



Food and Agriculture  
Organization of the  
United Nations

**Viet Nam**

# Impact of Anticipatory Action

Racing against Typhoon Noru



**Funded by  
the European Union**

---

Efficient humanitarian assistance  
requires anticipation. For FAO, this means  
harnessing risk information systems to act  
faster and avert acute hunger.

**QU Dongyu**  
**FAO Director-General**

---

**Viet Nam**

# Impact of Anticipatory Action

Racing against Typhoon Noru

## REQUIRED CITATION

FAO. 2023. *Viet Nam: Impact of Anticipatory action – Racing against Typhoon Noru*. First revision. Rome.  
<https://doi.org/10.4060/cc8439en>

The designations employed and the presentation of material in this information product do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations (FAO) concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement. The mention of specific companies or products of manufacturers, whether or not these have been patented, does not imply that these have been endorsed or recommended by FAO in preference to others of a similar nature that are not mentioned.

© FAO, 2023

First revision 22/11/2023



Some rights reserved. This work is made available under the Creative Commons Attribution-NonCommercial-ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo/legalcode/legalcode>).

Under the terms of this licence, this work may be copied, redistributed and adapted for non-commercial purposes, provided that the work is appropriately cited. In any use of this work, there should be no suggestion that FAO endorses any specific organization, products or services. The use of the FAO logo is not permitted. If the work is adapted, then it must be licensed under the same or equivalent Creative Commons licence. If a translation of this work is created, it must include the following disclaimer along with the required citation: “This translation was not created by the Food and Agriculture Organization of the United Nations (FAO). FAO is not responsible for the content or accuracy of this translation. The original English edition shall be the authoritative edition.”

Disputes arising under the licence that cannot be settled amicably will be resolved by mediation and arbitration as described in Article 8 of the licence except as otherwise provided herein. The applicable mediation rules will be the mediation rules of the World Intellectual Property Organization <http://www.wipo.int/amc/en/mediation/rules> and any arbitration will be in accordance with the Arbitration Rules of the United Nations Commission on International Trade Law (UNCITRAL).

**Third-party materials.** Users wishing to reuse material from this work that is attributed to a third party, such as tables, figures or images, are responsible for determining whether permission is needed for that reuse and for obtaining permission from the copyright holder. The risk of claims resulting from infringement of any third-party-owned component in the work rests solely with the user.

**Sales, rights and licensing.** FAO information products are available on the FAO website ([www.fao.org/publications](http://www.fao.org/publications)) and can be purchased through [publications-sales@fao.org](mailto:publications-sales@fao.org). Requests for commercial use should be submitted via: [www.fao.org/contact-us/licence-request](http://www.fao.org/contact-us/licence-request). Queries regarding rights and licensing should be submitted to: [copyright@fao.org](mailto:copyright@fao.org).

This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of FAO, and do not necessarily reflect the views of the European Union.

Cover photography: © FAO/Nguyen Minh Duc

# Contents

Executive summary.....	v
<b>Introduction .....</b>	<b>1</b>
<b>Nature of typhoons in Viet Nam .....</b>	<b>3</b>
<b>Typhoon crisis timeline for central Viet Nam .....</b>	<b>5</b>
<b>The plan: building an Anticipatory Action protocol .....</b>	<b>6</b>
What did the triggering system look like for Typhoon Noru? .....	6
How were the actions selected? .....	7
What activities were carried out to prepare for the activation?.....	9
<b>The reality: from the first warning to action .....</b>	<b>11</b>
Government action.....	13
<b>The impact: methodology .....</b>	<b>16</b>
Sampling .....	17
<b>The results: impact analysis .....</b>	<b>19</b>
Return on investment (ROI).....	19
Costs .....	20
Benefits .....	21
Impact on food security.....	22
<b>Community perspectives .....</b>	<b>26</b>
What was the impact of Typhoon Noru? .....	26
What early warnings were received, and how were they acted upon? .....	27
How were the cash and watertight drums used? .....	27
<b>Impact stories .....</b>	<b>30</b>
<b>Lessons learned .....</b>	<b>33</b>
Anticipatory Action is not new.....	33
The link between disaster risk reduction and Anticipatory Action is key .....	34
Simulations are critical, if not essential.....	34
Triggering for typhoons is tricky but doable.....	34
More research on Anticipatory Action cash assistance needed .....	35
Community perspectives: How can we do better next time? .....	35
<b>Notes.....</b>	<b>38</b>



# Executive summary

Anticipatory Action is a growing concept in Viet Nam. Over the past few years, the partnership between the Viet Nam Disaster and Dyke Management Authority (VDDMA), the Food and Agriculture Organization of the United Nations (FAO) and the European Union has invested into exploring the possibilities for strengthening systems to act ahead of natural hazards – particularly typhoons and droughts – in the country.

This paper highlights the progress made towards this mission through an activation in September 2022, ahead of Typhoon Noru. Through a collective effort, waterproof drums and multipurpose cash assistance were provided three days before Typhoon Noru made landfall in the central provinces of Viet Nam. This enabled families, identified from the list of poor and near poor households in regular social protection programmes, to safeguard their food security and assets ahead of the shock.

Shortly after, an impact assessment was carried out through a mixed methods approach which observed improvements in food security, reduction in negative coping mechanisms, and increased sense of security from those who received support prior to the typhoon's landfall. For every United States dollar invested in the distribution of waterproof drums, families were able to save USD 0.46 in avoided losses. If the entire shelf life of the drums is considered, the return on investment (ROI) would easily increase to USD 4.60 over ten seasons. Voices from communities and local authorities also provided pathways for further refinement on targeting and activities, scalability and strengthening the approach within Viet Nam's disaster risk management architecture.

The activation showcase provided valuable insights, highlighting the efficacy of taking pre-emptive action before a typhoon makes landfall. The feedback received from communities overwhelmingly emphasized the dignified nature of this approach. Anticipatory actions proved instrumental in ensuring that communities in Viet Nam had sufficient food, protected their health and enabled children to continue attending school.

Despite the successes observed, critical lessons were also derived from the study, indicating areas of improvement for future endeavours. Firstly, it was noted that the interventions were implemented on a small scale, necessitating further exploration of how to maximize the impact of anticipatory actions. This enlargement of scope will help ascertain its potential to generate more substantial benefits.

Moreover, there is a need to delve deeper into the study of cash-based interventions to comprehend their cost-benefit effectiveness and their significant role in mitigating disaster impacts. Understanding the intent and potential of this modality is crucial for optimizing its application.

Lastly, it is imperative to explore the possibility of refining or altering actions to assess their influence on the short-term ROI. By doing so, we can fine-tune anticipatory actions and enhance their overall efficiency in disaster risk management. Incorporating these key lessons into future initiatives will undoubtedly strengthen the effectiveness of Anticipatory Action, enabling it to have a broader and more impactful reach, ultimately benefiting vulnerable communities in times of crisis.





# Introduction

The intensity and frequency of natural hazards are increasing, mainly due to climatic changes, which are leaving in their wake an unprecedented level of humanitarian needs. As a result, Asia and the Pacific experiences the highest levels of disaster-related displacement worldwide, which is principally driven by weather-related hazards such as monsoon rains and tropical storms.<sup>1</sup>

Not surprisingly, the impact of these disasters on local economies and people's lives and livelihoods has increased as well. In some of the worst-hit areas, it can seem unrelenting. One crisis will follow another, stripping away hard-earned but limited assets of the poorest and most vulnerable. Recurrent crises are also depriving people of their self-reliance and dignity.

Globally, expanding needs, competing priorities and limited resources call for new approaches to make humanitarian interventions as effective as possible. This includes new ways of ensuring that the negative consequences of hazards are limited before they can grow into even more devastating and costly disasters. That is why FAO and the Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) have been long-time advocates of Anticipatory Action.

By strengthening country-specific Anticipatory Action systems, we can monitor and forecast priority hazards, anticipate severe shocks and trigger actions once the predicted impact exceeds a predefined threshold. That is when DG ECHO and FAO's partnership comes into play. Recognizing the effectiveness of Anticipatory Action, DG ECHO and FAO launched in 2021 a three-year Pilot Programmatic Partnership on increasing capacities and scale for Anticipatory Action through social protection systems, among others. In Asia and the Pacific, the partnership focuses on regional collaboration and normative guidance building, which is complemented by implementation across five countries: Bangladesh, Lao People's Democratic Republic, the Philippines, Pakistan and Viet Nam. Critically, the partnership ensures funds are readily available at the country level when signs point towards a looming crisis.

The study provides essential evidence to enhance future activations, addressing important aspects such as reaching a broader population with our actions, facilitating the government's scaling up of anticipatory actions, and ultimately integrating this approach into the disaster risk management framework.

