ahead of a predicted hazardous event to prevent or reduce impacts on lives and livelihoods and

¹ Based on NTT Governor decree No.172/Kep/HK/2023

humanitarian needs before they fully unfold. This works best when activities as well as triggers or decision-making rules are pre-agreed, and decisions are made to guarantee the fast release of pre-arranged funding.

This case study showcases how the Indonesian government has undertaken this journey with WFP's support and identifies the main achievements to date and challenges to overcome in the near future.

Figure 1: Anticipatory Action Graphic



Context

Indonesia, an archipelago of over 17,500 islands spread across 38 provinces, is home to a population of 270.6 million as of 2019 and is Southeast Asia's largest economy (World Bank, 2020). Despite its economic strength, Indonesia is one of the most disaster-prone countries globally, with its diverse geography, topography, and climate further amplifying its vulnerability. The country is significantly exposed to extreme weather events, like floods and droughts, as well as long-term challenges such as rising sea levels, shifting rainfall patterns, and increasing temperatures.²

The Government of Indonesia has demonstrated remarkable leadership in disaster and climate risk management. By constantly adapting its laws, policies, and institutions, the country has

enhanced its ability to plan for and respond to disasters. Improved tools, data and capacity have supported these efforts.

At the heart of these efforts is the National Disaster Management Authority, known in Indonesian as Badan Nasional Penanggulangan Bencana (BNPB). BNPB is the primary national agency tasked with overseeing all disaster-related activities, from preparedness, prevention, and mitigation to response. WFP has a long-standing partnership with BNPB, providing support to bolster the country's capacity for emergency preparedness and response. In recent years, this collaboration has expanded to include a focus on anticipatory action, since this proactive approach to disaster management aligns with Indonesia's forward-thinking strategies.

² [Indonesia - Summary | Climate Change Knowledge Portal \(worldbank.org\)](#)

WFP's role in Indonesia

In recent years, the World Food Programme (WFP) has played a pivotal role in supporting the Government of Indonesia, not by directly implementing Anticipatory Action programmes, but by serving as a strategic partner. Rather than taking a hands-on approach, WFP works closely with government ministries and UN partners, facilitating coordination, sharing global and regional best practices, and

offering independent advice on AA policy and implementation. This strategic support is vital in enhancing the country's capacity to effectively address food security challenges. Even in a non-traditional role, WFP's contributions are crucial, ensuring that Indonesia is better equipped to anticipate, prepare for and respond to the complex risks it faces.

Anticipatory Action in Indonesia

The implementation of AA in Indonesia began in 2015 with pilot projects supported by the International Federation of Red Cross and Red Crescent Societies (IFRC). Interest in AA grew significantly in 2022, particularly during the Global Platform for Disaster Risk Reduction (GPDR) in Bali. Here, the Government of Indonesia was exposed to best practices from other countries and partners like WFP. This sparked a renewed commitment to integrating AA into the country's disaster management framework. Nowadays, AA is among the priorities of the newly elected president, linked to strengthening mitigation efforts, early warning systems, and international cooperation.

The graphic below (Figure 2) outlines the coordinated efforts by the Government of Indonesia and WFP to embed Anticipatory Action (AA) into the country's disaster management systems. Beginning in 2022, WFP intensified its involvement by leading an AA scoping study, followed by initiating an AA Working Group with UNOCHA, with the final aim of integrating this group as part of the Disaster Management National Cluster. This phase was characterised by advocacy and foundational discussions with the government and key partners in the country, following significant engagements such as the

Global Platform for Disaster Risk Reduction (GPDRR) in Bali and the ASEAN Framework on Anticipatory Action launch.

