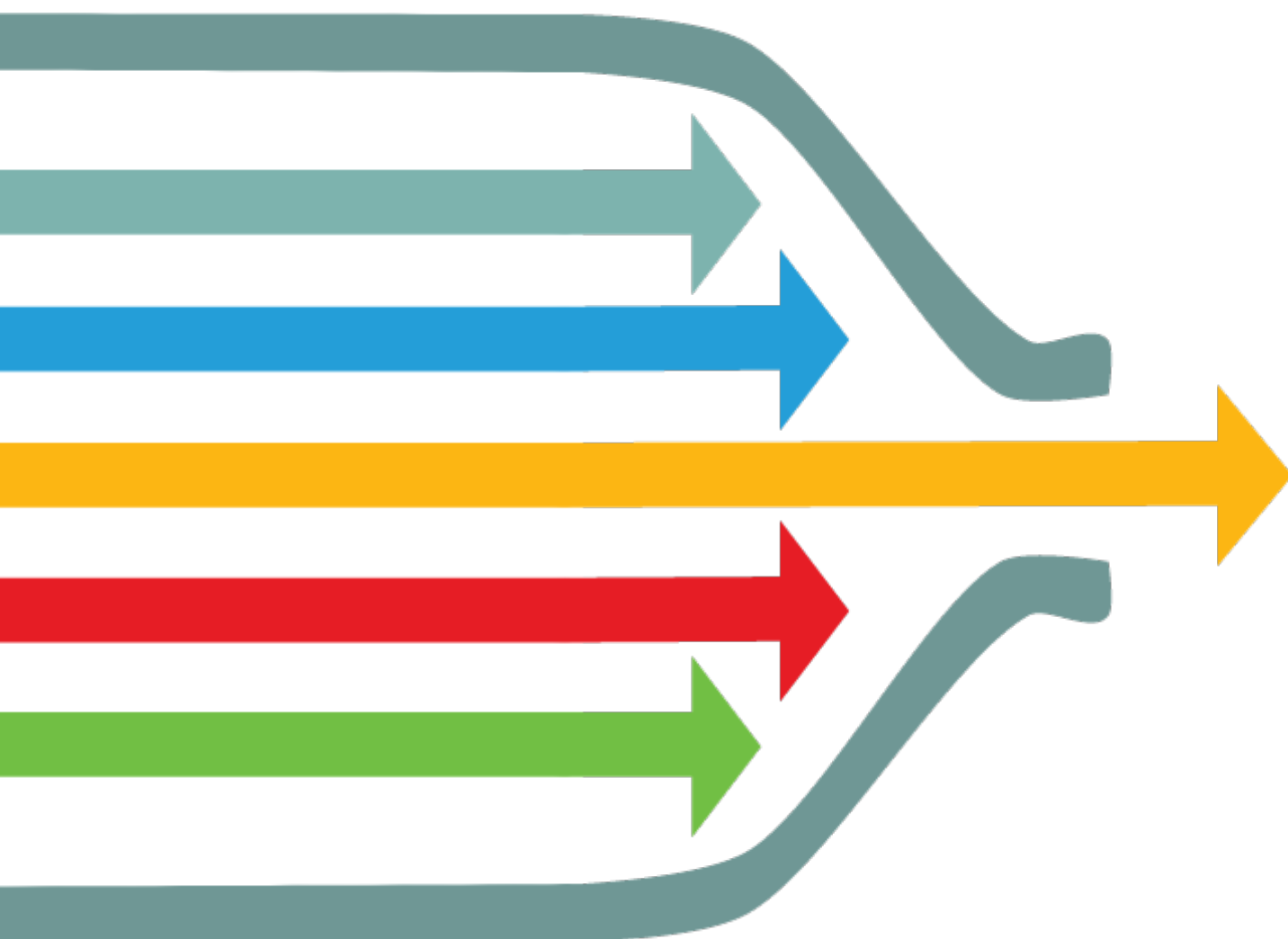




UNITED
NATIONS
VIET NAM

BOTTLENECKS ASSESSMENT

AND SOLUTIONS TO ACCELERATE IMPLEMENTATION
OF PARIS AGREEMENT IN VIET NAM



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The paper was written by Mr. Jiří Dusík (consultant) and Ms. Jenty Kirsch-Wood (UNDP Viet Nam) based on inputs obtained during consultations on institutional, technical and financial bottlenecks to implementation of the Viet Nam's Nationally Determined Contribution and the Paris Agreement held on 27th, 28th and 31st May 2019.

The consultations were attended by over 60 participants from UN agencies (Food and Agriculture Organization; International Labour Organisation; International Organization for Migration; United Nations Development Programme; United Nations Educational, Scientific and Cultural Organization; UN Environment; UN Habitat, United Nations Industrial Development Organization; United Nations Children's Fund; and UN Women); government agencies (Ministry of Planning and Investment; Ministry

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Executive summary

Introduction

In his 2018 address to the UN General Assembly, the United Nations Secretary-General António Guterres highlighted the increasing speed of climate change as an existential threat to global civilization. This statement built on scientific evidence from the Intergovernmental Panel on Climate Change 2018 Special Report on Global Warming of 1.5°C¹ which concluded that the global community has only about 12 years to avert major adverse impacts. Within this time period, global net anthropogenic emissions of greenhouse gases (GHG) need to be reduced by about 45% from 2010 levels, and reach net zero around 2050.

