

ADAPTATION FINANCE FOR AGRICULTURE

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1. Overview of adaptation finance in agriculture

1.1. Definition & the Importance of Adaptation Finance

1.1.1 Definition

- Adaptation finance seeks to **reduce the vulnerability** of people, places, and livelihoods to the negative impacts of climate change ([UNFCCC, 2022](#)).

1.1.2 Purpose & Importance

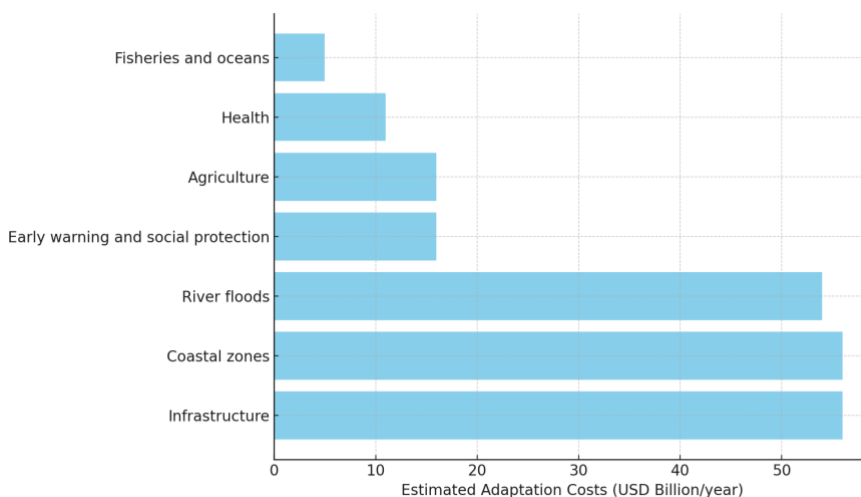
- Make sure that **all investments protect people** – especially the most vulnerable – from climate impacts now and in the future. Building community infrastructures (homes, businesses, schools and hospitals that withstand these shocks and help communities survive and thrive.) ([World Bank, 2024](#))
- Adaptation finance measures could **reduce future impacts almost completely** (residual impacts would be below **5 per cent**) ([UNEP, 2023](#))

1.1.3 Adaptation Finance Market

- The estimated average costs of climate adaptation are around **US\$240 billion** annually this decade (up to 2030) which is equivalent to about **US\$33 per capita per year for developing countries** ([UNEP, 2023](#)).
- In developing countries, annual cost of adaptation alone will be between **\$160-340 billion by 2030** -> public budgets, alone, will not be able to address the financing challenge. ([UNEP, 2023](#))

1.1.4 Adaptation Finance in Agriculture

- Besides water and infrastructure, **agriculture** is one of the three priority sectors which need adaptation finance. ([UNEP, 2023](#))
- Agriculture has an estimated adaptation cost of **USD 16 billion/year from 2015 – 2030** for DCs alone. ([GCA, 2024](#)).



Source: [GCA, 2024](#)

2. Recent Scenario of Adaptation Finance in Vietnam

2.1 Vietnam's Adaptation Finance Needs

- Vietnam has the **3rd largest adaptation finance needs** as per NDC and NAP ([UNEP, 2023](#))
- Total financing needs are estimated at around **\$254 billion** from 2022 to 2040
 - **\$219 billion: upgrading private assets and public infrastructure** such as the Vietnam Irrigated Agriculture Improvement Project (case study used below) or sustainable shrimp farming.
 - **\$35 billion: social programs** (such as building local capacity in community-based disaster risk management.)
- Cost of climate change adaptation is estimated to reach **3-5% of national GDP / year** by 2030 ([CARE, 2020](#))
- Without proper adaptation and mitigation measures, it is estimated climate change will cost Vietnam about **12% to 14.5% of GDP** by 2050 ([World Bank, 2022](#))

