



Leveraging Trade Policy for Climate Change Adaptation in Viet Nam's Agricultural Sector

IISD REPORT

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Leveraging Trade Policy for Climate Change Adaptation in Viet Nam's Agricultural Sector

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Executive Summary

This report examines how trade policy can support adaptation to climate change in the agricultural sector in Viet Nam. Its main contribution is a contextualized list of critical adaptation goods and services needed to advance Viet Nam's agricultural adaptation priorities—particularly those identified in its national adaptation plan. The report finds that non-tariff measures are the primary barriers to trade in analyzed adaptation goods, creating administrative delays that might hinder the wider adoption of foreign technologies. The report also identifies barriers to adaptation services, including restrictions on the movement of international experts, who could provide key adaptation services for Viet Nam's agricultural sector. It also points to how data localization and cross-border transfer requirements might restrict access to global weather forecasting services.

To facilitate access to climate adaptation goods and services for Viet Nam's agricultural sector, the report recommends a coordinated trade policy approach. A foundational first step is for the government to define and categorize “climate adaptation goods” and establish a mechanism to systematically review trade measures in light of adaptation priorities under the national adaptation plan. Following this, key measures should include lowering or eliminating import tariffs and taxes on these identified items, simplifying customs procedures, and strengthening trade facilitation through digitalization and risk-based controls. The report also emphasizes the importance of regulatory convergence, including the alignment of sanitary and phytosanitary and technical standards with international norms and the pursuit of mutual recognition agreements to reduce compliance costs between trading partners. In services, recommendations focus on easing restrictions on the temporary movement of skilled professionals, streamlining visa and work permit regimes, and enabling cross-border data flows essential for modern climate and weather information services. Finally, the report highlights the importance of building technical capacity and the role of international partnerships in mobilizing the technical and financial resources required to operationalize trade-centred climate reforms effectively.



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Abbreviations and Acronyms

FTA	free trade agreement
HS	Harmonized System
MAE	Ministry of Agriculture and Environment
MFN	most-favoured nation
MRA	mutual recognition agreement
NAP	national adaptation plan
NTB	non-tariff barrier
SPS	sanitary and phytosanitary
WTO	World Trade Organization



1.0 Introduction

Viet Nam faces sea level rise, saltwater intrusion, and more frequent and intense typhoons, floods, and droughts due to climate change. Current and future climate impacts threaten the long-term food security and the livelihoods of tens of millions of people, particularly in the agricultural sector, which constitutes the backbone of the rural economy and remains a critical pillar of its food security (Ministry of Agriculture and Environment [MAE], 2025). In response to this challenge, Viet Nam has integrated climate change adaptation into its development strategy. Adaptation refers to the context-specific actions that governments and societies take to prepare for and protect against the negative impacts of climate change, while also taking advantage of any potential new opportunities (Intergovernmental Panel on Climate Change, 2022).

International trade has a key role to play in adaptation to climate change. Trade itself is highly exposed to climate change impacts: extreme events can damage trade infrastructure and disrupt the production and movement of goods, with cascading effects across countries and supply chains that are ultimately felt in communities far from the initial event. At the same time, climate change is reshaping demand for specific products and services, including those that are needed for adaptation, such as cooling and water-efficient technologies, climate-resilient infrastructure, or new crop varieties and animal breeds suited to changing conditions (World Trade Organization [WTO], 2022a).

To date, adaptation considerations have largely remained peripheral in mainstream trade policy-making and international climate governance processes. Research and policy discussions on the trade–climate nexus have historically focused on mitigation, with the relationship between trade and adaptation only recently gaining attention. While adaptation measures are increasingly addressing the impacts of climate change on trade, far less attention has been given to the reverse, namely, the potential for trade to support adaptation (Dekens et al., 2021). This is starting to change. Within the academic literature, agriculture and food security have received increasing attention as domains in which trade plays a critical role in adaptation to the impacts of climate change. Recent studies highlight the importance of international trade in balancing policy objectives related to supply diversification and domestic production in the context of climate-induced shocks (Gouel & Laborde, 2018; Janssens et al., 2017).

At the multilateral level, recognition of the link between trade and climate change adaptation has gained greater visibility in recent years. In 2025, the 30th United Nations Climate Change Conference formally acknowledged the relevance of trade to climate action through the establishment of a dedicated technical dialogue on trade and climate change. While the initial focus will likely be on mitigation-related issues, it creates a space for policy experts from both the trade and climate communities to discuss other shared interests, such as adaptation.

In parallel, WTO Members have addressed these issues in several forums, including the WTO Committee on Trade and Environment and the plurilateral Trade and Environmental Sustainability Structured Discussions, reflecting a growing interest in the role of trade policy in supporting climate resilience. Some international organizations have begun to integrate



climate change adaptation into their analytical work on trade, including the WTO (2022b), the United Nations Conference on Trade and Development (2021, 2025), and the Organisation for Economic Co-operation and Development (2017).

The relationship between trade and adaptation is critical for several reasons:

- **adaptation as a prerequisite for trade continuity:** Adaptation is crucial to guarantee the continuity of Viet Nam's trade-oriented economy, especially as inundation of coastal roads and ports can sever supply chains, and droughts and saline intrusion threaten the supply of high-value agricultural exports.
- **trade as a vector for adaptation:** At the macroeconomic level, export revenues provide the financial resources necessary to fund adaptation projects. More directly, trade facilitates access to and reduces the costs of adaptation goods such as advanced irrigation technology and climate-resilient seeds, as well as services such as specialized engineering and meteorological forecasting.
- **trade policy as both a barrier and enabler of adaptation:** Trade policy can both facilitate and hinder adaptation efforts. While free trade agreements (FTAs) can lower the cost of adaptation goods and provide frameworks for cooperation on (and financing for) adaptation, domestic trade policies can inadvertently create trade barriers, hindering the import of adaptation goods and services.

Against this backdrop, this report examines how trade policy can better support climate change adaptation in agriculture by improving access to the goods, services, technologies, and expertise needed to strengthen resilience¹. It advances nascent conceptualizations of adaptation goods and services (see Centre for Climate and Energy Transition, 2026; Dekens et al., 2021; ESSA Technologies Ltd., 2017) by developing a contextualized list for Viet Nam's agricultural sector, grounded in national adaptation priorities and sector-specific research. This list of adaptation goods and services constitutes the report's main added value. It is intended to help two main policy audiences in Viet Nam. For trade policy-makers, it shows why adaptation needs should be considered in the design of tariffs, customs procedures, standards, and services regulation, and how trade policy can either enable or constrain access to those goods and services needed for resilience-building. For adaptation policy-makers, it highlights trade as a practical lever for realizing adaptation priorities under Viet Nam's national adaptation plan (NAP) and supporting the private sector's engagement in adaptation—especially where domestic capacity depends on imported technologies and specialized services. As such, this report aims to inform negotiations as well as policy and strategy development, particularly among Vietnamese policy-makers within MAE.

The remainder of the report is structured in five parts: an explanation of the research approach; an overview of climate impacts and adaptation priorities in Viet Nam's agricultural sector; an identification of adaptation goods and services required to advance and implement said adaptation priorities; an analysis of trade barriers to their uptake; and policy recommendations to tackle these barriers and strengthen the role of trade in supporting adaptation in Viet Nam's agricultural sector.

¹ This report builds on a forthcoming longer report that has been developed by the research team with support from the Australian government and Irish Aid.