This study is a significant contribution to a key pillar of our partnership: evidence generation. As one of the pioneering activations in the Asia and the Pacific region for typhoons, it offers valuable insights and lessons that can inform the potential and avenues for scale and growth, crucial for supporting future activations. These lessons learned play a pivotal role in shaping future planning and collaboration with the government to integrate the Anticipatory Action approach into mainstream practices. Moreover, the study provides essential evidence to enhance future activations, addressing important aspects such as reaching a broader population with our actions, facilitating the government's scaling up of anticipatory actions, and ultimately integrating this approach into the disaster risk management framework.



## Intervention areas (provinces)

- Quang Binh
- Quang Tri
- Thua Thien Hue
- Quang Nam
- Quang Ngai
- Phu Yen

It is hoped that the success of the Anticipatory Action ahead of Typhoon Noru will help promote a shift in policy and fully integrate Anticipatory Action into Viet Nam's national disaster management.

Components of an Anticipatory Action system in Viet Nam are not new, and early warnings have been acted upon for years. What is innovative is making the approach more systematic and linking it to flexible financing for scalability and application of more robust actions.

This was fundamental in the case of Viet Nam. In late September 2022, alongside VDDMA, FAO activated its Anticipatory Action protocol ahead of Typhoon Noru for the central provinces of Quang Tri and Thua Thien Hue. With the activation of its Anticipatory Action protocol confirmed three days before landfall, FAO with provincial and communal governments coordinated the implementation of a range of actions to protect the food security and livelihoods of at-risk households.

This study documents the outcome of acting early to protect these families in central Viet Nam, highlighting the cost-benefit as well as listening to government and community perspectives on what worked and what we can do better. This activation – the first of its kind in Viet Nam – aims to inspire further national and provincial action towards the Anticipatory Action approach in the future.

A mixed methods approach was used for this analysis, including household surveys, focus group discussions and key informant interviews. These were deployed with households that received inputs and those that did not. By doing so, we can measure the difference between the two and critically understand the ROI, which, in plain terms, assesses the value for money of acting before an anticipated crisis has become a disaster. Using the mixed methods approach also provides a deep dive into the lessons learned from a community and household perspective. These voices help us ground the Anticipatory Action approach to those on the frontline, learn from their lessons, and apply them for future efforts.



© FAO

## Nature of typhoons in Viet Nam

Due to Viet Nam's geographic location in the northwestern Pacific, along the East Sea, it is often impacted by typhoons. On average, up to six tropical cyclones make landfall on Viet Nam's coastline every year, usually between June and December. Past typhoons have had devastating effects on lives and livelihoods. In particular, the northern hemisphere autumn tropical cyclone season intersects with the peak of the monsoon season in central provinces. This often brings torrential rain and flooding to the region. As the summer rice harvest season occurs from late May/June to August/September and the winter harvest from December to April, some areas experience significant economic losses when typhoons hit.

It is becoming clear that climatic changes, combined with the rapid development of the Viet Nam coastline, are contributing to the risk of typhoon disasters in the country. Sea level rise, which leads to coastal erosion and mangrove degradation, is diminishing the natural shield to these events and exposing low-lying and key production areas used for farming and fisheries.

For families living along the coast, particularly in central Viet Nam, typhoons are part of their lives. When a typhoon passes, it often brings high water levels, huge waves, strong winds and heavy rainfall. These water levels, in combination with sea tides, can induce overtopping and erosion of dykes and sand dunes. This can lead to flooding in farmlands, with water masses destroying crops and in extreme cases, causing loss of life and property. Such events puts people's lives and livelihoods at risk, as hard-to-replace assets are washed away or destroyed, and animals are left

hungry and sick. Farmers living along the coast are the most vulnerable, and many of them tend to be among the country's poorest.

Each year, farmers, fishers and livestock owners prepare themselves as best as they can. Many now have flood-proof houses to combat the issue of rising water with these events. An analysis of the number of houses totally damaged by typhoons in Viet Nam from 2010 to 2022 shows that South and South Central Viet Nam are, on average, five times more impacted than North and North Central Viet Nam. Particularly for families living close to rivers or the coast, these resilient shelters provide a means to stay safe, dry and high above the rising waters. Shelters are also crafted for livestock, particularly poultry, to keep them out of harm's way. However, many shelters are makeshift and have issues with leakages or have even collapsed in the face of strong winds. It can often take up to a week for the waters to recede, and for families to begin assessing the damage and rebuilding or repairing what has been damaged or lost.

VDDMA is seasoned in supporting communities ahead of these events. With excellent early warning systems installed throughout the communities across the country, timely messages are issued before a potential threat, and up to three to five days before the event to allow families to take action. This is paired with volunteer services visiting vulnerable families, supporting evacuation to higher ground and shelters (particularly the elderly and people with disabilities), and moving assets – both personal and livelihood-based – ahead of the storm to avoid flood damage. As the typhoon approaches, curfews are imposed to keep communities safe.

People across Viet Nam have shown remarkable resilience in the face of these recurring and increasingly extreme weather shocks. But sometimes, the intensity and power of these typhoon events exceed their ability to cope, particularly due to external factors stirred by the economic crisis and the pandemic, which has stripped families of coping capacities. Typhoons can come as a shock to many as hard-earned development gains can be lost overnight. Boats and fishing gear can be destroyed, and fishponds swept away or damaged. Rice paddies, when in critical growing stages, can be damaged and entire harvests wiped out. Livestock mortality is also an issue where 40 percent of pigs, cattle and poultry are raised in the central region of Viet Nam. In the worst cases, typhoons can result in the loss of human lives.

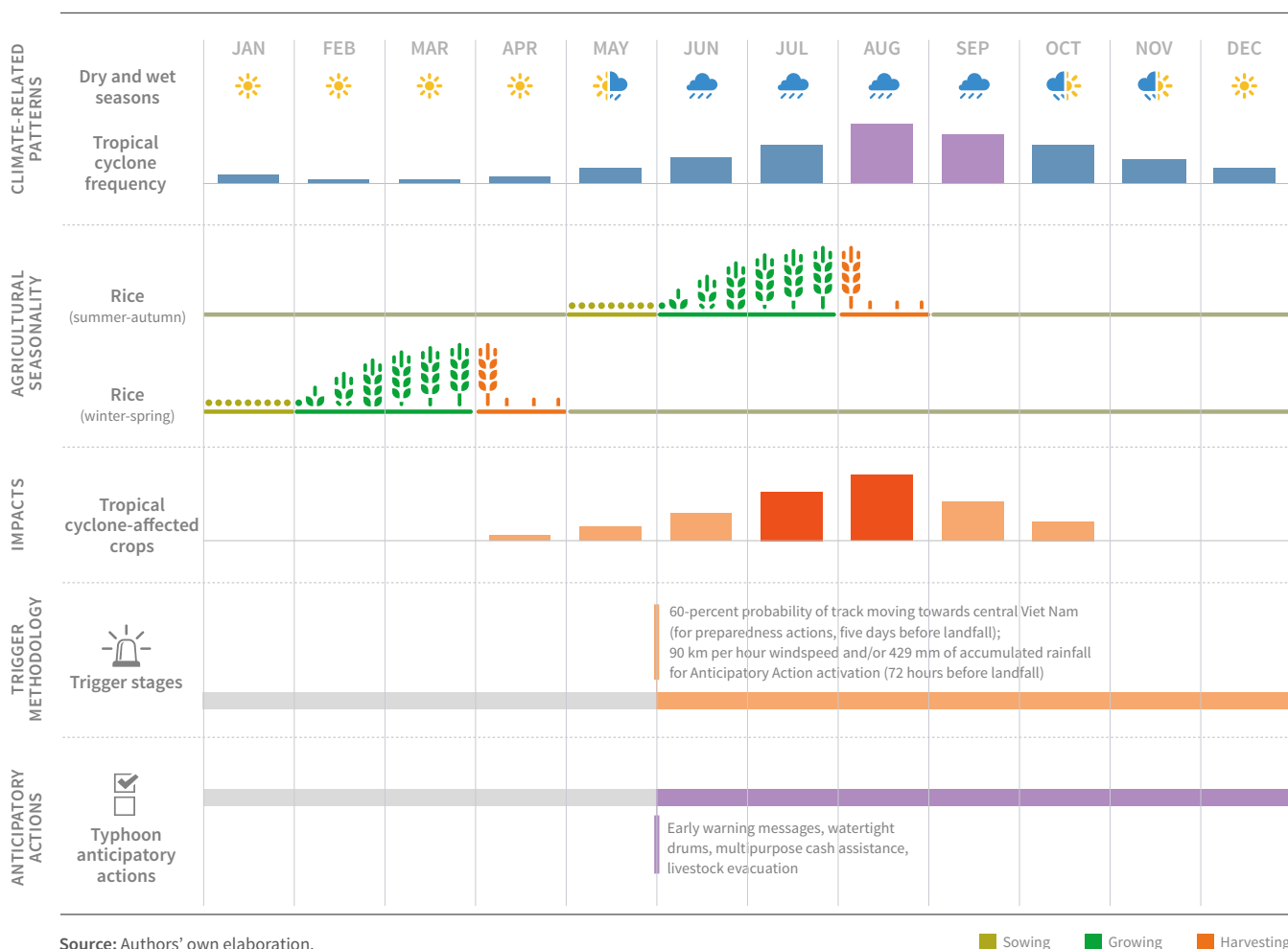
To bounce back, in the worst cases, families will have to take out crippling loans – often under unfavourable conditions – to start over, making their existence even more fragile than before. This ongoing cycle of loss and – often only partial – recovery can trap families in poverty and hold back their long-term development.