2.2 Vietnam's Current Financial Mechanisms Supporting Climate Adaptation

PUBLIC INVESTMENT	INVESTMENT EXPENDITURE	<ul style="list-style-type: none"> • Spending focused on the National Target Program to Respond to Climate Change (NTP-RCC) and disaster risk adaptation projects, especially in water management, coastal protection, and road infrastructure (2010 – 2020). • During 2016-2021, the CC budget for six ministries accounted for 26-38% of their total budget, with a large
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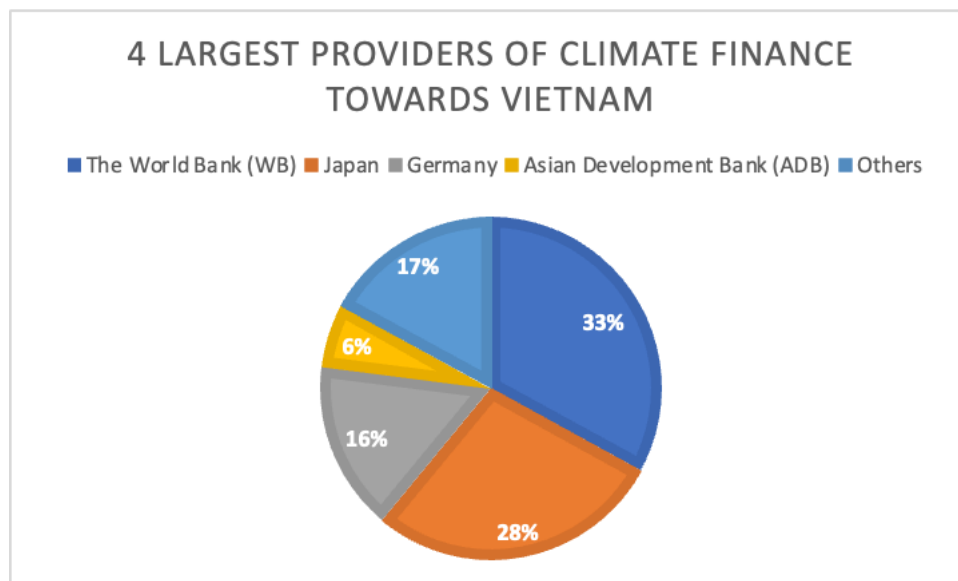
		<p>share going to adaptation and mitigation expenditures, funded through ODA loans.</p> <ul style="list-style-type: none"> There is a total of 800 trillion VND (over 35 billion USD) in outstanding bank loans to agriculture, forestry and fisheries (8% of national total 10) which is concentrated in agri-pro- cessing, livestock and crop production
	RECURRING EXPENDITURE	<p>State budget spending on environmental protection increased by 10.2% annually between 2011-2020. Recurrent expenditure focused on local level activities, which accounted for 85.5% of total state environmental protection spending.</p>
	NATIONAL TARGET PROGRAMS	<ul style="list-style-type: none"> Between 2010-2015, 8 out of 16 NTPs contributed directly to climate adaptation. By 2016-2020, the number of NTPs reduced to 2: Sustainable Poverty Reduction (NTP-SPR) & New Rural Development (NTP-NRD) with the Support Program to Respond to Climate Change as the main financial mechanism. Total capital for NTPs related to climate adaptation was approximately VND 15,866 billion (USD 51 billion) during 2016-2020.
ODA		<ul style="list-style-type: none"> ODA flows to Vietnam for CC have decreased over the years, averaging around USD 2.26 billion per year. The Ministry of Planning and Investment is working to streamline ODA for CC and green growth, targeting areas like disaster resilience.
RESOURCES FROM BUSINESS SECTOR	GREEN CREDIT	<ul style="list-style-type: none"> Green outstanding loans increased from VND 85 trillion (2016) to VND 333 trillion (2020), representing 3.72% of the total loan system. Major areas funded include agriculture (in addition to renewable energy, and sustainable water management).
	GREEN BONDS	<p>Vietnam has issued USD 564 million in green bonds, with USD 148.2 million directed towards adaptation activities.</p>
	PUBLIC-PRIVATE PARTNERSHIP (PPP)	<p>There have been 146 PPP projects focused on climate, with investments totalling USD 2.71 billion, primarily in clean energy and infrastructure.</p>
	AGRICULTURE INSURANCE	<ul style="list-style-type: none"> Provided by Bao Viet, Bao Minh, and VinaRe Reinsurance across 20 provinces. Covered 304,017 farmer households for crop production, livestock, and aquaculture.