2.0 Methodological Approach and Key Definitions

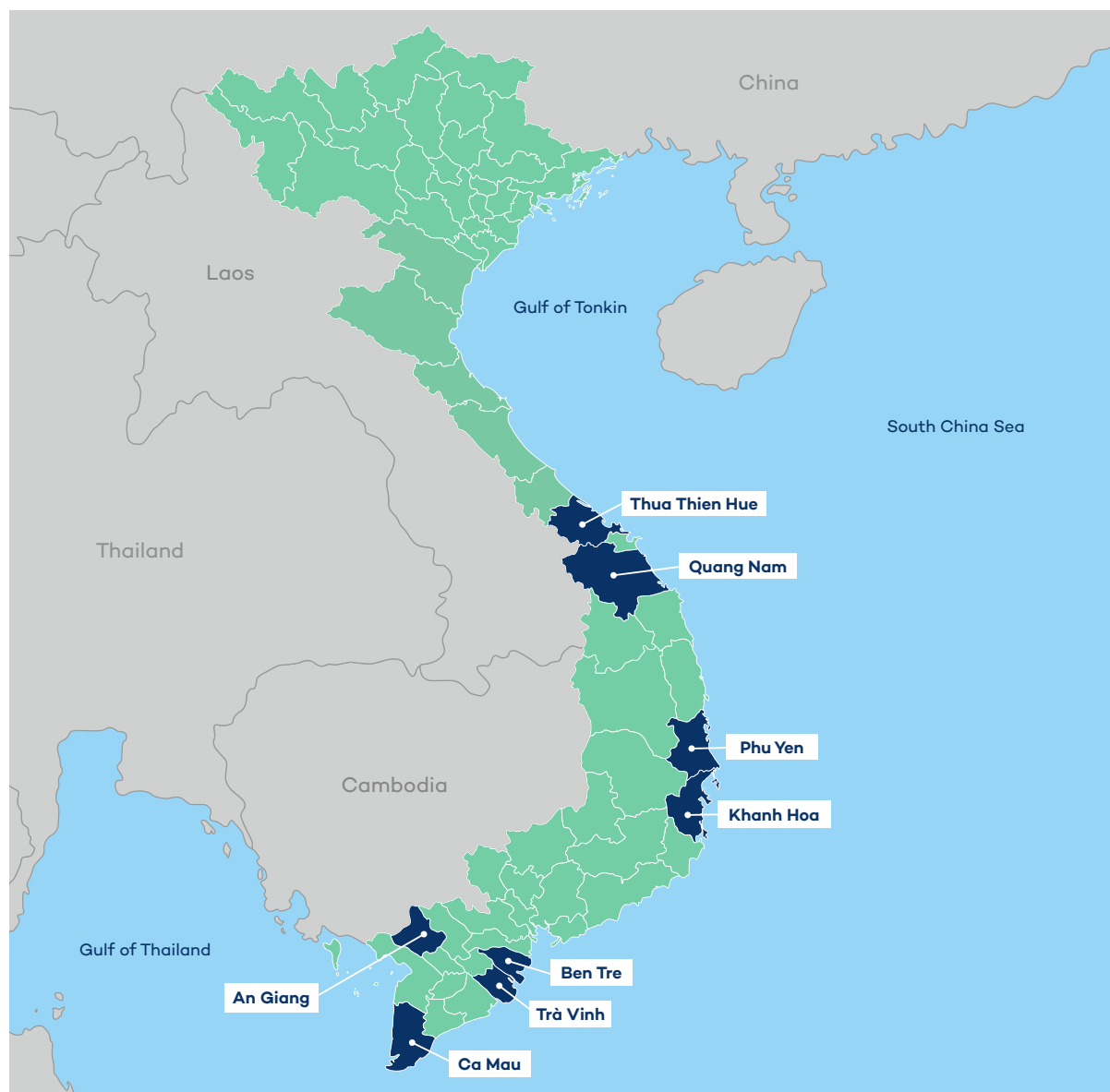
Recognizing the above-described links between trade and adaptation policy, the International Institute for Sustainable Development (IISD) and MAE established a collaborative research partnership to better understand how they are experienced and shaped in practice. The research team formed by IISD, MAE, and local trade, adaptation, and agriculture experts first assessed experienced climate impacts and existing adaptation practices in Viet Nam's agricultural sector to identify the adaptation goods and services needed to implement adaptation actions. It then identified trade barriers to those adaptation goods and services, with the aim of formulating policy recommendations on how to reduce such barriers.

The analysis draws on desk research, four consultation workshops with policy-makers at national and provincial levels held between April 2025 and May 2026, and 54 interviews conducted during field research in eight provinces in Central and Southern Viet Nam in June and July 2025. While the consultation workshops focused on bringing together adaptation and trade policy-makers to explore how both areas are linked in relevant policy frameworks, the field research assessed the climate impacts agricultural businesses are facing, the adaptation measures they put in place, and the types of goods and services they already use or need. The selected provinces—**Ben Tre, An Giang, Ca Mau, Trà Vinh, Khanh Hoa, Phu Yen, Quang Nam, and Thua Thien Hue**—were chosen based on four key criteria: 1) their strong agricultural trade and export sectors; 2) their high vulnerability to climate change impacts, such as saline intrusion, floods, and droughts; 3) ongoing adaptation efforts; and 4) their representation of diverse agroclimatic and geographic zones. This selection allowed the team to examine a wide range of ecological and economic profiles, from delta to coastal and mountainous regions, all facing significant but diverse climate-related threats.

For the interviews, the research team selected six to seven individuals from each of the eight provinces. Overall, 29 interviews were conducted with provincial government representatives, 18 with enterprises involved in the processing, distribution, and export of agricultural products, and 7 with cooperatives and community organizations directly engaged in agricultural production (for a list of interviewees, see Appendix A). The in-person interviews utilized a structured questionnaire (Appendix B) focused on climate risk perceptions, adaptation practices, and challenges.



Figure 1. Vietnamese provinces selected for field research



Source: Authors.

In the absence of internationally agreed definitions, adaptation goods and services are understood here as a subset of environmental goods and services and defined by their purpose of contributing to adaptation in the country where they are used, consumed, or provided. These can include technologies.² Adaptation goods refer to those used or consumed to reduce the negative impacts of climate change on people, regions, and sectors. These can be final goods, such as climate-resilient crop varieties, improved livestock breeds, irrigation technologies, or post-harvest equipment, including their components. Adaptation services are provided to reduce the negative impacts of climate change and include services needed to support the production, use, and maintenance of adaptation goods (see Dekens et al.,

² For definitions of environmental goods and services, see, e.g., the Agreement on Climate Change and Trade and Sustainability (2025) and Eurostat (2009).



2021). Examples include the provision of climate and weather information, early warning systems, climate modelling, engineering consulting, certification support, and research and development.³

Anchored in Viet Nam's adaptation priorities for agriculture as identified in the country's NAP, the list of adaptation goods and services presented in this report is based on the data collected during the field research, especially responses to the question: What products or services are necessary for the enterprise to restore production and enhance its adaptive capacity to extreme weather and climate change? The list has been discussed and validated by stakeholder workshops as described above.

Adaptation goods and services were then categorized according to their usage, and goods were matched with Harmonized System (HS) codes.⁴ This allowed the research team to analyze existing tariff and non-tariff trade barriers to these goods and services, drawing on relevant national regulations.

Finally, the team developed policy recommendations on how trade barriers to the identified adaptation goods and services can be reduced and, more broadly, drew lessons on how trade policy can be further leveraged to support adaptation in Viet Nam's agricultural sector.

³ The concept of adaptation goods and services is closely linked to concepts like adaptation technologies (Woo et al., 2021) and adaptation solutions (Trabacchi et al., 2020; World Intellectual Property Organization, 2022).

⁴ An HS code is a standardized six-digit international classification number, used by over 200 countries, that uniquely identifies a traded product to streamline customs procedures, tariff collection, and trade statistics worldwide. The HS is maintained and regularly revised by the World Customs Organization (<https://www.wcoomd.org/en/topics/nomenclature/overview/what-is-the-harmonized-system.aspx>).



3.0 Climate Impacts and Adaptation Priorities in Viet Nam's Agricultural Sector

3.1 Overview of Climate Impacts in Viet Nam's Agricultural Sector

Viet Nam's agricultural sector faces significant challenges due to climate change, making adaptation efforts critical to ensuring food security and economic stability (Arunanondchai et al., 2018). Climate risks to Viet Nam's agricultural production are based on two categories of climate-related hazards: (i) events such as extreme heat, floods, droughts, and typhoons; and (ii) long-term changes in temperature and rainfall patterns. High temperatures, saltwater intrusion, extreme flooding, and prolonged droughts impact 70% of the cultivated areas that rely on rainwater, posing a significant risk to crop productivity (World Bank, 2022). In addition, the loss of agricultural land due to subsidence, rising sea levels, and sediment shortages already threatens the livelihoods of tens of millions of people (MAE, 2025), and future climate change will only exacerbate these challenges. Table 1 summarizes the main climate risks and impacts in Viet Nam's agricultural sector by region.

Climate change impacts are increasingly evident and intensifying across all eight provinces surveyed, with both direct and indirect effects on agriculture, aquaculture, and forestry. These impacts are shaped by each province's geographical, ecological, and socio-economic contexts but share common patterns of severity. A primary concern of interviewees in Ben Tre, Trà Vinh, and Ca Mau is saline intrusion, which has become more frequent and severe in recent years. The dry seasons of 2015–2016 and 2019–2020 saw the most severe saline intrusion in the area in over 60 years. This has devastated agriculture, damaging thousands of hectares of rice and fruit trees and causing significant economic losses. Other substantial impacts include temperature fluctuations and unpredictable rainfall patterns. In An Giang, local authorities and enterprises reported that irregular flood and drought cycles in recent years have disrupted traditional rice-growing calendars and aquaculture operations. Due to upstream hydropower dams and extensive dike construction to facilitate triple rice cropping, the province has experienced a dramatic reduction in flooded areas, from a peak of 235,300 hectares in 2000 to a mere 25,500 hectares between 2014 and 2023. This shift, while intended to protect crops, has come at an ecological cost, leading to a decline in natural fertilization and fish stocks. Furthermore, prolonged drought periods have particularly affected water availability for rice cultivation, while pangasius farming faces compounded risks from unstable water quality and disease outbreaks linked to environmental fluctuations.