The scoping study revealed key findings:

- **Policy Foundations:** Indonesia's major disaster management policies provide a solid basis for the AA approach. Existing early warning systems, disaster risk management, and resilience programmes can be adapted to incorporate AA, fostering consensus and ownership around the concept.
- **Early Warning Systems / Science:** Indonesia's multiple forecasts, early warning systems, and risk products form a robust foundation for an operational early warning system. Systematic connections between these systems and the availability of localised, hazard-specific impact-based forecasts are needed to support the translation of these systems into triggers and thresholds for AA.
- **Evidence and implementation:** Demonstrating evidence of AA implementation is essential to inform and enhance the Disaster Management (DM) system with the AA concept in Indonesia. Local-level application of AA principles

should be supported to identify gaps, strengthen mechanisms, and demonstrate interoperability. Documenting and sharing good practices and lessons learned will further inform and improve the DM with an AA system.

Building on these findings, discussions progressed, and by 2023, concrete steps were taken towards implementation. WFP launched AA pilot programmes in three provinces—West Kalimantan, Yogyakarta, and Nusa Tenggara Timur (NTT)—targeting different hazards such as floods, cyclones, and droughts. These efforts were complemented by strategic planning and policy development, including creating a WFP policy brief on AA in Indonesia.

A significant development during this period was the facilitation of a South-South and Triangular Cooperation (SSTC) exchange between Indonesia and the Philippines, led by WFP. This exchange allowed the Government of Indonesia to learn directly from the Philippines' experiences with AA, a country recognised for its advanced disaster risk reduction practices.

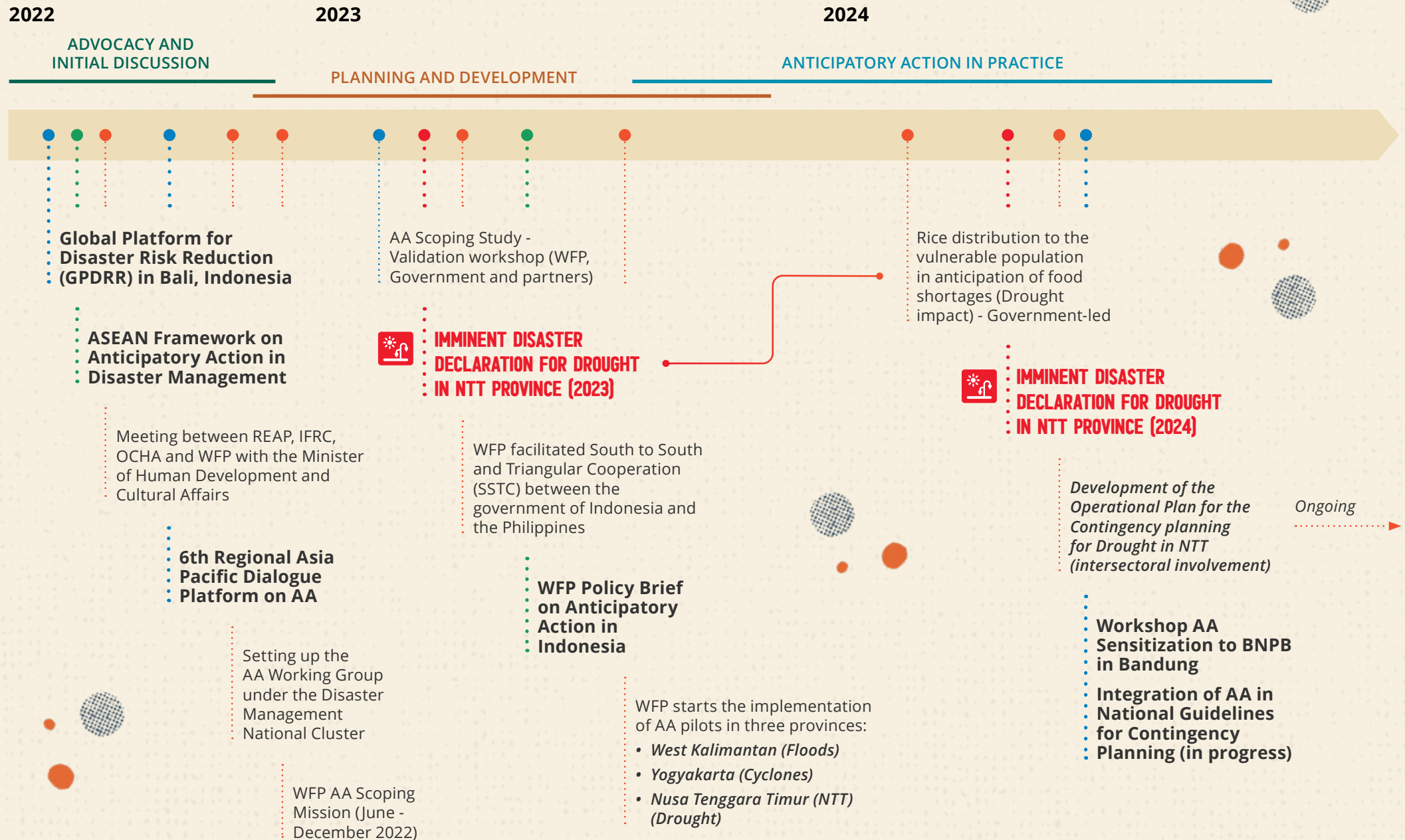
The exchange strengthened Indonesia's understanding of how to operationalise AA within its unique context, drawing on practical lessons from its Southeast Asian neighbour.