		<ul style="list-style-type: none"> • Total insured value: VND 7,747.9 billion (rice: VND 2,151 billion, livestock: VND 2,713.2 billion, aquaculture: VND 2,883.7 billion). • Insurance claims paid: VND 701.8 billion, with aquaculture receiving VND 669.5 billion, rice VND 19 billion, and livestock VND 13.3 billion. • Government support: Decision No. 13/2022/QD-TTg provides premium subsidies for farmers in certain categories (e.g., rice, livestock, aquaculture). (NAP, 2023)
	Bank loans	<ul style="list-style-type: none"> • A total of VND 800 trillion (over USD 35 billion) in outstanding bank loans are allocated to agriculture, forestry, and fisheries sectors. • These loans account for 8% of the national total and are concentrated in agri-processing, livestock, and crop production. (SNV, 2023)

Source: [UNDP, 2023](#), [Vietnam NDC 2020](#), [Vietnam NDC, 2022](#)

2.3 Vietnam's Received Adaptation Finance

- 1,091 climate-related projects (2013-2017) summed to **6.13 billion USD** ([CARE, 2020](#)).
- The 4 largest providers of climate finance towards Vietnam often in form of ODA (2013 – 2017): ([CARE, 2020](#))
 - The World Bank (WB): 33%
 - Japan: 28%
 - Germany: 16%
 - Asian Development Bank (ADB): 6%



Source: [CARE, 2020](#)

2.3.1 Global Initiatives on Adaptation Finance for Agriculture and their Presence in Vietnam

Besides international organizations and foreign governments, Vietnam frequently received capital from specific adaptation finance funds in different forms as part of the funds' projects. Listed below are initiatives that have prominent presence in Vietnam:

	OVERSEEING BODY	OBJECTIVE	INSTRUMENT	PRESENCE IN VIETNAM
Green Climate Fund (GCF)	UNFCCC	accelerates transformative climate action in developing countries through a country-owned partnership approach and use of flexible financing solutions and climate investment expertise.	Grants, Concessional Loans, Equity Investments	- USD 115.8 million to climate change mitigation and adaptation projects in Viet Nam. -Through the International Finance Corporation (IFC), the GCF has provided USD 24 million to implement the Viet Nam Energy Efficiency and Cleaner Production Financing Programme (VEECPF) in the 2010-2015 period as loans from commercial banks. Source: Vietnam NDC, 2022
Global Environment Facility (GEF)	GEF Council World Bank as trustee	support developing countries in achieving sustainability (biodiversity loss, chemicals and waste, climate change, international waters, and land degradation) while meeting international environmental agreements	Mainly grants	76 national projects in Vietnam. 16 active projects at value of USD 65,722,974 Source: GEF, GEF Vietnam

Global Environment Facility (GEF)	GEF is a Specialized United Nations agency	combat rural poverty and hunger by empowering small-scale farmers and rural communities. Focuses on improving agricultural productivity, food security, and rural livelihoods.	Grants & Low-Interest Loan	18 projects - USD 871,000,000 Source: IFAD Vietnam
Climate Investment Funds (CIF)	Trust Fund Committee. -Investments implemented through six Multilateral Development Banks (MDBs) (e.g. World Bank, Asian Development Bank (ADB), etc.)	support developing countries in adopting low-carbon technologies and building climate resilience.	Concessional loans, grants, equity investments, and guarantees	6 projects at value of USD 135,000,000
Viet Nam Environment Protection Fund	State financial institution attached to MONRE	Capital from the state budget and contributions towards finance environmental protection activities nationwide (FAO, 2008)	Soft loans, loan interest, loan guarantees.	Charter capital is VND 500 billion (USD 21,000,000), with additional annual allocations from the state budget