Table 1. Summary of current and projected climate impacts in Viet Nam's agricultural sector

Category	Sub-category	Main climate impacts
By region	Mekong Delta	Rising sea levels, saltwater intrusion, and flooding.
	Central Highlands	Prolonged drought, water shortages, increased pests and diseases, and increased soil erosion.
	Northern Mountainous Region	Prolonged cold, soil erosion, and drought in the dry season. Directly affecting native crops and people's livelihoods.
	Southeast Region	Unusual fluctuations in rainfall, flooding, and landslides. Less affected by saltwater intrusion compared to the Mekong Delta.
By products/sectors	Strategic crops (rice, coffee, tea, pepper) and other crops	High temperatures, saltwater intrusion, extreme floods, and prolonged droughts.
	Agricultural land	Loss of agricultural land due to subsidence, rising sea levels, and sediment shortages. Affects 70% of the cultivated area that depends on rainwater, reducing crop productivity.
	Livestock	Reduced availability and quality of livestock feed, and increased disease outbreaks. Pig production is expected to decline by about 8.2%.
	Aquaculture	Rising water temperatures and salinity exceeding the tolerance threshold of many aquatic species. Forcing farmers to change production models (e.g., rotating shrimp and rice or growing salt-tolerant crops).
	Forestry	Increased forest fires (especially in the Northwest, North Central, and Central Highlands); impact on the distribution of sensitive forest biodiversity (e.g., dipterocarp, mangrove, evergreen broadleaf forests); increased risk of forest pests and diseases; impact on the productivity and suitability of planted forests; and biodiversity loss.

Source: Compiled by the research team based on Viet Nam's updated NAP (MAE, 2024) and fieldwork.

Khanh Hoa and Phu Yen provinces, due to their extensive coastlines and reliance on marine and agricultural economies, are vulnerable to more frequent and intense extreme weather events. These include typhoons, such as Typhoon Damrey in 2017, which caused widespread damage in Khanh Hoa, and prolonged droughts that led to the abandonment of over 10,000 hectares of rice in 2015. Concurrently, sea level rise is exacerbating coastal erosion, with some areas in Phu Yen losing up to 35 metres of shoreline annually, threatening coastal infrastructure and valuable land. This has also contributed to a rise in saline intrusion, affecting over 600 hectares of land in Phu Yen and disrupting agricultural productivity.



Quang Nam and Thua Thien Hue are experiencing increasingly severe and unpredictable weather, including more frequent and more intense typhoons, floods, and droughts. The provinces have been repeatedly hit by catastrophic events that illustrate this vulnerability. In 2020, Central Viet Nam, including Quang Nam and Thua Thien Hue, was devastated by a series of storms and record-breaking floods that resulted in over 291 fatalities and 66 missing people, with damages estimated at USD 1.3 billion. A landslide triggered by heavy rains in Quang Nam alone resulted in 15 fatalities. Another major event was Typhoon Molave in October 2020, which caused widespread damage to homes and infrastructure. More recently, in late 2024, the two provinces experienced further flooding and storms, causing landslides in Quang Nam and damaging infrastructure. These events not only inflict immediate economic losses but also lock many rural Vietnamese into a cycle of poverty as they are forced to deplete their savings and struggle to recover from repeated disasters.

The World Bank (2022) used different forecasting models to estimate the costs of climate change impacts. Higher and more variable temperatures and precipitation, as well as rising sea levels, will gradually destroy physical, productive, and human assets. By 2050, these damages could cost Viet Nam 12%–14.5% of its GDP or cumulative costs of USD 400 billion–USD 523 billion. The agricultural sector is particularly affected, with USD 1 billion in GDP and 1.5 million workers directly exposed to intense flood risks. In aquaculture alone, 1.1 million tonnes of production are at risk of flooding per year, accounting for almost USD 1 billion in exports. Without adaptation measures, almost half of the Mekong Delta area will be affected by salinity, at an economic cost of about USD 17 billion by 2030 (World Bank, 2022). The costs of adaptation efforts might also directly impact the competitiveness of affected products in the future.

3.2 Overview of Adaptation Priorities in Viet Nam's Agricultural Sector

In response to the various climate risks mentioned above, the Vietnamese government has promulgated a series of legal frameworks and strategic plans to drive its adaptation efforts, anchored in the NAP for the 2021–2030 period, with a vision to 2050 (MAE, 2025). The NAP establishes a robust national framework for adaptation actions, centred on three primary objectives: (i) enhancing the resilience of natural, economic, and social systems; (ii) mitigating the risks and damages emanating from climate-related natural disasters and extreme weather events; and (iii) strengthening national adaptive capacity through institutional reform, capacity building, and the mobilization of financial resources.

Viet Nam's NAP identifies 27 adaptation priorities to manage climate risks in the country's agricultural sector by 2025 and 2030. Of these, 19 are considered related to international trade because they involve the purchase or exchange of goods or services between parties, with a payment or capital element (see Table 2).

Additionally, Viet Nam developed a technology needs assessment for adaptation in 2012, including a list and prioritization of adaptation technologies in agriculture (Socialist Republic of Vietnam, 2012).

**Table 2.** Adaptation priorities for agriculture in Viet Nam's NAP

No.	Priority	Trade related	Explanation
1	Evaluate the efficiency of rice land and restructure inefficient rice land into land for fruit trees, vegetables, cash crops, or mixed farming models (rice farming combined with aquaculture, rice, vegetables, fruit trees, animal feed) of high economic efficiency, as suitable for each ecological region.	No	Primarily internal planning and production decisions
2	Exploit and develop the genetic resources of indigenous livestock breeds toward effective commodity production associated with ecotourism and support the development of brands and geographical indications for high-quality and advantageous indigenous livestock breeds.	Yes	Service provision (ecotourism services, branding/geographical indications consulting)
3	Restructure crops based on comparative advantages, markets, and in an adaptation-oriented manner in the region (agroforestry, agriculture, and fisheries, giving priority to large-scale commodity production, chain production, and enhancing added value).	Yes	Goods trade (transactions within the chain)
4	Support the application of agroforestry solutions for the development of fruit trees in order to improve the livelihoods and climate change adaptability of people in the northwest region of Viet Nam.	Yes	Service provision (technical assistance, consulting)
5	Apply science and technology, high technology, mechanization, automation and advanced farming processes, and sustainable climate-resilient intensive farming in ecological regions.	Yes	Goods trade (machinery, equipment, technology) and service provision (technology transfer)
6	Strengthen activities to control diseases and environmental pollution, and improve veterinary services for climate change adaptation and sustainable development of livestock to take advantage of ecological regions.	Yes	Service provision (paid veterinary services)
7	Develop regional linkages in the implementation of adaptation activities for subsectors in the agricultural sector.	No	Only linkages between regions within Viet Nam
8	Develop key agricultural centres and key raw material areas to serve agricultural processing facilities in the Mekong Delta in the long term and sustainably.	Yes	Goods trade (buying/selling raw materials for processing)



No.	Priority	Trade related	Explanation
9	Develop adaptive and linkage models in livestock production from the improvement of livestock breeds, breeding technology, and consumption market (domestic market and targeting the export market) to waste treatment according to ecological conditions.	Yes	Goods trade (export target is an international trade activity)
10	Determine the seasonal structure of climate change adaptation.	Yes	Service provision
11	Replicate methods of intercropping and intensive farming of climate-smart crops in different regions.	No	Internal production planning
12	Transform the agricultural production structure in ecological sub-regions of the Mekong Delta.	No	Regional planning
13	Develop advanced production models (synchronous application of irrigation systems, integrated nutrient management, use of disease-free seedlings and varieties in favour of export, intensive agriculture management, and environmentally friendly measures of disease prevention).	Yes	Goods trade (buying/selling seeds/crop varieties)
14	Replicate the system of rice intensification; intercropping of maize bean and cassava peanut bean models; integrated coffee management; VietGAP model of climate-resilient fruit tree intensification.	Yes	Service provision (VietGAP consulting/certification)
15	Replicate livestock models that improve barns and apply climate-smart high technology.	Yes	Goods trade and service provision (equipment, technology)
16	Apply interconnected and integrated models along the value chain: high-tech livestock, biosecurity, integrated food-energy systems, ecosystem-based adaptation livestock, VietGAP livestock production, and climate-smart agriculture.	Yes	Service provision (technology, VietGAP consulting)
17	Replicate the climate change adaptation model of green feed for cattle and other ruminant livestock production.	Yes	Goods trade (buying/selling fodder seeds/products)
18	Shift from scattered and small-scale animal husbandry to concentrated animal husbandry in the farm model; synchronously invest in the animal husbandry system and the environment; and apply advanced livestock technology to improve adaptability and added value.	No	Internal production transition