# Typhoon crisis timeline for central Viet Nam

When designing any Anticipatory Action protocol, it is critical to first examine how seasonal weather patterns coincide with important periods in Viet Nam’s agricultural cycles and determine what activities would be most helpful to each at the time of intervention. For this, crisis timelines proved to be a valuable analytical tool to understand the evolution of a hazard and its impacts on people’s livelihoods. More specifically, these timelines highlight when and how hazards have affected people in the past, providing a way to see who and what a potential hazard is likely to impact. While each shock is unique and uncertainties always remain, crisis timelines can help actors identify appropriate early warnings and adapt anticipatory actions to the local context.

The timeline for central Viet Nam shows that the critical months for Anticipatory Action interventions in agriculture and food security would be August and September. This is when the typhoons’ track may shift towards the central provinces and coincide with rice harvesting time, potentially leading to a bigger impact on the agriculture sector and food security.

Figure 1. Crisis timeline for typhoon Anticipatory Action in central Viet Nam



Source: Authors’ own elaboration.

■ Sowing ■ Growing ■ Harvesting



© FAO/ Nguyen Minh Duc

## The plan: building an Anticipatory Action protocol

Building an Anticipatory Action protocol is the first step in-country towards bringing the idea to life. In Viet Nam, the process began in late 2021 with consultations with various communities and local authorities to understand priority needs. This formed the basis for the work to begin. FAO, along with VDDMA at the national and provincial levels, got to work. This primarily involved setting up the triggers to know when to act based on the science and the selection of the anticipatory actions themselves to ensure they could protect or mitigate the impact on food security and livelihoods.

### What did the triggering system look like for Typhoon Noru?

Working with VDDMA and consulting with the Viet Nam Red Cross Society, FAO based the triggering system for typhoon Anticipatory Action in central Viet Nam on the following two key pieces of information to help determine when to act:

- Readiness actions must be initiated when the European Centre for Medium-Range Weather Forecasts (ECMWF) shows a typhoon track that is going to hit any of the project's target provinces (Quang Binh, Quang Tri, Thua Thien Hue, Quang Nam, Quang Ngai and Phu Yen).<sup>i</sup>

<sup>i</sup> The project started in the first year with three provinces of Quang Binh, Quang Tri and Thua Thien Hue. From the second year, it will then expand to the three provinces of Quang Nam, Quang Ngai and Phu Yen, based on the recommendation of and agreement with the national partner, VDDMA.

- Anticipatory Action shall be activated 72 hours before landfall if there is a high likelihood of the typhoon passing any of the two thresholds based on Viet Nam National Centre for Hydro-Meteorological Forecasting (NCHMF) forecast (cross-checked with ECMWF and other regional forecasts):
  - a wind speed of at least 100 km per hour<sup>ii</sup> upon landfall; and/or
  - an accumulated rainfall of at least 429 mm in 72 hours.

These points of information were the critical gauges, based on historical analysis and research, to determine the best time to act to mitigate typhoon impacts.

### How were the actions selected?

When designing and selecting Anticipatory Action initiatives to match the timeframe in the triggering system, it is essential to consult community and government actors. This ensures FAO is rooting its work on community needs and available information about the impact. Prior to Typhoon Noru, these processes enabled a repository of actions to be developed, tested operationally and quickly implemented when the trigger was met.

In developing any Anticipatory Action protocol, community consultations are key to understanding the needs and wants of those who experience the natural hazards, such as typhoons. Effective community consultation is a participatory process that underpins genuine community input and direction. It enables communities to articulate their own concerns and identify the appropriate responses and solutions to problems that affect them. This is at the heart of the selection process of Anticipatory Action to ensure the meaningfulness and usefulness of initiatives during crisis.

These consultations were conducted early in central Viet Nam. The consultation process started with a regional review involving over 40 disaster risk management and agricultural government officials coming from both the national and provincial levels. The review was followed by three provincial and nine communal consultations with nearly 400 participants. Together, their opinions and perspectives on what can be done ahead of a typhoon were drawn out through the method of theory of change. A theory of change is a method that explains how an intervention or set of interventions is expected to lead to a specific development change, drawing on a causal analysis based on available evidence.

One outcome of the consultations was a list of suggested Anticipatory Action initiatives that are based on local contexts and practices. These anticipatory activities were then scored by project technical experts from FAO and the Government of Viet Nam, according to the seven criteria for prioritizing actions advised under FAO's e-learning course *Developing an Anticipatory Action system*.

---

ii Since the activation, this threshold has been considered to rise to 120 km per hour, based on the activation for Typhoon Noru.

As a result, the following four highest-ranked Anticipatory Action initiatives were selected:

- **Dissemination of early warning messages and key preparedness activities**  
Along with the use of Anticipatory Action assistance, this is crucial to ensure that the target community is aware of the approaching typhoon and the need to act.
- **Provision of watertight plastic drums to store personal and agricultural assets ahead of the storm**  
This has proven to be beneficial in other case studies, like [Bangladesh](#), where water, food, seeds, personal records and animal feed were stored and kept dry as water levels rose.
- **Provision of multipurpose cash assistance**  
This aims to complement the vulnerable community's regular food stock for emergency, which consists of cheap and easy-cook foods such as instant noodles, rice, etc. These are meant to keep families from hunger rather than ensure sufficient nutrient intake, but multipurpose cash assistance will give the most vulnerable households access to more nutritious foods such as dry provision, canned meat, canned fish, sausages, dried fish, dried shrimp, milk, etc. The calculation of the multipurpose cash transfer value (USD 48) was based on a focus group discussion with households and a market assessment that aimed to provide a transfer value to cover the costs before the typhoon made landfall. The multipurpose cash assistance will help ensure the food security of the most vulnerable households during evacuation and/or isolation (normally 7–10 days) or after emergencies when the local markets are not yet fully operational and food prices go up (usually seven days after the event). Providing multipurpose cash assistance ahead of time encourages families to purchase food and keep it safe in the watertight drums so they have enough to eat before, during and after the shock.
- **Setting up a temporary shelter with fodder for animal evacuation**  
Access to farms can be compromised when roads and transportation are destroyed by typhoons. In Viet Nam, damage to infrastructure is the leading cause of economic losses. Having sites for temporary animal shelter allows farmers to feel confident that their cattle are safe and have access to food instead of being left in the field, prone to injury or sickness.

In August 2022, FAO and VDDMA carried out a two-day simulation exercise in Quang Tri province to test the validity of the four Anticipatory Action activities and to consult further with communities to ensure they were achieving the mitigative and protective intent. With government partners, FAO conducted a tabletop exercise and testing actions in the preparedness and activation phases based on the near-real disaster scenario. In total, 185 people from the local authorities and communities participated. Among them, 40 households received watertight drums, 30 received



nutritious food packages and 20 practised livestock evacuation. Lessons from the simulation exercise were captured through the post-simulation debriefing session, and provided the basis for future planning and logistics. One key lesson was to provide cash instead of the pre-arranged nutritious food packages. The participating families suggested this was a faster and more proactive way to prepare suitable foods that can be tailored to each family, rather than a fixed package.

### What activities were carried out to prepare for the activation?

In what is referred to as “peace time,” preparedness activities were carried out with communities and local governments as the typhoon season approached. FAO used this time to revisit key logistics, as well as communication and operational lines, of the Anticipatory Action approach in Viet Nam:

FAO worked with the VDDMA and the provincial Committee for Natural Disaster Prevention and Control (CNDPC) to develop provincial standard operating procedures that will guide the implementation of the Anticipatory Action initiatives and clarify the roles and responsibilities of relevant provincial agencies in the activation of Anticipatory Action.

A market assessment was carried out to survey the availability of and access to local markets before and after a typhoon and flooding, and to identify potential suppliers and manufacturers of in-kind assistance such as watertight drums and livestock evacuation tents. This process led to the design and production of the first livestock evacuation tent that was tested in a simulation exercise.

The standard operating procedure was tested in a simulation exercise in August 2022, which involved a tabletop exercise for coordination and information dissemination, and a field exercise to implement the Anticipatory Action initiatives such as providing food packages and watertight drums and installing livestock evacuation tents.

A communication channel was established using Zalo<sup>iii</sup> group to share the early warnings and relevant information for activation, beneficiary targeting, distribution timeline, etc. The group comprises representatives from FAO, VDDMA, provincial CNDPC and key response persons in the target communities.