The collaboration further deepened in 2023, as the work to integrate AA principles into contingency planning documents (RENCON) in NTT and Yogyakarta provinces started, with WFP's continued support. A notable example of AA in practice was the proactive rice distribution to vulnerable populations in NTT, aimed at mitigating the impacts of drought-induced food shortages.

These milestones highlight the evolving partnership between the Indonesian government and WFP, showcasing a progressive shift towards embedding AA into the country's disaster preparedness and response strategies. However, gaps remain. The continuation of this study will highlight the strengths of the AA system, the ongoing efforts, and the existing gaps that could shape the roadmap towards full AA integration in Indonesia.



FIGURE 2: AA TIMELINE IN INDONESIA



Indonesia Anticipatory Action System: main achievements and challenges

POLICY FOUNDATION FOR AA: BASES AND CHALLENGES

Anticipatory action in Indonesia is grounded in the Disaster Management Law and its regulations. Under Presidential Regulation No. 21 and 22/2008, derived from Law No. 24/2007, a Siaga Darurat (Emergency Alert) can be issued based on early warnings. This declaration compels government agencies at all levels to mobilize resources and take swift action. The procedures and resources mobilised mirror those used in emergency responses, including human resources, equipment, logistics, and the activation of disaster command systems to ensure life-saving efforts and address the needs of potentially affected communities.

Additionally, Peraturan Badan BNPB No. 4/2022 grants BNPB/BPBD the authority to act decisively upon receiving early warnings. This regulation enables the issuance of instructions for preparedness, relief, or evacuation from both BNPB and local government leaders. Though it does not explicitly cover early warnings, Ministry of Home Affairs Regulation No. 101/2018 reinforces local governments' roles in disaster management, making explicit mandatory duties of local governments during disaster alerts, including Siaga Darurat.

Although anticipatory action is not explicitly mentioned in current policies, the core elements are present. However, a shared understanding of this approach is crucial, as few are familiar with it. Socialising and clarifying how to apply existing policies is key to successful implementation.

“ So the challenge in Indonesia is most significant because ensuring people understand AA is not a matter of reality.

- BNPB official ”

To address this, WFP is collaborating with BNPB and provincial BPBDs to promote the concept across the institutions. With this support, AA is being integrated into contingency plan guidelines at the central level and operational plans at the provincial level.

EARLY WARNING SYSTEM IN INDONESIA: THE BASES AND CHALLENGES

Indonesia's Meteorological, Climatological, and Geophysical Agency (BMKG) is recognised for its advanced monitoring and forecasting capabilities, producing critical forecasts for hazards like extreme rainfall and drought. The agency also manages specialised early warning platforms, such as Signature³, for flood alerts. However, these platforms are currently not interconnected, which limits their effectiveness.