No.	Priority	Trade related	Explanation
19	Strengthen the operation of the monitoring and early warning system for climate change-induced natural disasters and risks to serve agricultural production.	Yes	Service provision (information/alert services)
20	Strengthen aquatic veterinary services and strictly control, forecast, and warn early of any epidemic/disease, adverse environment, and extreme weather to reduce risks in aquaculture.	Yes	Service provision (veterinary/ health services, alerts)
21	Analyze, select, and breed high-quality, high-salinity-resistant, brown planthopper-resistant rice varieties that are suitable for saline soils in coastal plains to adapt to climate change; improve soybean plants to enhance their resilience to climate change using CRISPR/Cas9 gene editing techniques; and produce raw sugarcane in arid regions of the South-Central and Central Highlands.	Yes	Goods trade (buying, transferring crop varieties/ seeds)
22	Shift the structure of crops to adapt to climate change on land affected by drought and saltwater intrusion; develop a sustainable rice shrimp farming system, such as shrimp farming under the forest canopy, to adapt to climate change and climate-resilient models of rice shrimp; shift the structure of crops to develop effective, sustainable, and climate-resilient rice production.	No	Farming techniques and planning
23	Evaluate and select silkworm varieties that are thermal and humidity-tolerant, contributing to the stable, sustainable, and effective development of mulberry cultivation and silkworm rearing.	Yes	Goods trade (buying/selling silkworm breeds)
24	Replicate the model of local climate-tolerant varieties of poultry and waterfowl.	No	Internal production and trade
25	Shift the structures between fishing, aquaculture, and protection of aquatic resources; develop services for aquaculture.	Yes	Service provision (logistics, technical aquaculture services)
26	Replicate climate-resilient multi-species, multi-stage, and biosafety and biosecurity mixed aquaculture models.	No	Production technique
27	Shift the structure of reasonable-capacity vessels and boats; innovate fishing technology to achieve climate-resilient high efficiency.	Yes	Goods trade/service provision (buying, upgrading fishing equipment/technology)

Source: Compiled by the research team based on the list of specific adaptation tasks for climate-resilient and smart agriculture in Viet Nam's updated NAP (MAE, 2025, pp. 92-98).



As our research highlights, the adaptation priorities outlined in the NAP correspond to the adaptation measures taken by agricultural businesses and government authorities across all eight provinces. In line with adaptation Priorities 1, 3, and 22, farmers and cooperatives in the provinces of **Ben Tre, Ca Mau, and Trà Vinh** are shifting from traditional rice cultivation to more resilient livelihood models such as rice shrimp polyculture, which thrives in brackish water and provides higher economic returns. Many are also adopting nature-based solutions like integrated shrimp farming within mangrove forests, which not only produce organic-certified products but also protect against coastal erosion. In addition, communities are proactively managing water resources by building household reservoirs and utilizing sluice gates to control saltwater intrusion. Simultaneously, local authorities, with support from the government, are implementing large-scale infrastructure projects, including building sea dikes and sluice gates, such as the Nam Mang Thit irrigation system, to protect vast areas of agricultural land.⁵ The government's strategic shift in policy, outlined in the Mekong Delta Master Plan, encourages a move away from the traditional "three rice crops per year" model toward a more sustainable model that works with the Mekong Delta's natural environment, using diverse crops and aquaculture to adapt to salinity and floods, e.g., rice shrimp farming and agroforestry (see Priorities 3 and 4). Companies are developing modern technologies, such as salinity monitoring systems, to aid in climate-resilient farming. Box 1 provides an example of how a coconut company in **Ben Tre** has adapted its business to the increasing impacts of climate change.

Adaptation efforts in **An Giang** focus on investments in irrigation infrastructure, the promotion of climate-resilient rice varieties, and the adoption of closed-loop aquaculture systems to improve resilience to environmental variability. The government is leading with significant infrastructure investments, such as the VND 147 billion Bay Nui highland irrigation system, which includes reservoirs to secure freshwater for agriculture during prolonged dry spells. At the community level, farmers are actively diversifying their livelihoods, moving from triple rice cropping to more resilient, high-tech agricultural models like growing vegetables and flowers in greenhouses (see Priority 11). For instance, in Chau Doc city, a cooperative successfully implemented a multi-crop model that allows them to harvest up to seven times in 2 years. Enterprises like Loc Troi Group are partnering with farmers and cooperatives to build sustainable value chains, providing technical support and guaranteed incomes that help reduce vulnerability to both market and climate-related risks.

In **Khanh Hoa**, the aquaculture industry is transitioning to high-tech, storm-resistant high-density polyethylene cages for offshore marine farming, enhancing both safety and productivity. The private sector is a key driver, incorporating automated systems that reduce waste and pollution. Both **An Giang and Khanh Hoa** are also encouraging crop diversification, with Khanh Hoa converting over 800 hectares of rice farmland to more resilient, higher-value crops (see Priority 1).

⁵ Adaptation measures related to infrastructure development have been highlighted by research participants as priorities. They are not captured in the list of adaptation priorities for agriculture in Viet Nam's NAP, but as part of adaptation priorities in other sectors, notably infrastructure and disaster risk reduction (MAE, 2024).



Phu Yen is promoting similar technological solutions for its aquaculture sector, including recirculating water systems and advanced disease monitoring. At the community level, cooperatives are vital, providing farmers with technical training on climate-smart agricultural practices. Farmers themselves are diversifying their livelihoods by shifting from water-intensive crops to more resilient options like raising goats and ostriches, sometimes even linking these ventures to ecotourism.

Quang Nam and Thua Thien Hue provinces are investing in robust infrastructure, including the rehabilitation of mangrove forests and the construction of sea dikes and embankments to protect against coastal erosion and storm surges. They are also building and reinforcing irrigation systems and reservoirs to manage water resources more effectively during periods of both flood and drought. In addition to physical defences, a strong emphasis is placed on enhancing community capacity and diversifying livelihoods. Farmers are shifting to “climate-smart agriculture”⁶ and adopting alternative livelihood models to reduce their reliance on single crops and fisheries, which are vulnerable to extreme weather (see Priority 16).

Box 1. Saline intrusion in 2019–2020 in Ben Tre and adaptation measures of Luong Quoi Coconut Export JSC

The severe saline intrusion in Ben Tre province during the 2019–2020 dry season posed an existential threat to the region's coconut industry. The prolonged presence of saltwater caused “saline shock,” severely impacting coconut trees and leading to reduced fruit size and lower yields for up to 3 years. This created a dual challenge: farmers saw minimal revenue despite rising prices, while export enterprises faced a raw material shortage that drove up costs and eroded their international competitiveness.

Established in 1997 in Ben Tre, Luong Quoi Coconut Processing Co., Ltd. has grown to become a leading producer and exporter of coconut products in Viet Nam. The company manufactures a diverse range of products, including desiccated coconut, virgin coconut oil, coconut milk, and canned coconut water, all under the Vietcoco brand. The company has successfully entered demanding markets like the United States, Canada, and Europe and has been recognized as a Vietnam National Brand for many consecutive years.

In response to this saline intrusion, Luong Quoi implemented an adaptation strategy focused on a sustainable, organic supply chain:

- **strategic supply chain restructuring:** The company's core measure was developing a large-scale organic coconut farming area, aiming for 10,000 hectares by 2025. This initiative went beyond a simple switch; it was a fundamental shift toward a more sustainable model. The company promoted the use of biological byproducts as organic fertilizer to improve soil health and structure. This enhances the soil's ability to retain fresh water, buffering the effects of saline water intrusion and making the coconut trees more resilient to shocks.

⁶ The concept of climate-smart agriculture seeks to improve the integration of agricultural development and climate responsiveness.



- **knowledge and financial support:** Luong Quoi understood that the strategy's success depended on farmer participation. The company thus provided support, including technical training, on-site support from its staff, and financial assistance to rehabilitate coconut groves. To incentivize participation and ensure a stable supply, Luong Quoi guaranteed a purchase price 10%–15% higher than the market rate.

This win–win approach not only secured the company's future but also empowered the farming community, demonstrating how a private enterprise can transform a climate crisis into an opportunity for mutual resilience and sustainable development.



4.0 Identification of Key Adaptation Goods and Services for Viet Nam's Agricultural Sector

To implement the adaptation priorities and actions listed in the previous section, the field research highlighted several adaptation goods and services as critical to advancing adaptation in Viet Nam's agriculture. The following list should be understood as a snapshot of goods and services currently seen as needed by public and private actors in the agricultural sector to adapt to climate impacts. Therefore, this is neither an exhaustive nor a static list of goods and services needed to implement Viet Nam's 27 adaptation priorities for agriculture. Evolving climate change adaptation needs, technological advancements, and developments in trade and consumer choices will likely affect the types and quantities of needed adaptation goods and services in Viet Nam. The goods and services identified below should be used as a starting point by trade policy-makers in their efforts to ensure access to crucially needed goods and services for specific adaptation challenges. Adaptation policy-makers should make sure to regularly review and update this list in line with their evolving NAP process and adaptation priorities.

4.1 Adaptation Goods

The research revealed that different regions require different adaptation goods, highlighting the importance of context-specific adaptation goods lists. For example, Viet Nam's northern region emphasizes cold-tolerant crop varieties, soil stabilization technologies, and small-scale irrigation, while provinces in the central region prioritize drought-resistant crops, decentralized water storage, and storm-resilient infrastructure. In the southern region, particularly the Mekong Delta, priorities include salt-tolerant rice varieties, brackish-water aquaculture breeds, and salinity monitoring equipment.