---

iii Zalo is an over-the-top application for messenger and the most popular app in Viet Nam.



EUROPEAN UNION  
HÀNH ĐỘNG SƠ TRƯỚC THIÊN TAI  
TRUNG BẢO QUẢN  
LƯƠNG THỰC THỰC PHẨM  
HÀNG TRẠNG KHÔNG BỀN

# The reality: from the first warning to action

With the planning done, local authorities and FAO were well poised to act ahead of the upcoming typhoon season. In the early morning of 22 September 2022, the first warning signs of a typhoon brewing were signalled across the team. The information was closely shared among members of a communication group consisting of FAO, DG ECHO and VDDMA, which used the information to read the situation clearly and make an informed decision for action. The following timeline shows the information received from the first signal (22 September 2022) all the way to impact (28 September 2022).

Thursday, 22 September 2022:

## **Monitoring begins**

The monitoring for Typhoon Noru began six days before landfall. The first forecast that showed concerning signs was released on 22 September by ECMWF, which pointed at a possible landfall in the Quang Binh province of Viet Nam in six days. The predicted rainfall at that time was not alarming – below 30 mm of rain in 72 hours – and the expected wind speed was that of a tropical storm. The team decided to closely monitor the situation and see how it would evolve.

Friday, 23 September 2022:

## **Preparedness measures are activated**

The track of Typhoon Noru was confirmed, with a possible landfall in central Viet Nam on 27–28 September. By noon of 23 September, ECMWF was predicting that Tropical Cyclone Noru could reach the typhoon category at landfalls. Hence, the initiation of preparedness actions was approved, with close monitoring of the conditions.

Saturday, 24 September 2022:

## **Typhoon Noru's track is confirmed and triggers are reached**

Four days before the typhoon made landfall, it was confirmed that it would hit provinces in central Viet Nam, as predicted. There was a strong likelihood it would occur during the early morning of 28 September. According to ECMWF, wind speed would pass the trigger threshold (100 km per hour), but the rainfall would remain below the threshold (429 mm in 72 hours).

In agreement with VDDMA, FAO initiated its Anticipatory Action activities for the typhoon 72 hours before landfall. These included the finalization of the list of beneficiaries, procurement of 600 watertight drums, arrangement of contract with the financial service provider, development of logistics plan (delivery of watertight drum, cash payment) and creation of a communication plan.

**Sunday, 25 September 2022:**

**Implementation of Anticipatory Action activities is approved**

With the trigger threshold met for wind speed and the 72 hours track to the central provinces confirmed overnight, the activation of the Anticipatory Action protocol was confirmed with DG ECHO. At that time, the rainfall forecast was still below the predefined threshold. FAO continued rolling out the intervention while closely monitoring the situation. VDDMA scaled up early warning and support to communities.

**Monday–Tuesday, 26–27 September 2022:**

**Anticipatory Action initiatives are implemented**

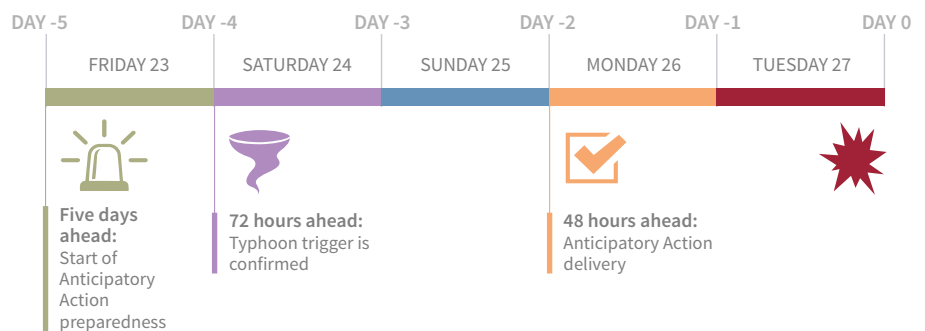
Within a 48-hour period, the Anticipatory Action activities (early warning messaging, watertight drums distribution and cash distribution) were implemented in six communes of Quang Tri and Thua Thien Hue provinces (three communes in each) – the target provinces for the Anticipatory Action protocol the closest to the predicted landfall of Typhoon Noru. The country team was able to complete the implementation on the morning of 27 September, less than 24 hours before landfall.

**Wednesday, 28 September 2022:**

**Typhoon Noru makes landfall**

Typhoon Noru made landfall at 1 a.m. on 28 September 2022 between Da Nang and Quang Nam provinces, with wind speed of 117 km per hour, equivalent to a Category 1 hurricane<sup>iv</sup> (and more than 429 mm of rain in Quang Nam).

**Figure 2. Timeline of Anticipatory Action interventions for Typhoon Noru**



Source: Authors' own elaboration.

<sup>iv</sup> For more information on the typhoon category classification guidance, visit <https://www.nhc>.

On a no-regrets basis,<sup>v</sup> when the triggers for Typhoon Noru were met, the team worked together to accomplish the following Anticipatory Action interventions within a two-day window, serving 600 households or over 2 240 people in Quang Tri and Thua Thien Hue provinces:

- distributed 600 waterproof drums for the protection of food stock and valuable assets – 300 in three communes in Thua Thien Hue, 300 in three communes in Quang Tri, and an additional 40 for the simulation exercise in August;
- provided multipurpose cash transfer of USD 48 per household to support 300 vulnerable families in Quang Tri in their Anticipatory Action activities ahead of the typhoon's impact; and
- installed a livestock evacuation shelter in the Trieu Do commune in Quang Tri province.

The first two actions were carried out at the local commune centres, but the third action was suspended. While the livestock shelter was ready to be deployed in pre-selected sites that were safe from flooding and strong winds, it did not proceed as floodwater was manageable in Quang Tri. The primary concern became the strong winds that were predicted to hit the region, along with the water surges that would affect those living near the coastline and river basins.

Families were selected based on the existing list of social protection beneficiaries. This included categories such as the poor and near poor, older people, female-headed households, children under five, people living with a chronic illness and people with disabilities. While all families met the project criteria, the authorities tended to prioritize the existing beneficiaries of the regular social protection programme (older people, chronically ill, people with disabilities), and some poor and near poor households were not targeted.

The pre-approval of funds from DG ECHO was critical for this situation as it allowed FAO to work immediately and be ready to act when there was still room to mitigate the effects of the hazard. For FAO, it meant staff could purchase and distribute essential items to farmers before typhoon conditions could cut them off.

## Government action

The Government of Viet Nam is no stranger to Anticipatory Action. In both Quang Tri and Thua Thien Hue provinces, government authorities implemented the instructions of CNDPC. This included participating in online and face-to-face meetings related to Typhoon Noru's activities and issuing documents directing the response to localities in the provinces.

---

<sup>v</sup> Following Anticipatory Action principles, acting with a no-regrets approach is paramount. Therefore, if the event did not occur, FAO, with the support of DG ECHO, would still conduct the activities.



Specifically, the Thua Thien Hue Provincial People's Committee and provincial CNDPC issued a series of official dispatches from 23–27 September on proactively communicating the potential impact of Typhoon Noru to localities in the province. In a similar to Quang Tri Provincial People's Committee and provincial CNDPC also promptly issued dispatches and documents directing action before Typhoon Noru reached the East Sea. These are the highlights of the key actions in the provinces:

- all schools were closed from 12.45 p.m. on 27 September;
- fishers were strictly forbidden to set sail from 7 p.m. on 25 September in the affected provinces, and more than 4 360 fishing boats with over 17 450 crew members had safely anchored by the afternoon;
- over 18 600 households (nearly 60 100 people) were evacuated from high-risk areas to safe places since on the morning of 27 September;
- a review of the public infrastructure's status was conducted and all available forces were mobilized to prepare for typhoon response; and
- traditional markets were closed from 3 p.m. on 27 September and people were requested not to go out (the road was completely blocked) from 9 p.m. on 27 September.

After the typhoon passed, the evacuees returned to their homes and all normal activities resumed from 12 p.m. Traditional markets resumed trade after 1 p.m. on 29 September.

While Anticipatory Action is growing in Asia and the Pacific in general and Viet Nam in particular, it is important to acknowledge the work already contributing to this area. The Government of Viet Nam has been successfully warning and supporting their communities ahead of typhoons for many years. What Anticipatory Action aims to achieve is to scale up this approach by mobilizing more investments to protect the lives and livelihoods of the most vulnerable people ahead of typhoons.



# The impact: methodology

To know exactly how effective Anticipatory Action was in Viet Nam, FAO and VDDMA returned to the communities six weeks after the activation. Evidence on Anticipatory Action is in demand, and a **recent evaluation** on the approach in the Association of Southeast Asian Nations strongly recommends that programming incorporate evidence generation. This study aims to contribute to this need, and it did so by employing a mixed methods approach. This involved collecting both quantitative data through a household survey and qualitative data through focus group discussions and key informant interviews. FAO spoke to and surveyed those who benefited from the interventions (beneficiary groups) and those who did not (non-beneficiary groups/control groups). To select beneficiary and non-beneficiary households, FAO adopted the following criteria:

- similar socioeconomic and livelihood conditions;
- same location and agro-ecological zone;
- same hazard intensity affecting the households during the period of analysis; and
- equal gender representation.