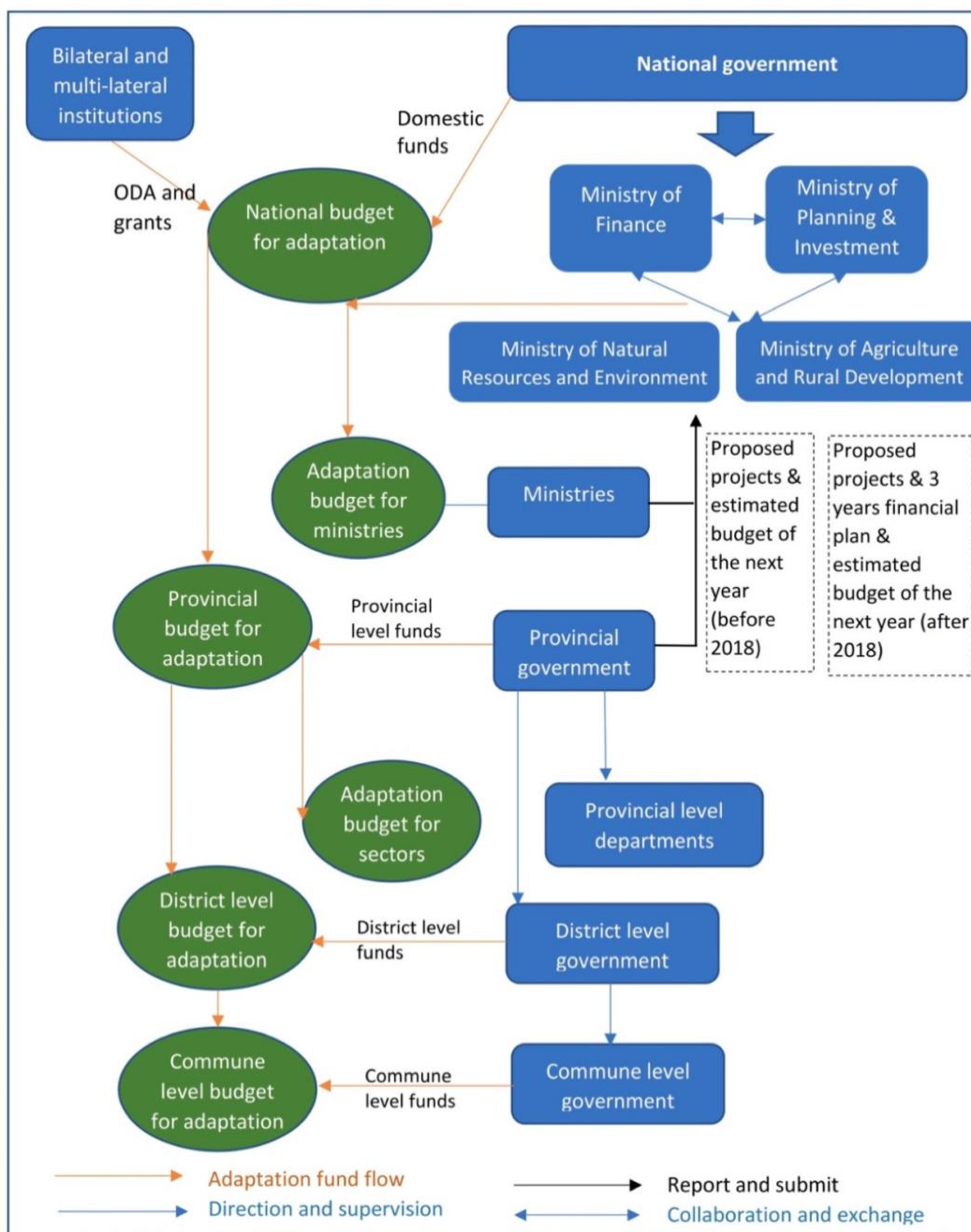
Source: [FAO, 2008](#), [GEF](#), [GEF Vietnam](#), [IFAD Vietnam Vietnam NDC, 2020](#), [Vietnam NDC, 2022](#)

3. Adaptation Finance Flow in Vietnam

3.1 Flow in Formal Level

The diagram shows the flow of adaptation funds from **international sources (ODA and grants)** and **domestic funds** through the **national government, ministries**, and down to **provincial, district, and commune levels**.

- Funding sources: from **international sources (ODA, grants)** and **domestic funds**.
- National Budget for Adaptation managed by Ministries like the **Ministry of Natural Resources and Environment (MoNRE)** and **Ministry of Agriculture and Rural Development (MARD)**.
- Funds are then distributed to from **National Government and Ministries** to **provincial, district, and commune levels**.