The research team classified the goods into four categories, according to primary adaptation function in agricultural production and value chains: (i) climate-resilient crop and livestock varieties, (ii) efficient irrigation systems, (iii) post-harvest handling and storage equipment, and (iv) protective infrastructure. Tables 3–6 give a more specific overview of which adaptation goods have been identified as a priority, and why. The findings are in line with Viet Nam's Technology Needs Assessment from 2012, which identified heat- and saline-tolerant plant genetics and breeding, as well as shifting from rice to more flood- and drought-resistant upland grains like maize as prioritized adaptation technology in agriculture (Socialist Republic of Vietnam, 2012). It is important to note that the HS has its own set of limitations: for example, the rice for seed and that for food consumption are classified under the same code. No adaptation-specific codes are available either, and so the codes provided can be used in further research for trade flow analysis. However, the data gathered based only on these codes will not be as precise as this research team would prefer.



Climate-Resilient Crop and Livestock Varieties

Drought-resistant and salinity-tolerant varieties are fundamental to sustaining yields in vulnerable regions like the Mekong Delta and the South-Central Coast. Developed through genetic modification or selective breeding, these varieties can withstand prolonged dry spells or high salinity levels in soil and water. Although rice remains the primary crop in the Mekong Delta, research on climate-resilient varieties has also extended to other crops, such as beetroot and maize.

Table 3. Adaptation goods for climate-resilient crops and livestock

No	Categories	Goods/technologies	HS code
1	Drought-tolerant seeds and planting goods	Rice	1006.10
		Other leguminous seeds, for sowing	1209.91
		Other seeds, of a kind used for sowing	1209.99
		Maize seed	1005.10
2	Seed coatings and treatments to improve stress tolerance	Insecticides, fungicides, or similar products	3808.93
		Organic surface-active substances used as coating for seeds	3403.11
		Other mineral or chemical fertilizers	3105.90
		Other prepared binders for foundry moulds or cores, chemical products, and preparation of the chemical or allied industries, not elsewhere specified or included	3824.99
		Other cellulose ethers	3912.39
		Other polyether	3911.90
		Other articles of plastics	3926.90
3	Disease prevention and veterinary inputs	Vaccines and veterinary medicines	3002.90
		Probiotics and feed additives for resilience	3102.70

Source: Compiled by authors based on field research.

Efficient Irrigation Systems

Technologies and infrastructure designed to optimize and minimize water usage in agriculture. These include drip irrigation systems to deliver water directly to plant roots, reducing water loss from evaporation and runoff—an approach that is seeing widespread uptake across Viet Nam; sprinkler and precision irrigation systems that use sensors and data analytics to apply water only when and where it is needed, improving water use efficiency and crop yields; and rainwater harvesting systems to capture and store rainwater for later use in irrigation and improved canal lining to reduce water loss in transit.

**Table 4.** Adaptation goods for irrigation

No	Categories	Goods/technologies	HS code
1	Drip irrigation systems	Mechanical appliances for projecting, dispersing, or spraying liquids for agriculture or horticulture (this is a general code for irrigation systems)	8424.82
		Mechanical sprayers, suitable for agricultural or horticultural use	8424.81
		Parts of agricultural or horticultural sprayers	8424.90
		Other agricultural machinery for irrigation	8424.89
		Filtering machinery and apparatus for water	8421.20
		Other taps, cocks, valves and similar appliances for pipes, boiler shells, tanks, vats or the like, including pressure-reducing valves and thermostatically controlled valves	8481.80
		Other pumps for liquids, whether fitted with a measuring device (pumps for irrigation and water management)	8413.81
		Other tubes, pipes, and hoses of plastics, not reinforced or otherwise combined with other materials, without fitting	3917.32
2	Precision irrigation	Instruments for automatically controlling irrigation	9027.80
		Other measuring or checking instruments, appliances, and machines, not specified or included elsewhere	9031.80
		Meteorological instruments and appliances	9015.80
3	Water harvesting and storage systems (tanks, cisterns)	Water tanks, plastic	3923.21
		Other articles of plastics for water storage	3926.90
		Reservoirs, tanks, vats, and similar containers of plastics of a capacity exceeding 300 l	3925.10
		Reservoirs, tanks, vats, and similar containers for any material (other than compressed or liquefied gas), of iron or steel, of a capacity exceeding 300 l	7309.00
		Centrifugal pumps, single stage, with a discharge outlet diameter not exceeding 100 mm	8413.70
		Filtering machinery and apparatus for water	8421.21



No	Categories	Goods/technologies	HS code
4	Improved Canal lining	Other plates, sheets, film, foil and strip, of polymers of ethylene, non-cellular and not reinforced, laminated, supported or similarly combined with other materials	3920.10
		Other articles of plastics and articles of other materials of headings 39.01 to 39.14	3926.90
5	Bio stimulants and soil amendments to improve water use efficiency	Mineral or chemical fertilizers in certain forms	3105.10

Source: Compiled by authors based on field research.

Post-Harvest Handling and Storage Equipment

Viet Nam is losing a significant amount of its harvested crops, especially fruits and vegetables, because of its hot and humid climate. This problem is getting worse due to climate change, as floods and heat waves spoil crops and disrupt supply chains. To combat this, Viet Nam needs technologies and equipment that improve the quality and shelf life of agricultural products after they are harvested.

Table 5. Adaptation goods for post-harvesting

No	Categories	Specific commodities	HS code
1	Agricultural dryers	Dryers for agricultural products	8419.31
2	Hermetic and air-tight storage system	Flexible plastic bags and liners	3926.90
		Metal reservoirs, tanks, and containers used for storage	7309.00
3	Refrigerated and controlled atmosphere storage facilities	Other refrigerating or freezing chests, cabinets, display counters, and similar storage units	8418.50
		Other refrigerating or freezing equipment, which would include large-scale cold storage rooms	8418.69
		Refrigerators	8418.31
		Other plastic sheets for insulation	3920.99



No	Categories	Specific commodities	HS code
4	Sorting, grading, and packaging machinery	Machines for cleaning, sorting, or grading eggs, fruit, or other agricultural produce	8433.60
		Filling, closing, sealing, or labelling machinery	8422.30
5	Cooling system for transport	Refrigerated containers and other transport-related chilling equipment	8418.69
6	Ventilated storage rooms and silos	Parts of refrigeration equipment	8419.89
		Parts of air or gas compressors (for cooling systems)	8421.39
		Containers of iron or steel for storage (silos)	7311.00

Source: Compiled by authors based on field research.

Protective Infrastructure⁷

Includes climate-resilient sea dikes, sluice gates, and coastal embankments to control saltwater intrusion and protect against storm surges and coastal erosion.

Table 6. Adaptation goods for infrastructure

No	Categories	Goods/technologies	HS code
1	Sea dikes, coastal embankments, seawalls	Pebbles, gravel, broken or crushed stone, of a kind commonly used for concrete aggregates, road metaling, or railway ballast.	2517.10
		Bricks, tiles, blocks, and similar articles of cement, concrete, or artificial stone, whether reinforced. This covers the pre-cast concrete structures used for seawalls and dikes.	6810.11
		Gypsum; anhydrite. This is a possible code for materials used in marine construction, as indicated by a search result pointing to “marine” applications of this code.	2520.10
		Plates, sheets, film, foil, and strip, of plastics, non-cellular and not reinforced, laminated, supported, or similarly combined with other materials. This could be used for the specialized geotextile materials that are used for soil stabilization and preventing erosion behind the main structures.	3920.94

⁷ Infrastructure is often identified as an adaptation priority sector in itself. The goods listed in Table 6 are included, as they are highly relevant to adaptation in agriculture.



No	Categories	Goods/technologies	HS code
1	Sea dikes, coastal embankments, seawalls (cont'd)	This is a broad category for structures and parts of structures of iron or steel. This could apply to any steel sheet piling, reinforcing bars, or other steel components used in the construction of seawalls and other coastal protection works.	7308.90
2	Sluice gates and associated infrastructure	Structures and parts of structures of iron or steel.	7308.90
		Hydraulic power engines and motors. This applies to the hydraulic cylinders and their components used to lift and lower the massive gates.	8412.21
		Other pumps for liquids.	8413.81
		Boards, panels, consoles, desks, cabinets, and other bases, equipped with two or more apparatus of heading 8535 or 8536, for electric control or the distribution of electricity.	8537.10

Source: Compiled by authors based on field research.

4.2 Adaptation Services

The research revealed different types of services provided to support adaptation in agriculture. These are provided by the government, international organizations, the private sector, or cooperatives. Examples include enterprises like Loc Troi Group that are partnering with farmers to build resilient value chains and reduce climate-related risks. Cooperatives provide technical training on climate-smart agricultural practices and link farmers to high-value markets. In **Phu Yen**, companies are engaged in aquaculture research projects.