The UN Environment's Emission Gap Report 2018² further outlined that the current national climate pledges made through the Nationally Determined Contributions set our planet towards a global average temperature increase of 3°C or more; far beyond the ambition of the Paris Agreement that aims to keep it well-below 2°C.

Therefore, in order to enhance the climate change actions, the UN Secretary-General is convening a global summit of leaders in New York on 23 September 2019. Leaders are requested to present concrete, realistic plans to enhance their Nationally Determined Contributions by 2020, and the UN Secretary-General has also tasked the relevant UN agencies, especially UNDP and the UN Country Teams, to support this process.

As an input to this dialogue, the UN Country Team in Viet Nam, assisted by UNDP, undertook a series of consultations between 27–31 May 2019. The consultations aimed to examine Viet Nam's challenges and opportunities for stepped-up climate action in the six transformative areas identified by the Global Summit agenda,

namely: energy transition, industry transition, infrastructure cities and local action, resilience and adaptation, nature-based solutions and climate finance and carbon pricing. In line with Global Summit agenda, the consultations further included discussion on three cross-cutting themes: raising ambition, mobilization of society and synergies of key players' mitigation strategies.

These consultations also identified several contextual factors that impacted Viet Nam's ability to surpass its current climate change targets. Viet Nam has established a fast-growing and energy intensive economy and plans major investments into coal-based power generation. Globally, the country currently ranks 27th in terms of GHG emissions³ but its carbon footprint is increasing rapidly, and is expected to treble between 2010 and 2030.

Current status

Viet Nam's NDC aims to reduce the currently steeply growing emission trajectory by 8% through national support measures and by 25% with international support. However, mitigation measures included in Viet Nam's Nationally Determined Contribution currently do not fully reflect all cost-effective and affordable opportunities for reduction of GHG emissions that are present in the country. In a business as usual scenario, Viet Nam is on track to become a major GHG emitter by 2030, at a time when other major economies are taking stepped up action to decarbonize.

Viet Nam's climate actions currently prioritize climate change adaptation. Its current responses however do not address long term implications of the predicted loss of coastal land and associated infrastructure if global temperature rise is not

¹ https://www.ipcc.ch/site/assets/uploads/sites/2/2018/07/sr15_headline_statements.pdf

² <https://www.unenvironment.org/resources/emissions-gap-report-2018>

³ <https://english.vietnamnet.vn/fms/environment/185103/vietnam-ranks-27th-in-greenhouse-gas-emissions.html>

managed in accordance with the objectives of the Paris Agreement. These vulnerabilities suggest it would be in Viet Nam's interest to actively join global GHG emission reduction efforts.

Viet Nam has a considerable renewable energy potential – technically, 85,000 MW of solar photovoltaic generation capacity and more than 21,000 MW of wind power generation capacity could be installed, aggregating to about 32% of the total power generation capacity by the year 2030. There is a high level of interest from the private sector to invest in renewable power and initial investments have been made. However, investments for deployment of full potential are constrained by the existing regulatory framework and a low capacity of power transmission grid.

Viet Nam has major unused opportunities for energy savings, with technical potential in some energy-intensive industries reaching 40% of present energy consumption per unit of output. The current prices of electricity and fuels used by industry however do not reflect their environmental and health costs and are generally too low to justify investments into energy efficiency measures.

Existing adaptation and resilience building efforts in the country have so far focused mainly on responses. Less attention is given to preparedness for future extreme events and enhancement of the long-term resilience of communities to climate change risks.

Rapid urbanization increases vulnerability to extreme weather events and increases congestion, urban GHG emissions and air pollution. Current systems of environmental fees do not generate sufficient revenues to mobilize investments into environmental protection and restoration of ecosystem services that are needed to boost the local adaptive capacity to the effects of climate change.

Other economic instruments could also be strengthened. For example, the current system of Payments for Forest Ecosystem Services offers an important source of income for owners and users of forests having important watershed protection functions. The Forest Law adopted in 2017 envisaged establishment of additional payments for 'absorption and retaining of forest carbon' which are yet to be put in place.

Available accelerators

Government action to create an enabling environment and incentives for stepped up implementation of climate actions could support continued sustainable growth in Viet Nam and contribute to achievement of global climate targets. Key accelerating actions that can promote enhanced climate change action across the six focus areas of the report include:

Energy transition

- Accelerate the realization of competitive markets both for energy generation and wholesale and retail markets (as soon as 2021), and create a level playing field for both domestic and international investors.
- Undertake transparent and high-quality assessment of economic and environmental impacts of future power mix options (including renewable sources, LNG and power imports) during elaboration of the 8th Power Development Plan.
- Permit direct power-purchase agreements that increase opportunities for renewable energy producers to participate in the electricity market.
- Encourage the use of rooftop solar PV on private houses, farms, factories and public buildings.
- Prioritize public investment in strengthening of the power transmission grid.
- Enforce the Law on Energy Efficiency and Conservation and related regulations, especially energy management in energy-intensive sectors such as buildings and cements.
- Introduce a medium-term roadmap of the expected evolution of electricity prices to motivate energy efficiency investments.