Despite BMKG's advanced technology, Indonesia's diverse and complex topography presents significant challenges in fully utilising these capabilities. This complexity often reduces the accuracy of local forecasts and affects the confidence in these warnings, which is crucial for timely action.

³ To know more, see here: <https://signature.bmkg.go.id/>

“ *The biggest challenge in implementing anticipatory action in Indonesia is ensuring accurate early warning data and integrating this information across different agencies and local governments to enable timely and effective responses.*

- BNPB official ”

BMKG issues early warnings, but the responsibility for declaring emergencies and mobilising resources rests with government officials, including the President, Governors, District Heads, and Mayors. These decisions are based on recommendations from BNPB at the national level or BPBD at the sub-national level. This structure creates a gap between issuing warnings and taking action.

Although current forecasts, early warnings, and risk products form a solid foundation for an operational early warning system that could support anticipatory action, these systems need to be systematically integrated, according to the staff interviewed. This includes developing localised, hazard-specific, and impact-based forecasts to enhance their effectiveness.

Based on WFP's experience in other countries in the region and abroad, WFP is working with Indonesian institutions to improve the translation of early warnings into actions. This involves incorporating localised triggers into contingency planning processes and establishing standardised protocols for anticipatory measures. Currently, while there are specific triggers for actions like crop protection or drought, these are not systematically connected to anticipatory actions.

The BMKG/WFP technical collaboration includes addressing inconsistencies in data and ensuring that regional differences are accounted for and enhancing the models that combine land

observations with satellite data. This aims to make early warning systems more actionable and integrated across all levels of governance. An ongoing needs assessment will refine these efforts, identify gaps, and seek innovative solutions.

Key gaps include:

- **Regional Variability:** Handling regions with vastly different local conditions is challenging. Inconsistent or insufficient data hampers the ability to provide actionable insights. Effective processes involve close collaboration with regional offices, provincial BNPBs, and other relevant agencies to gather and integrate accurate local data into the broader system.
- **Location-Specific Triggers:** Existing triggers are not consistently linked to proactive actions before impacts occur.
- **Sector-Specific Guidance:** There is a need for sector-specific guidance on how different sectors can develop adapted anticipatory action and trigger their own sector-specific funds based on early warnings.
- **Integration of EW information into other programmes:** Early warnings should not only trigger anticipatory action and emergency responses but it is recognised that EW need to be integrated with other programmes, such as disaster-resilient community initiatives, to activate preventive measures.

EVIDENCE AND IMPLEMENTATION

Establishing a clear evidence base for AA implementation is essential to refine and improve the AA system in Indonesia. Following the scoping study, WFP started pilots in three provinces: West Kalimantan, Yogyakarta, and Nusa Tenggara Timur (NTT). Below is an overview of the pilots' current status, challenges and planned steps.