Provincial governments are providing financial support and tax incentives for agricultural development while prioritizing services for trade promotion and connecting farmers to high-value, eco-friendly markets to ensure economic returns on adaptation efforts. In addition, critical services like water quality monitoring and advanced disease detection are being used to provide early warnings for potential risks, particularly in the aquaculture sector. Authorities reported that services like agricultural insurance, which is a crucial tool for managing climate risks, are not popular due to the extremely high risk of agricultural products and activities. In the central region (**Quang Nam, Thua Thien Hue**), adaptation efforts include improved early warning systems and the construction of storm-resilient houses. These services, often supported by international organizations, are crucial for protecting vulnerable communities from catastrophic weather events. Specific services fall into the following categories:

- **consulting and capacity-building services** such as training on the use of climate-smart agricultural practices, technical support for value chains and aquaculture-related services, disaster management training, or facilitating knowledge sharing workshops;
- **analytical and data services** like water quality monitoring, storm warning systems and weather forecasting, and research into new technologies.



- **financial and market services** such as tax exemptions or reductions; preferential credit mechanisms, market linkage and trade promotion, and agricultural insurance.
- **information and early warning system services**, including advanced disease detection, risk and vulnerability mapping, and communication networks.
- **engineering and construction services** like the construction of storm- and flood-resilient houses.



5.0 Identification of Trade Barriers to Adaptation Goods and Services in Viet Nam's Agricultural Sector

While the previous section identified lists of specific goods and services most relevant to Viet Nam's adaptation priorities, it did not assess their availability in the Vietnamese market. Nor did it analyze the specific trade flows of such goods to determine where they can be sourced. Both of those important aspects were outside the scope of this study and might be picked up by further work. However, the following section aims to identify the main barriers that adaptation goods and services may face when entering the Vietnamese market. While some of those barriers might be clearly linked to the accessibility of specific goods or services, others might be more generic and apply to several of them. When aiming to make some of those adaptation goods and services more accessible within their market, policy-makers may want to review the barriers identified below and assess whether the urgency of adaptation challenges warrants trade-facilitating adjustments.

5.1 Trade Barriers on Adaptation Goods

Tariff Barriers

For Viet Nam, tariffs no longer represent the primary obstacle to the flow of adaptation goods. This shift is largely driven by the country's pursuit of global economic integration. Since its accession to the WTO in 2007, the country has signed over 17 FTAs, including “new-generation” agreements like the Comprehensive and Progressive Agreement for Trans-Pacific Partnership and the European Union (EU)–Viet Nam Free Trade Agreement.

These FTAs have mandated a progressive and substantial reduction in most-favoured nation (MFN) tariffs.⁸ However, despite the overarching trend toward liberalization, specific adaptation goods continue to face cost pressures from residual tariffs (those still in place) or misclassification issues.

For instance, when it comes to misclassification of high-tech inputs, while broad categories such as machinery or electronic equipment are liberalized, highly specialized equipment—such as hydrological sensors and precision irrigation components—sometimes fall under residual tariff lines. Because these are not explicitly categorized as “environmental goods” under existing FTA schedules, they are ineligible for 0% tariff rates, increasing the cost of technology adoption for farmers.

Sensitive agricultural commodities, which are often relevant for adaptation (like certain rice varieties), are still managed through tariff-rate quotas. For example, under the EU–Viet Nam

⁸ MFN tariffs are the standard, non-discriminatory trade rates that WTO members apply to imports from other WTO members. Under WTO rules, any advantage or lower tariff granted to one country must automatically be extended to all other WTO members, ensuring fair competition.



Free Trade Agreement, Vietnamese rice exports to the European Union are capped at 80,000 tons per year to enjoy a 0% tariff. Amounts exceeding this are subject to higher duties, which may limit the economic returns on adaptation efforts intended to boost export volume.

Non-Tariff Barriers

While tariffs on the import of most goods have been gradually decreasing through the progressive liberalization efforts of Viet Nam's trade negotiations, other requirements and procedures might still create barriers to trade. Those are the so-called non-tariff barriers (NTBs)—measures such as product registration or testing requirements, or the obligation to obtain specific authorization or certification that ensure that a product is allowed to circulate in the Vietnamese market. These measures might be legitimate for protecting domestic human, animal, and plant health. However, they may create market access challenges, increase costs, and introduce complexity for foreign businesses, thus acting as NTBs. As such, reducing trade barriers to ease access to adaptation goods can face a policy trade-off vis-à-vis import control and protection measures. While none of these barriers are specific to adaptation goods, they might still impact their availability or costs.

- **sanitary and phytosanitary (SPS) authorization requirements:** Obligations to get authorization from a designated agency before the import of specific animals, plants, or their products. These requirements act as gatekeepers, preventing entry without official vetting, which can delay shipments and add bureaucratic layers. These measures, while legitimate for protecting domestic human, animal, and plant life and health, create market access challenges, increase costs, and introduce complexity for foreign businesses, thus acting as NTBs. This is relevant for adaptation goods such as salt-tolerant and brown planthopper-resistant rice varieties for coastal areas, drought-resilient soybean varieties, and sugarcane for arid regions.
- **labelling requirements:** These are demands that a specific type of information be clearly provided on the product's label. Viet Nam's specific and mandatory labelling requirements function as an NTB for imported products by creating high compliance costs and technical hurdles. These include highly detailed and mandatory technical requirements for label content, particularly for plants, animals, and aquatic breeds. For instance, seeds for salt-tolerant rice or drought-resistant maize must feature labels specifying the duration of the growth cycle, resistance levels to specific pests, and detailed moisture content. If original packaging from global suppliers lacks these precise Vietnamese-mandated metrics, importers must undergo costly relabelling in bonded warehouses. Water-retention polymers and specialized bio-fertilizers used for soil adaptation must include exhaustive lists of ingredients, expiry dates, and specific usage instructions for Viet Nam's unique ecological zones. For high-tech, low-volume imports, the cost of designing and producing these localized labels can render the product economically unviable for small-scale distributors.
- **product registration and approval requirements:** Some goods might face a requirement to be registered or approved before importing to make sure that the import does not create risks for the users or ecosystems. Imported climate-resilient breeds, like high-yield, salinity-resistant shrimp larvae, salt-tolerant rice varieties, and



bio-fertilizers, often face a complex multi-layered system of SPS and technical barriers to trade measures. These NTBs create mandatory, pre-market entry hurdles, which can discourage, delay, and increase the cost of introducing adapted foreign breeds into the Vietnamese market.

- **testing requirements:** These are requirements to undergo specific tests to ensure that a product meets a certain standard before accessing Viet Nam's market. They apply to salt-tolerant rice seeds and post-larvae shrimp, drought-resistant maize hybrid, heat-tolerant poultry breeds, high-yield, disease-resistant cattle breeds, heat-tolerant fruit tree saplings, and natural predators or beneficial insects used in integrated pest management to combat climate-driven pest surges without chemical pesticides. While these regulations mandate products to be tested against a specific standard to ensure they meet certain public policy objectives, such as public health, food safety, or environmental protection, they can also increase the fixed and variable costs of trade and create administrative complexity for adaptation goods (e.g., new breeds, animal feeds).
- **certification requirements:** These are specific documents or approvals that must be obtained either from the exporting country's competent authority or from Vietnamese regulatory bodies before products can enter the market. The requirement for multiple, layered certifications significantly affects the trade of adaptation goods, such as probiotics that enhance livestock immunity during extreme heat, water-retention polymers for soil moisture, and specialized vitamins for aquaculture stress management by increasing compliance complexity, raising costs, and challenging the principle of mutual recognition.
- **traceability requirements and origin of materials and parts:** These are requirements that often require lengthy documentation and record keeping, and put external verification burdens on exporters of adaptation goods to Viet Nam. This applies, amongst others, to salt-tolerant fruit tree saplings, drought-resistant vegetable seeds, and resilient fresh produce imported to stabilize food security during local crop failures. While these measures are designed to enhance food safety and control genetic resources, they can also restrict trade flows.

5.2 Trade Barriers on Adaptation Services

Unlike adaptation goods, which are subject to tariffs and customs procedures, adaptation services such as specialized weather forecasting, agricultural insurance, and climate-smart agricultural extension services are governed by a complex web of domestic regulations, licensing requirements, and investment laws.

While tariffs do not apply to services, a range of regulatory measures embedded in Viet Nam's domestic legislation can act as barriers to the entry and operation of international service providers in the country. These barriers are rooted in the country's laws and ministerial decrees that govern professional qualifications, licensing, and data security, but may at times have a negative impact on trade.



Restrictions on Foreign Equity and Commercial Presence

For services requiring a local presence, such as environmental testing, agricultural extension, and site monitoring, Viet Nam's regulations often impose limitations on foreign ownership.⁹ While significantly liberalized in recent years, certain “sensitive” sectors may still require joint ventures with a local partner. They may also include restrictions on foreign equity (ownership cap), which limit the percentage of capital a foreign investor can hold, as well as restrictions on commercial presence by mandating a specific form of investment. The necessity of finding, vetting, and negotiating a compulsory partnership increases start-up time, administrative burden, and transactional costs. This can limit a foreign provider's operational control and strategic decision making and act as a significant entry barrier for specialized foreign firms seeking to provide adaptation solutions.