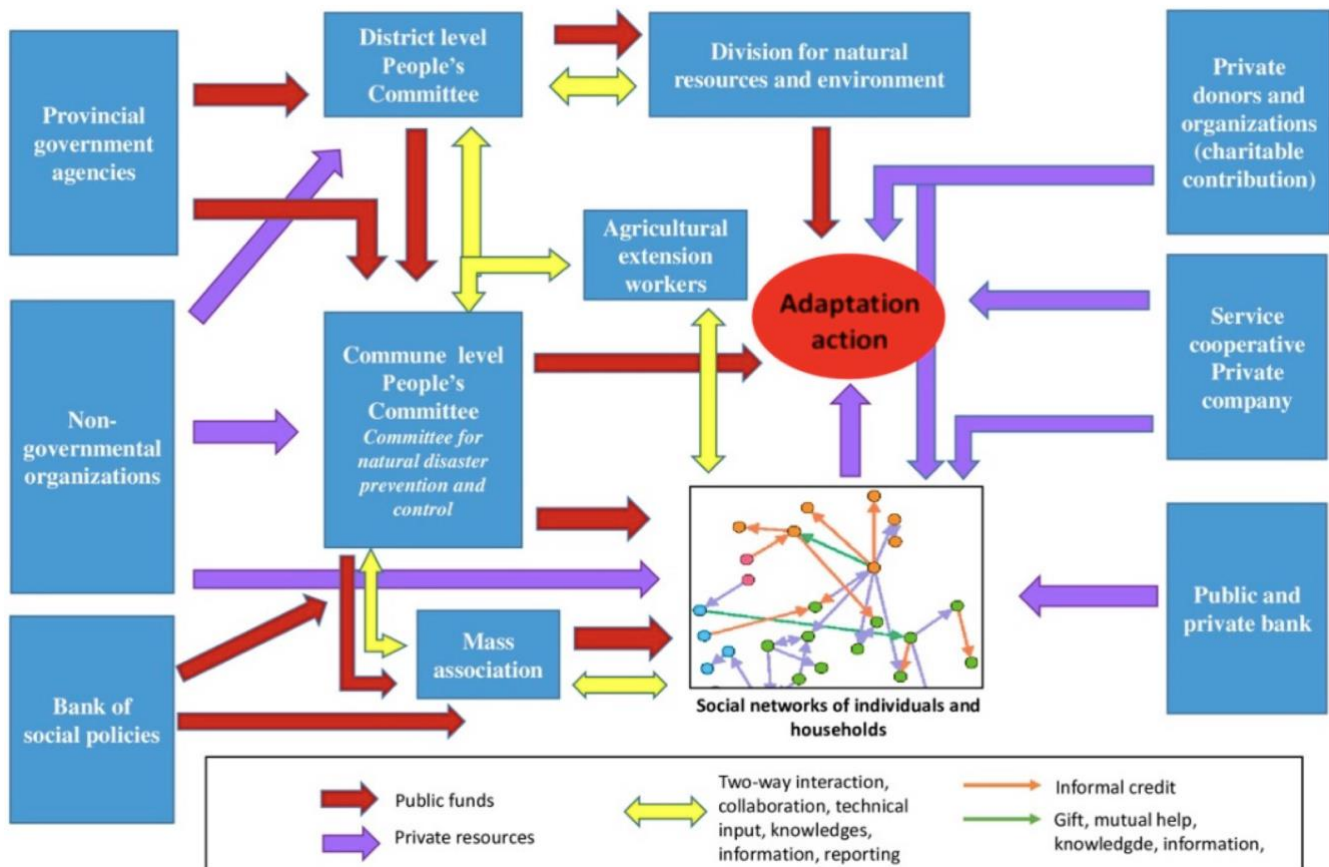
Source: [Pannier et al., 2020](#)

3.2 Commune Adaptation Finance Flow

This chart illustrates the **flow of adaptation resources** at the **local (commune) level**. The **Commune People’s Committee** plays a central role in managing and distributing these resources. Furthermore, the importance of **collaboration** between public and private sectors

and the role of **informal social networks** in facilitating grassroots adaptation actions are emphasized.

- Funds from **provincial government agencies, NGOs, and the Bank of Social Policies** are channeled to the **District and Commune People’s Committees**.
- The **Commune People’s Committee**, responsible for adaptation actions, directs these funds to projects aimed at disaster prevention, water resource management, and agriculture adaptation.
- The Commune People’s Committee works closely with **mass associations and agricultural extension workers** to implement adaptation projects based on local needs.
- Informal social networks within communities contribute through **knowledge-sharing, mutual help**, and informal financial support (e.g., small loans).



Source: [Pannier et al., 2020](#)

4. Case study

4.1 World Bank's Vietnam Irrigated Agriculture Improvement Project

Source: [World Bank, 2022](#)

The Vietnam Irrigated Agriculture Improvement Project describes how **adaptation finance** can be effectively used to modernize irrigation systems and promote **climate-resilient agriculture**. The role of targeted financial investments in addressing critical challenges such as deteriorating infrastructure, low agricultural productivity, and inefficient water use is discussed. The importance of mobilizing **adaptation finance** to support sustainable agricultural practices and improve resilience to climate impacts like droughts and floods is highlighted.