The household survey was rolled out six weeks after the activation in October 2022 while the focus group discussions and key informant interviews came later, in November 2022. The research teams travelled to the provinces of Quang Tri (Hai Phong, Trieu Do and Trieu Trach communes) and Thua Thien Hue (Huong Xuan, Quang Phu and Quang Thai communes). Below is a snapshot of the data collected:

- **Qualitative data (household surveys)**

In both provinces, 217 people were surveyed: 115 who participated in the pilot and 102 who did not. The gender-disaggregated respondents are presented in Table 1.

**Table 1. Gender-disaggregated breakdown of respondents**

Province	Group	Women	Men	Total
Quang Tri	Beneficiaries	43	16	59
	Non-beneficiaries	29	22	51
Thua Thien Hue	Beneficiaries	44	12	56
	Non-Beneficiaries	30	21	51

Source: Authors' own elaboration.

- **Qualitative information (focus group discussions and key information interviews)**

In total, 149 people were interviewed (67 women and 82 men) across 21 focus group discussions in the two provinces. In addition, 11 interviews with local authorities and the Viet Nam Red Cross were conducted. Most participants described themselves as farmers with the primary crop of focus being rice, but vegetables such as groundnut, cassava and beans were also grown en masse. Raising and selling livestock was common



among interviewees bringing up chickens, ducks, buffalo, cows and pigs alongside fishing and aquaculture. Non-agriculture-based livelihoods were commonly described as manual labour, such as working in a factory, in construction or in handicraft collectives (making bamboo bags and knitting clothes). Elderly participants cited relying on the national social protection systems for retirees where they receive around USD 15 per month to cover their expenses.

## Sampling

The number of households in the beneficiary and non-beneficiary samples is based on the number of households targeted by the Anticipatory Action project. To be representative, the sample size should be calculated based on a relatively high confidence level. As each location included 600 beneficiaries, a sample of 115 beneficiary households was used, with an additional 102 for the control group, all randomly selected from poor and near poor households in each location. This is to reflect the socioeconomic characteristics of the samples, as highlighted in the criteria.

The sample size delivered an 8.2 percent margin of error. While a 5 percent margin of error is normally used for sample populations, time and budget limitations compelled a minimal deviation, which resulted in a slightly higher margin of error in the case. As much as possible, this should be reflected across the percentage of those who received support. If data is not yet readily available this can be changed at a later stage prior to data collection.

In both locations, gender division within the beneficiary sample is slightly more skewed than in the control. In Thua Thien Hue, male respondents represented 79 percent of the sample and 59 percent of the control, while in Quang Tri, male respondents represented 72 percent of the sample and 56 percent of the control.



# The results: impact analysis

With the mixed methods approach, a range of tools were utilized to understand the impact of the Anticipatory Action interventions. On the quantitative side, the team conducted an ROI case study to understand the cost-effectiveness of the approach. This was complemented with data on the impact on food security, resilience and coping mechanisms. Such data was given depth by conversations with families and communities on the frontline to unpack the sociological impact of the typhoon.

## Return on investment (ROI)

The ROI<sup>vi</sup> analysis focuses on only one of the interventions: distributing waterproof drums. The method measures the ratio of the direct benefits of the Anticipatory Action interventions and the cost of their implementation. Because of the impact of the typhoon and the profiles of beneficiaries, cash interventions were not included in the analysis due to methodological challenges.<sup>vii</sup> Consequently, the analysis captured only one part of the project. Below are the highlights of the analysis from 115 beneficiaries and 102 controlled households that participated in the waterproof drum distribution.

For every USD 1 invested in Anticipatory Action in Viet Nam, families received a return of USD 0.46 in direct benefits.<sup>viii</sup> These benefits included food security and the safeguarding of personal assets. The ROI ratio in Viet Nam was considerably lower than estimated, compared with previous Anticipatory Action interventions. In Mongolia, for example, animal feed distribution ahead of harsh winters has generated benefits worth more than seven times the original investment. The results in Viet Nam mirror the findings of previous studies on Anticipatory Action for sudden-onset hazards.

This is now the second impact analysis focusing on Anticipatory Action for sudden-onset events, the first being Bangladesh where every USD 1 invested resulted in USD 0.80 in direct benefits. The comparatively low ROI in Viet Nam does not mean the intervention was a failure. While the action did not fully pay for itself, it achieved its goal of protecting people and their livelihood assets against impending typhoons. Over time, this ROI will likely increase.

For every USD 1 invested in Anticipatory Action in Viet Nam, families received a return of USD 0.46 in direct benefits. These benefits included food security and the safeguarding of personal assets.

- vi The ROI analysis measures the ratio of the direct benefits of the anticipatory actions and the cost of their implementation. In plain terms, it is the value for money in acting before an anticipated crisis has become a humanitarian disaster. While FAO wanted to have and understand quantitative information to guide its future work, it also wanted to know what the people thought about what it had done.
- vii FAO is developing a methodology to include cash components in the ROI analysis to assess accurately how cash for work and multipurpose cash assistance modalities lead to positive economic outcomes. These will be incorporated within future analyses once the methodology has been refined and approved.
- viii FAO's ROI for Anticipatory Action projects assesses outcomes over a specific period. Normally, the ROI is assessed over multiple years, using discount rates and net present values of returns, as has been done in past resilience projects. However, the focus of this analysis is on the immediate effects of anticipatory actions in mitigating hazard impacts. Therefore, the accumulated medium- to long-term benefits are not included. Consequently, the ROI is likely an underestimation of the total long-term benefits of the interventions as we only assess outcomes related to the specific shock that triggered action.

From 2005 to 2020, there have been 21 tropical storms and typhoons in central Viet Nam. That means at least one major event has occurred every year in the past 15 years. As waterproof drums have a lifespan of over ten years, it is assumed that beneficiaries will be using the drums they received for future incidents, so the benefits far outweigh those presented in the above cost-benefit analysis. If we multiply the costs saved (USD 19.69) by the number of typhoons of similar intensity that could affect beneficiaries over a ten-year period, the same drums will save nearly USD 200 worth of goods.

Over the course of three years, we would see the ROI for every USD 1 investment increase from USD 0.46 to USD 1.38 in avoided losses and added benefits. Over a ten-year period, this USD 1 investment will have a return of USD 4.60 in avoided losses and added benefits. Even if the immediate benefits of drums in the face of Typhoon Noru did not outweigh the costs, the cumulative benefits over the drums' lifespan will outweigh the initial investment by almost five times. The use of the drums during non-emergency, i.e. protecting seeds or food from rotting, is not calculated in the ROI.

The timing of the project review also matters. Returning to beneficiaries just a month after a major disaster to assess the impact of the aid may be too soon to capture, quantitatively, the full benefits derived from the inputs. With slow-onset disasters that often last months, the benefits have more time to materialize before data are collected. As the interventions are meant to preserve durable assets, most of the benefits accrue over a longer time frame. Therefore, the cost-benefit ratio will likely be higher and greater than USD 1 over a longer period.

Quantifying the benefits of Anticipatory Action in a sudden-onset event may ultimately require agencies to collect and analyse data more than once following the intervention. While it is important to collect data right after the hazard to explore the effectiveness of Anticipatory Action in mitigating the immediate impact of shocks (e.g. how many animals survived and how many seeds were saved for farming), follow-up studies are also essential to measure the full benefits of the intervention. While such studies would be valuable for all Anticipatory Action interventions, they are particularly important for better understanding how acting early affects resilience and well-being in sudden-onset events.

## Costs

As the ROI only measures the effectiveness of the waterproof drum intervention, costs of the cash grant have been removed from the ROI analysis. Further, as the 600 beneficiaries of the waterproof drums accounted for two-thirds of the project recipients, an assumption of a multiplier (two-thirds) accounted for the rest of the project's operational costs (travel and distribution events). In total, costs came to USD 41.35 per household, with the cost of the drums accounting for a large chunk (USD 38.30).

**Table 2. Total cost of intervention per household**

Item	Quantity	Unit price (USD)	Total amount (USD)	Cost of drum (USD)/household
Drums	600	38.18	22 980	<b>38.3</b>
Cash grant	300	42.32	12 738	n/a
Distribution events	1	160.36	1 112	<b>1.23</b>
Travel	5	1108.68	1 635	<b>1.81</b>
<b>Total cost per household</b>				<b>41.35</b>

Source: Authors' own elaboration.