Licensing and Qualification Requirements

Providing professional services in Viet Nam is contingent upon meeting specific licensing and qualification standards. According to Decree 219/2025/ND-CP on foreign labour, foreign experts like climate modellers, agronomists or engineers must obtain a work permit. The specialized and interdisciplinary nature of adaptation expertise can make it difficult to prove the required “expert” status using traditional classification methods, leading to delays or rejection. Additionally, based on the Law on Environmental Protection from 2020, technical and consulting services related to environmental impact assessments—closely linked to adaptation services—may require specific certificates of competency or practice certificates issued by Vietnamese authorities. Foreign professionals must have their foreign credentials reviewed and often localized. The process of obtaining necessary permits to work and operate can be lengthy and administratively burdensome, creating a barrier to the cross-border movement of technical experts. These NTBs restrict the trade in specialized adaptation services, primarily by increasing cost, time, and regulatory risk.

Data and Digital Policy Regulations

The delivery of modern climate and weather information services heavily relies on the cross-border flow of data and the use of digital platforms. Foreign providers of digital services, including platforms for climate services that collect and process data about users in Viet Nam, may be compelled by the Ministry of Public Security to store data within Viet Nam or establish a branch or representative office in the country. Sophisticated, artificial-intelligence-driven climate models require constant, two-way data flow to improve accuracy. The risk of data flow being interrupted or the mandatory data segregation required for localization might have an impact when offering these services. Viet Nam's legal framework on cybersecurity and data localization,¹⁰ which may require certain data to be stored within the country, is currently evolving. It might be important to better explore the extent to which these rules would affect the transfer of non-personal scientific or meteorological data to ensure they do not cause significant operational hurdles for international providers of sophisticated climate modelling and forecasting services.

⁹ The restrictions on foreign equity and commercial presence for adaptation services is based on the negative list for market access for foreign investors, primarily outlined in Appendix 1, Part B of Decree 31/2021/ND-CP.

¹⁰ E.g., Cybersecurity Law 2018 (Article 26) & Decree 53/2022/ND-CP.



6.0 Conclusions

This section takes stock of the findings and presents a set of policy recommendations aimed at strengthening the role of trade and trade policy in facilitating access to key climate adaptation goods and services for Viet Nam's agricultural sector.

6.1 Lessons Learned and Next Steps

This report highlights that the role of trade in supporting climate change adaptation in Viet Nam's agricultural sector is both significant and still underexplored. One key lesson is that identifying adaptation goods and services in practice requires a highly contextualized approach: what matters for adaptation depends on specific climate risks, production systems, and regional conditions, rather than on fixed product categories alone. Identification of adaptation goods and services takes time, and the lists need to be regularly updated to ensure they remain relevant to the adaptation priorities. At the same time, the analysis shows that more work is needed to distinguish which adaptation goods and services are likely to depend on imports, foreign expertise, or international cooperation. Developing this evidence base would help policy-makers better target trade facilitation, industrial policy, and investment support measures.

The list of adaptation goods and services developed in this report can serve as a practical reference for both trade and adaptation policy-makers. For trade policy-makers, it can help identify priority products and services for review in tariffs, customs procedures, standards, and services regulation. For adaptation policy-makers, it can support the implementation of the NAP by clarifying which goods and services are needed to advance priority actions, where domestic supply may be sufficient, and where imports, foreign expertise, or international cooperation may be required. Over time, the list could also be updated through regular consultation with agricultural producers, businesses, and technical agencies to reflect evolving climate risks, technologies, and market conditions.

A second lesson is that analyzing barriers to adaptation services—particularly climate information, early warning systems, and insurance services—deserves further attention. The effectiveness of climate services increasingly depends on data sharing, interoperability, and regional cooperation. As a next step, further research could examine how Viet Nam can strengthen access to climate services through trade and data-sharing arrangements, including with regional mechanisms and institutions such as the Mekong River Commission. Similar to analyzing the local availability of adaptation goods, further research should identify which services are unavailable in the national market and need to be secured internationally, and which barriers need to be addressed to ease access. This should include access to agricultural insurance.

More broadly, future work could build on the report's findings by refining the list of adaptation goods and services over time, assessing barriers to their uptake in greater detail, and supporting a more systematic integration of adaptation priorities into trade policy design and implementation. The conversation about the importance of imports and Viet Nam's domestic manufacturing capacity for some of the goods and services should be continued at



the research and policy level. One issue that this research did not address but which is equally important is Viet Nam's role as the exporter of the goods and services that are needed for its adaptation priorities, thus supporting other countries in the region facing similar challenges.

6.2 Recommendations for Trade and Adaptation Policy-Makers

Establish and Regularly Review a List of Adaptation Goods and Services for the Agricultural Sector

Building on the list provided in this report, Viet Nam could establish an official category of adaptation goods and services, closely drawing from private sector experience and consultations with actors in the agricultural sector across the different provinces. The process of collecting this data could be led by MAE with support from different line ministries. Provincial governments might be best placed to report on goods and service needs, as this research highlighted the varying adaptation needs of provinces. Viet Nam's MEL system for the NAP process already captures some data on the use of adaptation goods and services in agriculture, which could be complemented by surveys among the private sector as used in this report (detailed questionnaire see Appendix B). The government agencies involved in this process, including agriculture and water ministries, should regularly assess the availability and costs of such goods and services to ensure that trade policy can be properly employed to support the adaptation goals. This list could be regularly reviewed and updated in accordance with updated risk and vulnerability assessments, as well as related adaptation priorities, as part of Viet Nam's NAP process and MEL system.

Establish a Formal Mechanism of Cooperation Between Key Agencies to Regularly Review the Interaction Between Trade Policy and Adaptation Priorities

National authorities should put in place a coordination mechanism between adaptation, agriculture, potentially water and infrastructure, and trade policy-makers to review and identify how trade policy can support the implementation of adaptation priorities, including through the increased accessibility of the prioritized adaptation goods and services. This mechanism could also help raise awareness among trade and agriculture policy-makers of changing adaptation needs while informing adaptation as well as water and agriculture policy-makers about the levers and barriers of trade policy for climate adaptation.

Adjust Trade Policy to Facilitate the Importing of Needed Adaptation Goods and Services

Tariffs: Reducing the costs of adaptation goods

- **reducing import tariffs for adaptation goods:** Based on the list of adaptation goods, authorities can justify and implement the elimination of MFN import tariffs on some or all the items on this list. While average tariffs are low due to FTA



commitments, the research presented finds that significant barriers remain for specific categories. High-tech components often face residual tariffs due to misclassification, and raw materials and core minerals are still subject to substantial duties ranging from 5% to 40%. These specific cases continue to impose cost pressures despite the general trend toward liberalization. Where relevant, tariff reductions have the potential to further reduce costs of adaptation projects and increase the availability of necessary equipment in Viet Nam's domestic market. More broadly, trade policy should be strategically utilized to promote the production and trade of climate-smart agricultural commodities, including through preferential tariffs, export incentives, and support for value-added processing of products that are less vulnerable to climate risks. Such measures will encourage the adoption of climate-resilient practices and enhance the sector's overall adaptive capacity.

- **strengthening and simplifying tax exemptions:** This measure could help reduce the administrative burden for agribusinesses and technology importers when claiming import duty and value-added tax exemptions for certified adaptation equipment. Additionally, laws governing import taxes and customs duties could be amended to explicitly include all goods imported for certified adaptation projects or other designated climate resilience activities as automatically eligible for duty exemptions. By shifting the focus from technical HS code classification to the demonstrated purpose of the goods within an approved adaptation program, the government can streamline customs procedures. This approach will increase the predictability of final import costs and reduce the administrative burden when importing adaptation technologies.

Non-Tariff Measures: Reducing regulatory friction

- **improving regulatory pathways for climate-resilient agricultural inputs.** SPS authorizations, product registration and approval procedures, testing requirements, and certification obligations play an important role in safeguarding human, animal, and plant health. Continued efforts to improve the transparency, coordination, and efficiency of these processes could facilitate access to climate-resilient seeds, breeds, and agricultural technologies while preserving regulatory objectives. Pursuing mutual recognition agreements (MRAs) with trading partners might also contribute to cost reduction and availability of adaptation goods.
- **reducing compliance complexity associated with market entry requirements.** Labelling, certification, and traceability requirements can be particularly demanding for specialized adaptation goods. Further alignment with international practices, wider use of digital systems, and greater recognition of equivalent foreign documentation could help reduce compliance costs and administrative burdens, particularly for innovative and low-volume products needed to strengthen climate adaptation efforts in agriculture.

Services: Enhancing technical expertise and facilitating data flows

- implementing MRAs for professional qualifications to overcome the NTBs that restrict international experts' mobility where local expertise is not available: This would require prioritizing the negotiation of MRAs with key trading partners for specialized technical services for adaptation, such as climate-resilient engineering, hydrological



consulting, and climate risk assessment. Such MRAs would formally recognize the professional licences and certifications obtained abroad as equivalent to domestic standards in Viet Nam. This has the potential to allow foreign experts to be deployed quickly and cost-effectively, facilitating the transfer of specialized knowledge and high-tech adaptation solutions into the local market without the need for expensive and time-consuming local re-certifications.