Objective	<ul style="list-style-type: none"> to improve the sustainability of irrigated agricultural production systems in Vietnam, particularly in the Central Coastal and Northern Mountainous regions. focused on improving irrigation services, agricultural practices, and building institutional capacity at local and national levels.
Key Stakeholders & Funding	<ul style="list-style-type: none"> Total project cost: US\$210 million (including a \$180 million credit from WB, and \$30 million from the Vietnamese government).
Implementation Method	<ul style="list-style-type: none"> Developed and implemented 7 modernized irrigation plans. Established 42 Water User Associations (WUAs), exceeding the target of 20. Upgraded and modernized irrigation infrastructure over 94,860 hectares (instead of the original 83,400 ha) Improved irrigation services to 955,005 water users, 141.5% of the target. Supported 709 Farmer Field Schools, training 17,746 participants, 60.9% of whom were women (Vietnam-Irrigated-Agric...). Strengthened 42 Water User Organizations (WUOs), and supported the implementation of service contracts between WUAs and irrigation companies.
Agriculture Impact	<p>Increased Irrigation and Productivity:</p> <ul style="list-style-type: none"> The project improved irrigation systems across 94,860 hectares (exceeding the target of 83,400 ha). As a result of better irrigation services, crop yields increased, particularly for paddy and maize, with improved water efficiency. Farmers adopting CSA practices reported yield increases between 5% and 25%.

- Approximately **955,005 water users** (141.5% of the target) benefited from improved irrigation and drainage services.

Adoption of Climate-Smart Agriculture (CSA):

- **32,045 farmers** adopted improved agricultural techniques, including water-saving technologies like drip irrigation and alternate wet-dry irrigation for rice.
- The project also introduced **Integrated Crop Management (ICM)**, reducing water demand and improving crop resilience to droughts and floods.

<p>Climate Adaptation Impact</p>	<p>The project improved Vietnam's climate resilience, especially in regions prone to drought and flooding, through:</p> <ul style="list-style-type: none"> • Rehabilitation of water infrastructure, including canals and pumping stations. • Reduced water usage by 19.9% in rice areas practicing alternate wet-dry irrigation and by 56.5% in areas converted from rice to other crops. • Significant reductions in the use of fertilizers and pesticides, further contributing to environmental sustainability and long-term productivity gains.
<p>Sustainability and Institutional Development</p>	<ul style="list-style-type: none"> • The project helped establish or strengthen 42 Water User Associations (WUAs), exceeding the target of 20, and improved the financial sustainability of irrigation systems by shifting tertiary infrastructure O&M responsibilities to local WUAs. • The Irrigation Law of 2017, implemented with project support, established frameworks for managing irrigation systems more efficiently and sustainably.

Unfortunately, this case study also highlights some key challenges regarding access to adaptation finance for agriculture workers in Vietnam such as heavy reliance on loans which can increase the financial burden on farmers and may not be sustainable long-term, especially for smallholders already struggling with access to finance which will be further discussed in Chapter 5 'Challenges & Policy Recommendations'.

4.2 SNV's Café-REDD+ project

Source: [SNV, 2023](#)

The **Café-REDD+ project** in Vietnam's Central Highlands focuses **identifies key financial barriers that many farmers face**, including limited access to **formal capital, reliance on**

informal and expensive loans, and rigid loan structures that often target only poor households. The project also emphasizes the **importance of PPPs** in mobilizing finance and scaling climate adaptation efforts across Vietnam.

Objective	<ul style="list-style-type: none"> • Improve access to finance for smallholder farmers in Vietnam’s Central Highlands coffee sector. • Promote climate-smart agriculture and forest conservation, contributing to sustainable livelihoods and reduced deforestation.
Key Stakeholders & Funding	<ul style="list-style-type: none"> • Stakeholders: Farmers, cooperatives, local government (provincial authorities), financial institutions, NGOs, international donors. • Funding: German Federal Ministry for Environment, Nature Conservation, Nuclear Safety, and Consumer Protection (BMUV), under the International Climate Initiative (IKI).
Implementation Method	<p>Public-Private Partnerships (4Ps): Collaboration between public, private, and producer sectors to support sustainable coffee production.</p> <p>Capacity Building & Technical Assistance:</p> <ul style="list-style-type: none"> • Trained over 3,355 farmers in better coffee production techniques and agroforestry. • Supported the establishment of farmer groups and cooperatives. • Provided grants and seed capital for non-coffee livelihoods, reducing reliance on single crops.
Agriculture Impact	<ul style="list-style-type: none"> • Coffee Agroforestry: Introduction of shade-creating fruit trees (macadamia and persimmon) improved the quality and resilience of coffee. • 75% of farmers in the target area voluntarily participated in the project. • The project area saw a significant reduction in deforestation pressures due to improved land-use practices.
Climate Adaptation Impact	<ul style="list-style-type: none"> • Increased resilience to climate risks (heat stress, water shortages, and soil erosion) through sustainable agricultural techniques. • By supporting mixed agroforestry and coffee cultivation, the project aimed to stabilize incomes and enhance economic and climatic resilience.
Sustainability and Institutional Development	<ul style="list-style-type: none"> • Formation of farmer cooperatives, which helped farmers connect to better markets and value chains. • 81% of households in the target area accessed policy loans from the Vietnam Bank for Social Policies (VBSP). • The project highlighted that 54% of households in the project area had negative cash flow, underscoring the need for financial access to improve sustainability