## Benefits

Beneficiaries said the main items they stored were food, clothes and important documents that would have otherwise been damaged or destroyed. Based on the input from beneficiaries, the average value of food they stored came to USD 16.09; clothes, USD 23.70; and other assets including important documents, USD 12.70. These average values were multiplied by the percentage of households that used waterproof drums for these goods: 57 percent for food items; 31 percent for clothes; and 25 percent for other assets. The total value of this came to USD 11 815.10 which, when divided by the number of beneficiary households, came to USD 19.69 per household. This brings a cost–benefit ratio of 1:0.46, which means for every USD 1 invested into the waterproof drum component of the project, beneficiaries avoided USD 0.46 of losses. While this is less than USD 1, it does not include other long-term benefits.

**Table 3. Cost savings per household**

Food saved	Average value	Percentage of households that stored items (%)	Total savings for beneficiaries (USD)
Beneficiaries (drums only)	16.09	57	5 501.19
Clothes saved	23.70	31	4 409.08
Documents	12.7	25	1 904.84
<b>Total</b>			<b>11 815.10</b>
<b>Per household</b>			<b>19.69</b>

Source: Authors' own elaboration.



### Impact on food security

To assess how the project affected food security outcomes, beneficiaries were asked about the types of food they consumed and any negative coping mechanisms they adopted when dealing with the impact of the typhoon. The same questions were asked to a control group, and t-tests were performed to see if the differences between the two groups were statistically significant.

In the past, FAO has generally used a recall period of seven days when asking specific questions on food security. However, it was difficult for beneficiaries to recall exactly how many times in the past week specific food groups were consumed. Thus, beneficiaries were asked about

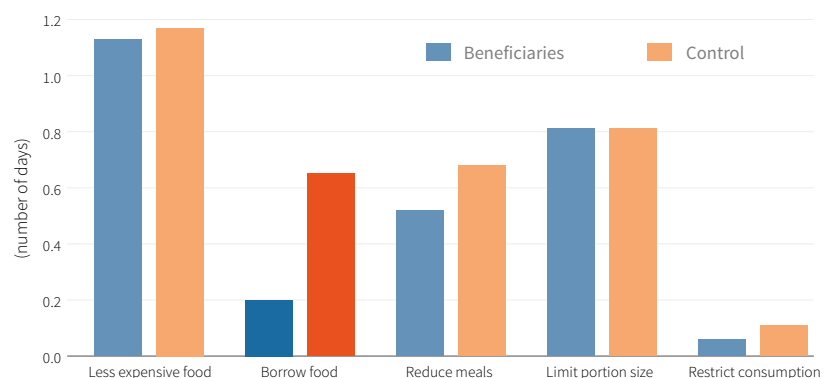


the types of food they consumed within the past 24 hours to ensure the accuracy of their response. Results showed that beneficiaries were significantly less likely to consume cereals, roots, fruits, legumes, sugars and condiments. This is somewhat surprising, but as this was only over a 24-hour period, there may be issues with the reliability of such differences in the consumption patterns given the short recall period.

Questions regarding the negative coping mechanisms employed by households to deal with a lack of food or money revealed that there were many differences in the mechanisms employed by people immediately after the event and at the time of data collection. Consequently, questions were asked with two separate recall periods: a seven-day recall period, which determined how many times negative coping mechanisms were used, and a 30-day recall period, which determined if negative coping mechanisms were used.

When asked what negative coping mechanisms were employed over a seven-day period, beneficiaries reported lower reliance on all negative coping mechanisms compared to the control. However, one of these was statistically significant — having to borrow food from family or friends. The results (Table 5) show the average number of days within a seven-day period the households used each negative coping strategy. The control had to resort to borrowing food 0.65 days over a seven-day period while the beneficiaries averaged just 0.2 days because of a lack of money or food – a major difference between the two groups and an outcome that highlights the importance of cash transfers. At the time the data was collected, over 70 percent of beneficiaries had spent 75–100 percent of the cash they were given, with all beneficiaries having spent part of their cash handout on food for their family’s consumption.

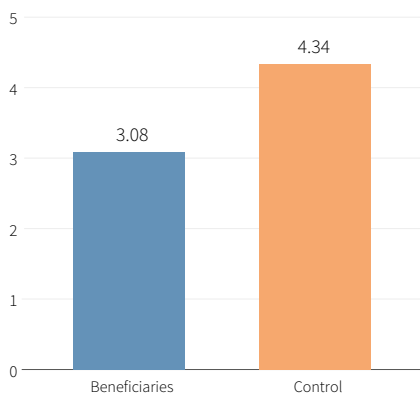
**Figure 3. Number of days when households adopted negative coping mechanisms over the previous seven days**



Source: Authors’ own elaboration. Note: Darker colours indicate statistically significant results.

When it came to coping mechanisms over the past month, the differences were bigger: the control group was much more likely to use negative coping mechanisms as households did not have enough food or money to feed their families. Most notably, 53 percent of the control group had to reduce health expenses compared with 27 percent of beneficiaries;

**Figure 4. Coping Strategies Index (CSI)**



Source: Authors' own elaboration.

42 percent of the control group had to borrow food compared to 19 percent of the beneficiaries; and 14 percent of the control group had to withdraw children from school compared to 3 percent of the beneficiaries.

The Coping Strategies Index (CSI) was calculated for both groups, and it was significantly higher in the control than in the beneficiary sample. The average CSI for the control group came to 4.34 while the average CSI for the beneficiary sample came to 3.08. This again highlights that the control group was more likely to resort to negative coping mechanisms than the beneficiary population.

Even though the control group outperformed the beneficiary sample when it came to food consumption, there seems to have been a major effect on how the programme assisted beneficiaries. The control group performed worse than the beneficiary sample across all negative coping mechanisms, both in the seven-day period and the 30-day period. Consequently, inadequate food consumption statistics could be due to the short recall period of 24 hours. If the recall was placed over a longer duration (e.g. seven days), this may have shown greater food consumption diversity over time. It could also be that the control group valued negative coping mechanisms, such as taking on debt or borrowing, to increase food consumption more than the beneficiary population did. This raises important questions about behavioural differences between beneficiary and control populations, which could lead to areas of new research that indicate how receiving Anticipatory Action assistance may change household decision-making.



© FAO/ Nguyen Minh Duc



# Anticipatory Action for Typhoon Noru in central Viet Nam



## Return on investment

**SHORT-TERM IMPACT**

**USD 1 → USD 0.46**

Every USD 1 spent on anticipatory actions had a return of USD 0.46 for one typhoon season

**MEDIUM-TERM IMPACT**

**USD 1 → USD 1.38**

Every USD 1 spent on anticipatory actions had a return of USD 1.38 for three typhoon seasons

**LONG-TERM IMPACT**

**USD 1 → USD 4.6**

Every USD 1 spent on anticipatory actions had a return of USD 4.6 for ten typhoon seasons



42 percent of the control group had to borrow food from family and friends compared to 19 percent of the beneficiaries

On average, the control group had to resort to borrowing food 0.65 days over a seven-day period compared to the beneficiaries who averaged just 0.2 days as a result of a lack of money or food



The control group was much more likely to use negative coping mechanisms than beneficiaries

53 percent of the control group noted that they had to reduce health expenses compared to 27 percent of beneficiaries

14 percent of the control group had to withdraw children from school compared to 3 percent of the beneficiaries



There is an increased sense of security to manage the impact of Typhoon Noru and future events

# Community perspectives

Shortly after Typhoon Noru hit Viet Nam in late September, FAO and VDDMA visited the affected communities. The purpose of the discussions was to provide some insights into how the Anticipatory Action intervention rolled out on the ground and how the impact was felt across the community. It also aimed to distil any secondary benefits of the approach which may be lost through a statistical review.

## What was the impact of Typhoon Noru?

While not as intense as past typhoon events, it was clear that the wind and rainfall induced by Typhoon Noru still had an impact. Rising floodwaters – reaching 70 cm–1 m, with one participant describing it as up to chest-level – muddied many homes and damaged vegetable crops from oversaturation.

The floodwaters did not recede for four–seven days after Typhoon Noru passed through, leaving people stuck in their homes, where they moved to the second floor or propped themselves up on tables for safety. The floodwaters also cut them off from the roads and restricted their access to markets where they could replenish food stocks and personal items. Small, family-run poultry farms (10–20 chickens) were also affected. One participant said their chickens were lost during the typhoon as the water rose rapidly overnight; the chickens that did survive the flood died of diseases afterwards due to the humidity. “And we have had no money to buy new chickens since then,” the participant said. Strong winds further caused destruction. There were reports of up to 30 homes being unroofed in some communities, along with damage to toppled banana trees and vegetable crops.

Because of the combination of strong winds and rainfall, some agricultural products were destroyed, triggering a hike in prices at the local market. Fruits and vegetables doubled and tripled in value. One participant noted that the price of morning glory/water spinach more than doubled from dong (VND) 5 000 (USD 0.21) to VND 12 000 (USD 0.51).