- **streamlining work permits and visa procedures:** Viet Nam should establish a fast-track visa and work permit regime specifically designed for foreign specialists whose expertise is critical to advancing the country's adaptation priorities as per its NAP. This policy action would remove the procedural NTBs associated with the movement of natural persons, reducing the time required to mobilize international experts, helping ensure the availability of experts for time-sensitive adaptation projects.
- **making sure that data flow facilitation and harmonization clauses of the FTAs support the use of modern climate services:** This requires integrating provisions into FTAs that support the necessary flow of non-personal data (e.g., raw climate model outputs and sensor data) across borders, while still protecting personal data according to each jurisdiction's priorities. Furthermore, it is important to ensure that domestic regulatory requirements do not hinder the engagement of international climate service providers.

Leveraging International Cooperation to Support Trade and Adaptation

- **using FTAs to support adaptation objectives:** capacity-building and technical assistance provisions could support the implementation of trade-related reforms relevant to adaptation, including customs modernization, regulatory harmonization for professional services, and the development of verification systems to certify the climate credentials of imported adaptation goods. In future FTA negotiations, Viet Nam could seek to incorporate climate adaptation objectives for agriculture more explicitly, including provisions that facilitate trade in climate-resilient seeds, technologies, and inputs through the reduction of tariffs and NTBs. Such integration could enable Vietnamese agricultural producers to access and adopt innovative practices and technologies that enhance their resilience to climate variability and extreme weather events.
- **mobilizing technical assistance, climate finance, and capacity building:** Viet Nam should actively seek technical and financial assistance from international organizations and development partners to support the integration of trade and adaptation policies in the agricultural sector. Participation in global initiatives and the utilization of climate finance mechanisms can facilitate the transfer of knowledge, technology, and resources necessary for effective adaptation. Capacity-building initiatives should also strengthen the ability of regulatory authorities and the private sector to comply with evolving trade and climate adaptation requirements. Transparent dissemination of information regarding SPS and technical barriers to trade measures, as well as adaptation-related trade opportunities, would further support informed decision making and the effective implementation of trade-related adaptation policies.



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Appendix A. List of Interviewees

Interviewee	Organization/Individual	Location
1	Department of Agriculture and Environment (Climate change)	Ben Tre
2	Department of Agriculture and Environment (Agricultural Extension)	Ben Tre
3	Department of Fisheries	Ben Tre
4	Department of Industry and Trade	Ben Tre
5	Binh Phu Rambutan Cooperative	Ben Tre
6	Mekong Fruit Import-Export Co., Ltd	Ben Tre
7	Luong Quoi Coconut Export JSC	Ben Tre
8	Department of Agriculture and Environment (Climate Change)	Khanh Hoa
9	Department of Fisheries (Fishing)	Khanh Hoa
10	Department of Fisheries (Aquafarming)	Khanh Hoa
11	Department of Industry and Trade	Khanh Hoa
12	Long Sinh Co., Ltd	Khanh Hoa
13	Hai Vuong Co., Ltd	Khanh Hoa
14	Thien Khang Bird's Nest	Khanh Hoa
15	Nha Trang Seafood F17	Khanh Hoa
16	Department of Agriculture and Environment (Climate Change)	Phu Yen
17	Department of Agriculture and Environment (Agriculture extension)	Phu Yen
18	Department of Fisheries	Phu Yen
19	Department of Industry and Trade	Phu Yen
20	Ba Hai Co., Ltd	Phu Yen
21	Farmer Union	Phu Yen
22	Phu Yen Agriculture Cooperative	Phu Yen
23	Department of Agriculture and Environment (Climate Change)	Ca Mau
24	Department of Fisheries (Fishing)	Ca Mau
25	Department of Fisheries (Aquafarming)	Ca Mau



Interviewee	Organization/Individual	Location
26	Department of Industry and Trade	Ca Mau
27	Minh Phu Seafood Corporation	Ca Mau
28	Farmer Union	Ca Mau
29	Department of Agriculture and Environment (Climate change)	Trà Vinh
30	Department of Agriculture and Environment (Agricultural Extension)	Trà Vinh
31	Department of Fisheries	Trà Vinh
32	Department of Industry and Trade	Trà Vinh
33	Farmer Union	Trà Vinh
34	Trà Vinh Food-stuffs and Agricultural products company	Trà Vinh
35	Trà Cu Rice-Shrimp Cooperative	Trà Vinh
36	Department of Agriculture and Environment	An Giang
37	Department of Fisheries	An Giang
38	Department of Industry and Trade	An Giang
39	Nam Viet Corporation (NAVICO)	An Giang
40	Angimex	An Giang
41	Loc Troi Group	An Giang
42	Farmer Union	An Giang
43	Department of Agriculture and Environment	Quang Nam
44	Department of Fisheries	Quang Nam
45	Department of Industry and Trade	Quang Nam
46	Hoi An Organic Agricultural Cooperative	Quang Nam
47	Vinaseed Quang Nam Co., Ltd	Quang Nam
48	Department of Agriculture and Environment	Thua Thien Hue
49	Department of Fisheries	Thua Thien Hue
50	Department of Industry and Trade	Thua Thien Hue
51	HueFOREXIM	Thua Thien Hue
52	Hue Organic Agricultural Cooperative	Thua Thien Hue
53	Phu Da Clean Agricultural Cooperative	Thua Thien Hue
54	Thua Thien Hue Aquatic Seed Center	Thua Thien Hue



Appendix B. Survey Questionnaires

A. Questions for government agencies

(Department of Agriculture and Environment; Department of Industry and Trade; Sub-Department of Fisheries)

1. Impacts of Climate Change and the Implementation of Adaptation Activities in Targeted Localities

- What climate-related risks (drought, salinization, storms, floods, etc.) has the locality been facing?
- What is the status of implementing the national adaptation plan (NAP) to climate change in the province? (key outcomes, challenges, and obstacles)
- What climate change adaptation activities have been implemented in the province?
- What climate adaptation activities in the agricultural sector have been implemented in the province?

2. Agricultural Trade and the Role of State Management

- What are the province's key agricultural products with export potential?
- Are there any policies or initiatives in place to support international market access for agricultural products?
- What is the current status of implementing preferential tax policies on imports serving agricultural investment projects, support for restoring agricultural production in disaster-affected areas, or mechanisms to encourage enterprises to invest in agriculture and rural areas?
- Does the locality encourage farmers/enterprises to apply climate-adaptive technologies in agricultural production?

3. Policies and Barriers

- What are the main policies, infrastructures, or market-related barriers the locality encounters in promoting the export of climate-adaptive goods and services?
- Are there any existing support policies for climate adaptation-related goods, technologies, or services (e.g., saline-resistant varieties, water-saving irrigation systems)?
- Does the locality have any policy recommendations for import-export regulations to support climate change adaptation in the agricultural sector?



B. Questions for Enterprises

(Exporters, agricultural producers, processors, input suppliers, etc.)

1. Climate Impacts and Responses

- How has the business been affected by climate change in recent years?
- Has climate change impacted the enterprise's access to markets or its export capacity?
- Has the business implemented any climate adaptation solutions (e.g., water-saving irrigation, variety replacement, regional linkages, etc.)? If so, please list the solutions and indicate which one has been the most effective.
- What products or services are necessary for the enterprise to restore production and enhance its adaptive capacity to extreme weather and climate change?

2. Policy and Trade Support

- Does the enterprise find it easy to access climate-adaptive inputs, varieties, and technologies?
- Are these climate-adaptive inputs, varieties, and technologies domestically produced or imported?
- In cases of importation, are there any difficulties related to taxation, customs procedures, or logistics?
- Has the enterprise received any support (in terms of policies, services, or finance) from local authorities, banks, or international organizations to enhance climate resilience?
- What recommendations does the enterprise have for government support to maintain operations and adapt to climate change?

3. Export Markets

- Which products of the enterprise have been exported or have export potential?
- Do international customers have any specific requirements or standards related to "climate-adaptive products" or "sustainable products"?
- Is the enterprise able to meet these requirements? If not, please specify the barriers and the needs to fulfill these standards.

C. Questions for Associations/Cooperatives

(Farmer associations, women's unions, agricultural cooperatives, etc.)

1. Role of Associations/Cooperatives and Member Support

- What support does the association provide to its members in terms of climate change adaptation and improving agricultural product quality?
- Does the association conduct any training or awareness-raising programs on climate change and trade?



2. Market Access and Linkages

- Do the members have linkages with any enterprises or organizations for agricultural product consumption?
- Are there any barriers encountered when accessing export markets?

3. Policy Recommendations

- What types of support does the association expect from the government regarding trade, climate change adaptation, or enterprise linkage?
- What products/services need to be imported to support production in the circumstances of natural disasters and to enhance climate resilience?

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