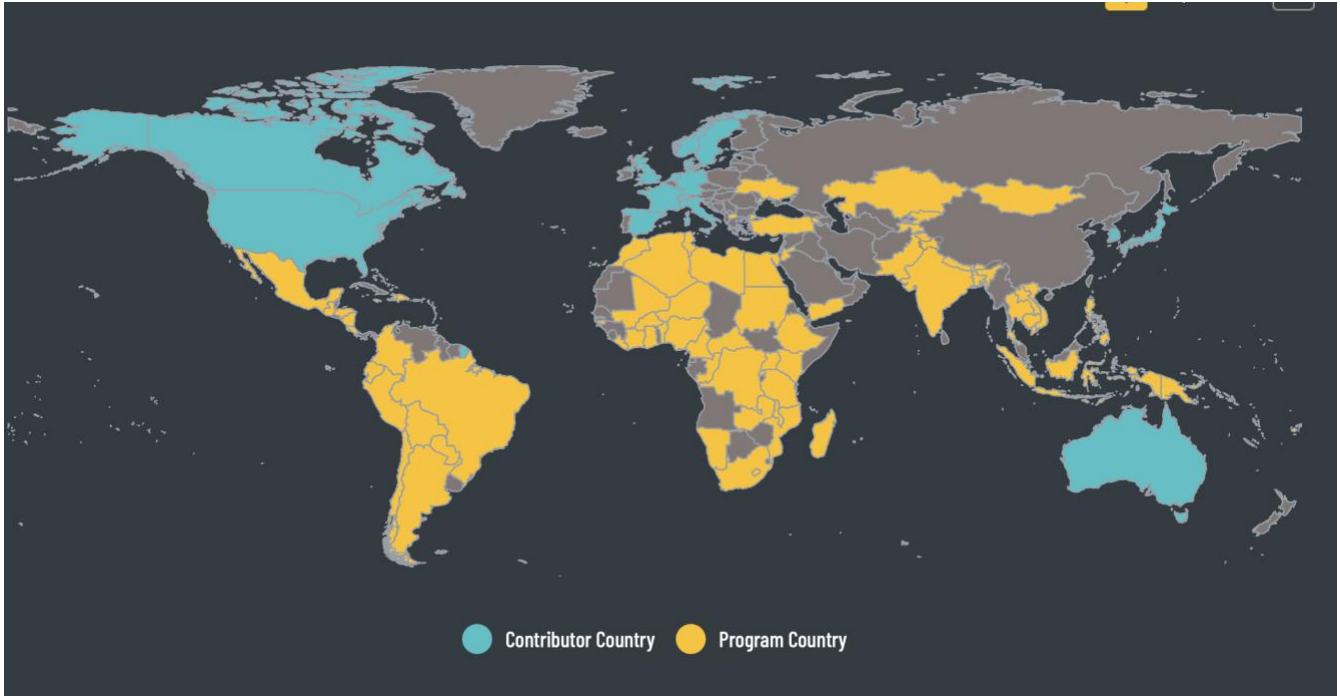
5. Challenges & Policy Recommendations

CHALLENGES	RECOMMENDATIONS
Unmet demand for finance: 45% of households reported unmet credit needs in 2023, with a significant need for loans under 100 million VND (USD 4,300) and over 500 million VND (USD 21,500) .	Provide financial products with focus on both small and large loans to meet diverse agricultural financing needs.
Loans from VBSP are rigid and target only poor households, leaving broader agricultural needs unmet.	Increase flexibility of loan products to cover a wider range of agricultural activities, beyond the poor and very poor households.
High administrative costs and reliance on physical bank visits make accessing loans difficult for rural communities.	Enhance digital banking and mobile services to reduce barriers and streamline access to financial services.
\$2 billion in loans for adaptation finance increases the sector's debt burden, threatening long-term sustainability.	Shift towards grant-based funding and secure more resources from global funds like the GCF and GEF . Provide debt relief mechanisms for heavily impacted farming communities.
59% of climate funding (2013-2017) was for mitigation, with only 41% for adaptation , leaving the agriculture sector underfunded.	Balance finance allocation , giving equal emphasis to adaptation. Prioritize irrigation projects, crop diversification , and climate-smart agriculture (CSA) to build resilience.
The cost of adaptation in agriculture could reach 3-5% of GDP annually by 2030, exceeding what the public budget can cover.	Promote public-private partnerships (PPP) and blended finance models to share financial responsibility. Expand low-interest loans and subsidized financing for climate-resilient practices.
Smallholder farmers (43% of Vietnam's population) often lack access to finance due to barriers like credit and financial literacy.	Establish microfinance schemes for smallholder farmers, and partner with international organizations to provide capacity building for improved access to climate-adaptation finance.

Source: [CARE, 2020](#), [SNV, 2023](#)

Annex

Annex 1.1: CIF Scope Map



Annex 1.2: CIF Scope List

Contributor Country	Program Country			
Australia	Algeria	Egypt	Liberia	Rwanda
Canada	Argentina	Ethiopia	Libya	Samoa
Denmark	Armenia	Europe & Central Asia	Madagascar	Solomon Islands