What is notable in the discussions, however, is the limited impact on rice production. As the summer harvest for rice concluded two weeks before Typhoon Noru made landfall, the floods and strong winds caused minimal damage to the predominant livelihood in the area. Therefore, those who received assistance spoke more about the impact on their food security, whether concerning their access to markets or their home vegetable gardens and small livestock, which were the most at risk during the typhoon.

Not all in the community were affected the same way. The type of house and location was a large factor in determining resilience to the storm. One participant noted that families with “strong or two-story houses” could brace for the storm better while families who live near the river were at a higher risk of flooding and therefore needed to evacuate. Families with

The floodwaters did not recede for four–seven days after Typhoon Noru passed through, leaving people stuck in their homes, where they moved to the second floor or propped themselves up on tables for safety.

children or older members on social schemes, as well as people living alone, were identified to be the most vulnerable during the typhoon and required the most support from local authorities.

### What early warnings were received, and how were they acted upon?

During the discussions, those who were part of the Anticipatory Action intervention and those who were not all agreed that the early warning information they received was timely and accurate, and it enabled them to act before Typhoon Noru made landfall.

Various communication platforms were used to deliver information to the communities. Updates were provided on television, loudspeaker, radio, SMS, word of mouth and even through the Zalo online messaging app. In both beneficiary and control groups, updates were provided four–five days, two–three days and 20 hours before the typhoon hit. The information given by VDDMA and local governments not only highlighted the typhoon’s track, wind speed and rainfall but provided advice on how to act.

Such actions included prompting families to evacuate,<sup>ix</sup> moving key assets to higher ground, strengthening houses, applying sandbags and preparing lighting alternatives for an electricity blackout (as the government turns it off one day before the storm). Members of local disaster response teams visited vulnerable households to help them strengthen their homes and even move their bikes. However, the materials needed to strengthen homes were an issue for many. While volunteers were rapidly deployed to support home reinforcement, many households that were not part of the Anticipatory Action pilot could not afford ropes and the metal or bamboo rods required to secure their houses; many were evacuated instead.

The key difference between the two groups, however, came down to how they managed their food security in this time of crisis. The group who received support bought food stocks, such as instant noodles, dried fish and vegetables ahead of the storm, and felt that they were “well prepared with the cash and drums”.

### How were the cash and watertight drums used?

Families received a one-off cash payment of USD 48 through their local post office. This support was welcome as it offered the greatest flexibility for families to choose how to protect themselves. One participant pointed out that the amount was “equivalent to 5–7 days of working income and boosted the families’ ability to protect themselves ahead of the storm”.

---

ix In Hai Phong some families evacuated to the hill areas in Hai Son, over 10 km away from the community. It took them half a day to get there.

The cash was primarily used to buy food such as instant noodles, dried fish, canned fish, spices and sauces, and materials, such as bamboo rods and ropes, to strengthen homes ahead of the storm. People also bought medicine that might be hard to obtain once the roads become flooded and inaccessible. Households led by women indicated that the cash helped them feel more secure. They used the cash to buy food before the typhoon made landfall and therefore did not have to worry about access to markets, which often required tortuous journeys after such events due to road and infrastructural damage.

The timing of the distribution was ideal for participants, with even non-participating members stressing that receiving cash two–three days before a typhoon would make a difference to their food security. Usually, this modality of support is reserved for after a shock, with government and donors handing out food packages. After Typhoon Noru, one community reported that a famous figure in Viet Nam donated USD 12 each to several families, along with 10 kg of rice, packets of noodles and spices. While this support is well received, having the cash to secure food and critical items earlier would have been preferred.

The cash was seen as particularly important for the elderly who often do not have access to small household gardens or livestock for their food. They could not pre-harvest during these events and many of them are at the risk of food shortages because they had no production to lean on. Women were primarily given decision-making rights on how to spend the cash but many reiterated that they consulted with their partners.

The watertight drums were welcomed by the communities and often referred to with excitement and pride. Participants who did not benefit from this intervention reinforced the importance of drums to store products such as crops that are at risk of rotting if left exposed. This can compound the food insecurity of vulnerable families post-typhoon. Those who did receive the drums stored rice (10–20 kg), food stocks, clothes, blankets, documents (family book, IDs, school/marriage certificates), water and mosquito nets. The drums were deemed “very helpful and multipurpose” as households can use them again for future events and for keeping food and blankets safe from rats. This was an interesting point as pests and diseases often increase after flooding and during drought. So, the drum itself would not only meet the present needs but would also serve for future climatic hazards.

Participants who were not given drums shared that they usually wrap clothes in plastic sheets to keep them dry. Local disaster response volunteers helped them move their gear to higher ground. However, food and personal assets tend to get wet and need replacements. Across these interviews, participants voiced it would be helpful to receive such drums to avoid these issues in the future.



# Impact stories

Ms Hoang Thi Do

Quang Tri province

When Typhoon Noru hit central Viet Nam, 58-year-old Do was living in a commune next to the Thach Han River in Quang Tri province. Typhoons like Noru are common occurrences in her neighbourhood where floodwaters can rise quickly.

Do used to be an avid rice and vegetable farmer in the fields around her house, raising pigs, ducks and chickens along the rice paddies. But now her hands and legs fail her, and she finds herself tending to a small home garden, having just enough for her and her 86-year-old mother to live on. The garden harvest itself is shared with others around her who help with the chores of running the home. She has one daughter who moved away to be with her husband in another village, a tradition in Viet Nam.

Do spends most of her days at home caring for her mother, doing the cooking and housework, and going down to the local market to buy fresh vegetables that they do not grow at home. This life is extremely frail against the whims of natural hazards such as typhoons.

Three days prior to Typhoon Noru's landfall, she received warnings through the loudspeaker, with local information about what to do. She said she just had enough time to prepare for the typhoon that she knew was coming. As in the past years, during typhoon events, she quickly packed her belongings and other essential items and moved her mother to the upper floor of her house, thanks to the support of the community volunteers. Two-story homes, where families take refuge when the warnings come through loudspeakers, have become a common sight in Viet Nam.

In the midst of her usual preparations, Do received extra support from FAO in the form of USD 48 in cash and a watertight drum two days before the typhoon hit. "I was able to buy fresh vegetables, tinned fish, rice and spices quickly at the market, which I often cannot purchase once the waters start to rise. I also bought plastic sheets to cover the roof as it often leaks when the rains come and can ruin everything," Do said. With the watertight drum, she had somewhere to store their clothes, blankets and pillows to keep them dry.

When Typhoon Noru hit, the water levels began to rise, seeping into her house. Do showed us the water line of the watermark on her house, pointing out they were as high as her stomach. The support given ahead of the typhoon allowed Do to stay dry and well fed. "We often had to wait a while for the water to recede and to access markets and the roads again. But I had all I needed to keep us going through this time," she said.

In the future, Do wishes "for some help to repair my roof in the upper area but for now, the drum and the plastic sheet will come in handy for future events. They are getting worse and come more frequently, so support like this helps us tackle these issues better."

## Ms Hoang Thi Thuan

*Quang Tri province*

Hoang Thi Thuan, 59, and her sister, Hoang Thi Xuan, 55, are no strangers to typhoons and their yearly occurrence. In the past, when the floodwaters rose after a typhoon, local volunteers would gather their boats to bring her and her family to a safe space. But she now has a “resilient house” made from wood and concrete that allows them to move upstairs and keep themselves and their personal items dry.

For Thuan and her sister, the small garden they share with their brother next door is the main source of fresh food. Their house sits along the Thach Han River and while beautiful on calm days, it can be the cause of destruction during the monsoon season.

Typhoon Noru was no different. Thuan recalls the strong winds and rain. She and her sister went upstairs to stay dry and wait it out. “The water rose one foot over our beds and we put everything high up so it would not get damaged,” she said.

Like others in her community, Thuan was thankful to receive the early warnings through the loudspeakers as they have no phone or radio. She received the warning five days before Typhoon Noru made landfall. “Government volunteers came and helped us move everything and prepare the house. The warnings from the local government are really good and on time. We always have enough time to prepare,” she said.

But what made a difference this time were the USD 48 cash and watertight drum she received two days before Typhoon Noru hit. She explained, “I had a means of ensuring we were not only safe but we could eat and buy some extras.”

Thuan used the cash to buy fish, meat and some milk for her sister, who is not well so Thuan has to ensure she has access to foods that would make her strong. “I was worried when the typhoon was about to hit because we usually get cut off from the market and what food I have at home often gets wet or washed away,” she said. “But that was not so this time. I could get good food to keep my sister strong, and I had the bin to keep it safe and dry even as the floodwaters began to rise.”

She also used part of the money to buy steel rods to help keep the doors shut. “As you see, the doors are made from wood and open easily with the wind. With this money I could go and buy these quickly and secure my house from the wind,” she said.

## Le Thi Vi and Nguyen Hue

*Quang Tri province*

Le Thi Vi and Nguyen Hue, both 84 years old, are still farming. Vi points out that they used to work on bigger rice paddies but now “work only on what we need to take care of our chickens and ducks with some vegetables to keep us going”. They also get USD 15 each per month from the government’s social protection system for retirees.