Province	Hazard	Entry points for AA	Achievements	Challenges	Next steps
West Kalimantan	Floods	<ul style="list-style-type: none"> • Strong buy-in from local authorities. • Agricultural sector as a focus, protecting crops from floods and droughts through AA approach. • Collaboration with local meteorological and agricultural offices to integrate climate information into actionable plans. 	<ul style="list-style-type: none"> • Integration of flood forecasting with satellite crop monitoring, with triggers based on the combination. • AA integrated into the climate field school curriculum. • Improved early warning systems for floods. • Local authorities have taken ownership and climate information has been successfully integrated into local agricultural practices. 	<ul style="list-style-type: none"> • Aligning local government priorities with project objectives. • Developing effective communication channels between various stakeholders. • Limited measurable impact at this stage. • Scale up to additional villages and districts. 	<ul style="list-style-type: none"> • Conduct simulation to test the approach. • Handover to local authorities for scaling up. • Develop an early action protocol for food security interventions, starting with protecting crops and farmers' incomes before flood impacts. • Integration in the contingency plan, with focus on food security.
Yogyakarta	Cyclones	<ul style="list-style-type: none"> • Strong political will and commitment to integrating AA into contingency planning, adopting an intersectoral approach. 	<ul style="list-style-type: none"> • Training of BPBD staff on AA. • Sensitisation workshops and sectoral analysis. • AA is now part of the contingency planning process. 	<ul style="list-style-type: none"> • Staff rotation creates knowledge continuity issues. • Trust on cyclone forecasts needs to be improved. • Lack of measurable impact to date. 	<ul style="list-style-type: none"> • Development of the Anticipatory Action Plan, including triggers and thresholds and sector-specific actions. • Broader engagement with national actors.
NTT	Drought	<ul style="list-style-type: none"> • WFP presence in Kupang with strong linkages to provincial authorities. • The province is highly vulnerable to drought events. 	<ul style="list-style-type: none"> • AA has been integrated into contingency planning and formally endorsed through Governor regulation. • Intersectoral advocacy, including the social protection and agricultural sector. • The provincial government made declaration of emergency based on early warnings and initiated response efforts. 	<ul style="list-style-type: none"> • Lack of measurable impact to date. • Coordination between sectors is still developing. 	<ul style="list-style-type: none"> • Develop a comprehensive operational plan for AA. • Establish triggers and thresholds for drought, along with sector-specific actions. • Strengthen advocacy at district level. • Integrate existing sector specific actions into CP and operational plan (e.g., social protection actions).

Broader challenges and opportunities

The pilot projects in these three provinces, especially in NTT, reflect **broader national challenges while highlighting opportunities for the operationalisation of AA across Indonesia.**

- A. Common understanding of AA:** As mentioned by the BNPB, one of the major challenges is fostering a common understanding of AA among stakeholders at all levels. Capacity building, socialisation, and effective dissemination of the AA concept are essential, particularly in regions where local leaders have not fully embraced the approach.
- B. Multi-sectoral coordination:** Stronger coordination among key sectors, such as food security, agriculture, the national grain reserve and social protection, is crucial. A multi-sectoral approach will help integrate AA into existing policy frameworks and promote a coherent, proactive response across various ministries.
- C. Accurate and trusted hazard information:** Reliable early warning systems are critical for building trust among authorities and communities. However, inconsistencies in data, regional differences, and the segregation of responsibilities between data-owning agencies create challenges in the timely dissemination of actionable information. Despite the presence of specific triggers for events like droughts or crop protection, these mechanisms are not systematically linked to anticipatory actions, highlighting the need for standardised protocols and stronger partnerships.
- D. Measuring impact:** A robust monitoring and evaluation (M&E) framework is essential to

measure the impact of Anticipatory Actions (AAs) on the population. The current system offers limited capacity to assess the effects of anticipatory interventions, such as the rice distribution ahead of the drought impacts in NTT province. Although district and village authorities are responsible for this, a lack of funding and knowledge hampers their ability to do so effectively. This framework should be integrated with the contingency planning process to ensure that lessons learned are used to refine and scale up AA efforts across the country.

“ *Developing integrated planning processes involving all relevant stakeholders is crucial to ensure alignment of objectives and activities.* ”
- National Agency official in Kupang



Key areas for Policy, Advocacy and Coordination

- **Political will:** Support from provincial authorities, BNPB, and meteorological offices is essential to initiate and sustain the AA process.
- **Coordination:** Multi-sectoral coordination requires advocacy to encourage collaboration across ministries and agencies.
- **Trust in data:** Building trust in localised hazard data is crucial for ensuring buy-in from both authorities and the public.
- **Intersectoral work:** Scaling up AA will necessitate the integration of social protection mechanisms and greater involvement of relevant sectors.
- **Involvement of non-traditional actors:** Collaboration with research institutions, civil society, and other non-traditional actors can help embed AA into national policies and contingency planning.
- **South-South and Triangular cooperation:** Learning exchanges with governments facing similar challenges have proven to be effective tools, as demonstrated by the experience with the Philippines. Encouraging additional exchanges with other governments is necessary.