France	Asia	Fiji	Malawi	South Africa
Germany	Bangladesh	Gambia	Maldives	St. Lucia
Italy	Benin	Ghana	Mali	St. Vincent & Grenadines
Japan	Bhutan	Grenada	Mexico	Sub-Saharan Africa
Korea	Bolivia	Guatemala	Middle East & North Africa	Sudan
Netherlands	Brazil	Guinea Bissau	Mongolia	Tajikistan
Norway	Burkina Faso	Haiti	Morocco	Tanzania
Spain	Cambodia	Honduras	Mozambique	Thailand
Sweden	Cameroon	India	Namibia	Tonga
Switzerland	Central African Republic	Indonesia	Nepal	Tunisia
United Kingdom	Chile	Jamaica	Nicaragua	Türkiye
United States	Colombia	Jordan	Niger	Uganda
	Congo Republic	Kazakhstan	Nigeria	Ukraine
	Costa Rica	Kenya	North Macedonia	Vanuatu
	Côte d'Ivoire	Kiribati	Pakistan	Vietnam
	Democratic Republic of Congo	Kyrgyz Republic	Papua New Guinea	Yemen
	Dominica	Lao People's Democratic Republic	Paraguay	Zambia
	Dominican Republic	Latin America & the Caribbean	Peru	
	Ecuador	Lesotho	Philippines	

Annex 2: Financing of Case Study

	Original Amount (US\$)	Revised Amount (US\$)	Actual Disbursed (US\$)
World Bank Financing			
IDA-53520	180,000,000	174,768,825	158,850,163
Total	180,000,000	174,768,825	158,850,163
Non-World Bank Financing			
Borrower/Recipient	30,000,000	30,000,000	16,459,141
Total	30,000,000	30,000,000	16,459,141
Total Project Cost	210,000,000	204,768,825	175,309,304

Annex 3: Barriers to finance support highlighted from SNV's case study

- Policy loans from VBSP (Vietnam Bank for Social Policies) are not flexible or suited to all agricultural needs, especially for non-poor households. They cover **only the poor and very poor**.
- **2% of producer cooperatives** can access financing from commercial banks (Pham et al, 2019) & [SNV, 2023](#)
- **Agribusinesses** have the **highest percentage** of firms identifying **access to finance as a major constraint** compared to firms in other sectors, such as manufacturing or service (Tran and Ngo, 2021 analysis World Bank Enterprise Survey 2015) & [SNV, 2023](#).



- **High administration costs** for loans and physical visits to the bank are required.
- About **45%** of households reported unmet credit needs in 2023.
 - **40%** of this unmet demand was for loans less than **100 million VND** (approx. **USD 4,300**)
 - **25%** was for loans exceeding **500 million VND** (approx. **USD 21,500**).

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