During Typhoon Noru, Hue recalls hearing the first warnings over the loudspeakers and taking shelter at a neighbour’s house with a second floor. “We only have a one-story house here and it is weak. We sat through the night hearing the strong winds blow through,” she said.

When moving to the new location to bunker down for Typhoon Noru, FAO supported the couple by providing USD 48 cash and a watertight drum for their personal goods. “We went straight to the store and bought meat, fish cans and some milk and stored them in our new drum. We were able to keep eating healthy throughout the event, and we felt confident we would be okay in the aftermath when the roads and markets are hard to reach,” Vi said.

When Vi and Hue returned to their home, they found “mud up to our knees”. They tried to keep their chickens and ducks safe by placing them in a small shelter but they found the shelter collapsed and their ten chickens dead.

For future events, they said support to “make structures like our house or the poultry shelter stronger would be useful. But for now, this support was really helpful, and we can use the drum again when the next warning reaches us. My husband and I are discussing how it should be utilized.”





## Lessons learned

### Anticipatory Action is not new

Anticipatory Action is not a new endeavour or sector in Viet Nam but should be seen as an integral component of disaster risk management, adaptation and resilience. The Government of Viet Nam has already made significant progress towards the approach. The country has a robust early warning system for typhoons which is reliable and provides timely and trusted information to the target communities. The government also provides sound advice on actions the communities should take to protect themselves or mitigate the potential impact, although it is sometimes difficult to apply them all. For example, volunteers are deployed 72–48 hours before a typhoon makes landfall to help vulnerable households (i.e. people with disabilities, older people, single-headed households) secure their houses or evacuate to higher ground.

Right now, there are no specific regulations or policies that allow VDDMA to use the state budget for direct-support interventions. Therefore, by carrying out Anticipatory Action interventions and documenting the experience, we can better advocate for a shift in policy that would properly integrate Anticipatory Action into the country's disaster risk management system.

FAO's aim in Viet Nam, therefore, is to not look at this as a new approach but as an area worthy of more substantial investment to supplement what the government and local people have already prepared. It would also facilitate the integration of Anticipatory Action into their disaster risk management plans, scaled up and systematically documented after each activation.

## The link between disaster risk reduction and Anticipatory Action is key

Anticipatory Action is an approach that complements the longer-term disaster risk reduction interventions in central Viet Nam, which are focused on risk assessment, structural mitigation work, capacity building and awareness. Resources for Anticipatory Action can be used when and where the threat is accurately identified to mitigate residual risks on lives and livelihoods.

There are often few resources for Anticipatory Action interventions, which need to be carefully selected based on their feasibility, appropriateness to local context, and benefit–cost ratio. The approach prioritizes households based on the predicted track and severity of the event to ensure those who most need the support are quickly propped up to receive it. The positive results of these tailored interventions should also influence future disaster risk reduction programmes in central Viet Nam so that similar support can be given to as many vulnerable and exposed households as possible. The positive learnings from these interventions should be systematically documented to help scale up this type of support, with earmarked financing or dedicated resources.

## Simulations are critical, if not essential

Simulation exercises can be used to practise and refine the process of implementing Anticipatory Action interventions based on a near-real disaster scenario. This will ensure the smooth delivery of Anticipatory Action to the communities and serve as a learning tool to assess the capacities of the actors and increase advocacy for Anticipatory Action. The two-day simulation exercise in Quang Tri province in August 2022 enabled the FAO team, VDDMA, provincial and local governments, and community volunteers to test the feasibility of the actions in peace time and better prepare for future activation. Although the simulation was held in Quang Tri province, Thua Thien Hue and Quang Binh provincial government officials were invited to the exercise as observers for their learning. Moreover, lessons from the simulation were systematically documented, which contributed to the Anticipatory Action activation ahead of Typhoon Noru in September 2022.

## Triggering for typhoons is tricky but doable

While the thresholds used for triggering Anticipatory Action may be slightly increased in the future, the experience during Typhoon Noru shows that the typhoon forecast available 72 hours prior to landfall provides accurate information on the possible track and severity of the wind. This may suffice for future activations, especially if the NCHMF forecast can be accessed in real-time, in addition to the ECMWF ensemble forecasts.

However, the 72-hour accumulated rainfall forecast was not accurate for this event and might be considered as a secondary trigger option. Rainfall forecast more than 48 hours before any event is particularly challenging, but it could be used to initiate the preparation for livestock evacuation two days prior to landfall. To expand the Anticipatory Action protocols to other regions, we must adjust the trigger threshold to each location or develop impact-based forecasts.

### **More research on Anticipatory Action cash assistance needed**

The results of the cash impact assessment show that multipurpose cash has had a positive impact on household food consumption, reduced the need for negative coping mechanisms, and relieved the debt burden on recipient households. However, the study did not completely capture how well the cash amount transferred covered various needs before and during hazards. Additionally, it did not fully consider the communities' perception and experience regarding the necessary amount of cash to meet priority needs until regular emergency response reaches the households/communities. Therefore, further research is needed to determine appropriate cash transfer amounts for Anticipatory Action by examining priority needs and ensuring cash adequacy.

In general, there is a lack of empirical evidence regarding the specific utilization of Anticipatory Action cash by recipient households and the purposes for which it is used. Initial findings, however, suggest that a significant portion of households utilize Anticipatory Action cash to meet their food requirements, facilitate evacuation processes, and address other related needs. Consequently, it is crucial to delve deeper into the variations and specifics of cash usage across different livelihood types and zones, comparing it with regular emergency and social protection transfers. Such an analysis would provide valuable insights to promote Anticipatory Action cash as a preferred and effective risk management tool.

### **Community perspectives: How can we do better next time?**

Discussions with government partners and the beneficiary and control groups revealed avenues for improvement to the Anticipatory Action programme. While overall, the Typhoon Noru Anticipatory Action interventions – from delivery to utilization according to purpose – were well received and gathered positive feedback, there was room to improve.

The communities asked for two changes to be considered in the distribution of drums in the future. The first is to procure slightly smaller drums so they can be easily transported. Some elderly recipients struggled to bring the drums back to their household as they were a “bit too high and big” although they could often call a neighbour to help. Smaller drums

would be easier to transport from the community hall, where they were distributed, to the households. The second suggestion was to provide two smaller drums. This would allow households to separate goods such as rice grains and key documents, instead of having to keep them low in the barrel and digging them out after the typhoon. It would also allow the option to use one drum for clean water and another one for dry goods. Perhaps the deployment of smaller and more affordable drums might also have an impact on future ROI calculations. This will be considered for future events.

The cash distribution process can be refined. Some participants in the cash distribution were elderly and would often send their neighbours or closest relatives to go and receive the cash from the post office, and to request support to spend the money ahead of the typhoon. However, due to the rules and regulations of cash distribution, the individual whose name is listed as the recipient must be the one to come to the post office with the appropriate ID. Participants requested alternative measures to allow support to pick up the cash be considered in the future.

Participants also noted that their homes are often at the forefront of typhoon impacts but support to strengthen them ahead of the shock is lacking. As one participant said: “While we receive the warnings and advice to make our home stronger, it is hard because we do not have the materials.” While this action is outside of FAO’s mandate, the Viet Nam Red Cross Society is piloting the distribution of plastic sheets, which could extend to household livelihoods kits and followed by joint activations with VDDMA in the future. For the district of Quang Dien, VDDMA colleagues mentioned that they can easily identify houses that are the most vulnerable during typhoons (nearly 60 houses) and deploy response teams rapidly. However, access to necessary resources for this – ropes, nails, plywood – remains an issue.

Finally, the limited scale of intervention and targeting was highlighted as an area for improvement. While those who received Anticipatory Action support were the most vulnerable in the community – and everyone agreed they needed support – many did not know who were classified as poor or near poor. It was recommended by both sides to scale up the intervention for the next round as “it can be difficult to decide who gets support and who does not when 50 percent of these communities are in the same classification and only 5–10 percent receive support.”




# Notes

- <sup>1</sup> **Food and Agriculture Organization of the United Nations & International Organization for Migration.** 2023. *Climate-induced human mobility: How can Anticipatory Action play a role in Asia and the Pacific?* Bangkok. <https://doi.org/10.4060/cc6742en>

---

Anticipatory Action safeguards lives  
and livelihoods, builds resilience to future  
shocks and eases pressure on strained  
humanitarian resources.

---



FAO's Anticipatory Action approach uses risk analysis and forecasts to trigger interventions before a crisis escalates into a humanitarian emergency.

Office of Emergencies and Resilience  
Anticipatory-Action@fao.org  
[fao.org/emergencies/our-focus/anticipatory-action](https://fao.org/emergencies/our-focus/anticipatory-action)

Food and Agriculture Organization of the United Nations  
Rome, Italy