“ However, sometimes the implementation is not as smooth because institutions often focus only on their respective roles.
- BNPB official ”

Localisation of the approach and targeting

- **Targeting vulnerable populations:** Ensuring AA reaches the most vulnerable populations, including those with disabilities, remains a significant challenge. Existing targeting mechanisms, such as the one owned by the Social Agency, need refinement and linkages to the AA process to ensure inclusivity and equity in anticipatory action intervention.
- **Local triggers:** The development of localised triggers that are systematically linked to anticipatory actions in contingency planning at the district and village level is necessary.
- **Integration with communities:** Early warning systems must be effectively translated to be inclusive and communicated to local communities to ensure they can take timely action.

Funding challenges

- **Budget allocation:** Securing funds for anticipatory actions is a significant challenge. While national budgets may provide some resources during imminent alert phases, ensuring timely and adequate funding at subnational levels remains difficult. Although there is a policy allowing villages to use their own funds for AA, a lack of awareness complicates this decision⁴. Ministries and local governments also struggle to allocate specific funds for AA activities.
- **Joint funding mechanisms:** Discussions about creating a joint funding pool for pre-disaster actions are ongoing. However, clear guidelines and mechanisms are needed to access and use these funds effectively before disasters strike.

⁴ The exception is the villages that are part of the Disaster Resilient Villages (DESTANA), as they have more knowledge related to disaster management related policies.

Conclusion and next steps

This case study outlines the journey that Indonesia, with the support of WFP, has undertaken in the early implementation and operationalisation of anticipatory action. It explores the process of integrating AA into the disaster management framework at both national and provincial levels. The story demonstrates how national-level advocacy and pilot implementation in three provinces are proving that AA can be seamlessly integrated into local and national disaster management strategies, ultimately protecting the most vulnerable populations from the impacts of weather-related hazards.

The progress made in Indonesia underscores the critical role of local authority engagement and the importance of collaboration with meteorological agencies and various sectors. These partnerships are essential for developing early warning systems and embedding AA into existing practices. The case study highlights the significance of political will, strong advocacy, and the need for robust coordination across sectors like agriculture and social protection.

However, the journey has not been without challenges. Aligning AA with government priorities, developing effective communication channels to create a common understanding of AA, securing sustainable funding, and improving the accuracy and reliability of hazard data remain significant hurdles. Additionally, the limited measurable impact of the pilot projects underscores the urgent need for robust monitoring and evaluation systems to assess the effectiveness of AA interventions.

NEXT STEPS FOR WFP AND PARTNERS

To continue the momentum and further integrate AA into Indonesia's disaster management framework, WFP, the Government

of Indonesia and their partners should focus on the following key actions:

- **Adapt contingency plans:** Revise and adapt existing contingency plan guidelines to incorporate AA. The contingency plans need to be operationalised at the provincial level and thoroughly socialised, tested, and simulated to ensure they are practical and effective when disasters strike.
- **Engage additional stakeholders:** Involve new actors in the AA process, including the National Food Agency, the agricultural sector, and social protection institutions. Their involvement is crucial for creating a multi-sectoral approach that strengthens the overall disaster management framework at the provincial and district levels.
- **Enhance targeting mechanisms and foster inclusivity:** Review and refine existing targeting processes to ensure AA interventions are inclusive, with a focus on marginalised groups, including women, the elderly, and people with disabilities. Tailor early warning messages and Anticipatory Action Plans to address the specific needs of these groups, ensuring inclusivity and equity.
- **Strengthen monitoring and evaluation:** Following local authorities and the country processes, adapt existing tools and methodologies to measure the impact of AA interventions at the provincial and district levels. Robust M&E systems are crucial for tracking progress, identifying gaps, and refining strategies based on lessons learned.
- **Document lessons learned:** Continuously document the lessons from pilot implementations as they evolve. This documentation will provide valuable insights for other districts and provinces, enabling them to adapt and adopt the AA approach more effectively.

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