Industry transition:

- Require foreign direct invested (FDI) companies and economic cooperation programmes to report their GHG emissions mitigation ambitions domestically and in their countries of origin.
- Require all major energy users (including foreign direct invested companies, FDI) to apply the polluter-pays principle and offset GHG emissions.

- Enforce Law on Energy Efficiency and Conservation, starting with high-energy users.
- Incorporate an Eco-Industrial Parks approach into Socio-economic Development Strategies and Plans.
- Systematically link the ongoing industrial transformation with the climate change agenda through e.g. promoting energy- and resource-efficient Industry 4.0 systems, advanced and low-emission technologies, phasing out outdated technologies, and improving efficient use of natural resource.

Nature based solutions

- Facilitate Vietnam's participation in sustainable global value chains.
- Promote agro-ecology, climate-smart agriculture and sustainable agricultural production.
- Upgrade the payment for forest ecosystem services to include result-based payments and require key GHG emitters to offset their emissions using forest carbon sequestration potentials available in the country.
- Consider replication of highly integrated planning and management approach being applied in the Mekong Delta to other critical regional ecosystems such as Red River Delta or Central Highlands.
- Increase investments in sustainable management and use of natural resources and biodiversity conservation.

Resilience and Adaptation

- Require systematic integration of climate change impacts and vulnerability assessments, and identification of adaptation measures, into planning processes under the new Planning Law, taking into account local socio-economic context and need to facilitate social inclusion.
- Require climate change vulnerability assessments as part of business permit applications (also taking into account local socio-economic systems and efforts to promote gender equity).
- Build capacity at national, provincial and local levels to access and use climate data and support communities in identifying adaptation

and resilience measures appropriate to their needs and situation.

- Prepare long term strategies to manage potential impacts of permanent loss of coastal land, and associated infrastructure.
- Systematize generation of climate data and facilitate their free accessibility. Ensure clear communication of climate projections and implications for key economic sectors, local government and communities.
- Introduction of integrated approach to enhance resilience of vulnerable communities in highly vulnerable regions such as Mekong delta, central highland, and Northern mountain.
- Increase investments in restoring and maintaining ecosystems and their services to enhance ecosystem-based resilience of local vulnerable communities and the economy to the impacts of climate change.

Infrastructure, Cities and Local Action

- Enhance community consultations in the preparation and implementation of urban plans and require integration of climate risk analysis and options for promoting carbon reductions.
- Improve investment policies to promote a paradigm shift towards smart, low-carbon, and resilient infrastructure, which reduces the climate vulnerabilities of communities and the economy.
- Initiate transition to smart and low-carbon transport systems. This includes strengthening emission standards and establish environmental fees on high-polluting vehicles (except hybrid/electric) and incentivize public transport and e-mobility.
- Expand the existing pilot initiatives towards full-fledged transition to green-, low-emission, and resilient smart cities.
- Require shopping malls/retail centers, high-rise buildings and large housing development complexes to meet energy efficiency targets and partially use renewable energy sources.

Climate finance and carbon pricing:

- Gradually adjust environmental taxes so that their rates are equal across all types of fossil fuels per emission unit produced.

- Increase the current environmental fees to ensure that they cover the true total costs of remedial actions.
- Promote the use of blended finance for critical climate-related investments (e.g. public transport, water management, waste management, etc.).
- Encourage domestic borrowers to use non-sovereign ODA loans for climate actions and allow localities, public service providers and enterprises to directly access international climate finance.
- Develop bond markets to raising long-term capital for climate change mitigation and resilience building actions and make bank actions to Promote Green Credit Growth and Environmental & Social Risks Management in Credit compulsory.
- Develop a domestic carbon market and reduce or abolish tax on revenues generated through carbon trading.
- Gradually turn the existing PFES systems into results-based payments that incentivize sustainable forest management and can provide payments for 'absorption and retaining of forest carbon' and potentially other climate change actions.
- Advocate at the global level to redefine ODA/IDA rules to allow lower middle-income countries like Viet Nam borrow at concessional rates for all climate change mitigation and adaptation actions.

The following text presents the specific observations and recommendations in six policy areas addressed in the paper.



Energy Transition

Context

According to Viet Nam's 2nd Communication to the UNFCCC and 1st Biannual Update Report, the energy sector will contribute up to 70% of GHG emissions by 2030.

Mitigation activities included in the current NDC currently do not reflect all cost-effective and affordable opportunities that exist for reduction of GHG emissions arising from energy use.

The country is endowed with significant exploitable renewable energy potential - 85,000 megawatt of solar photovoltaic generation capacity and more than 21,000 megawatt of wind power generation capacity, aggregating to about 32% of the total power generation capacity to be installed by the year 2030. Utilisation of this renewable energy potentials could help Viet Nam to meet much of its future electricity demands (projected to reach 120 GW by 2030 in Power Development Plan 7-revised (PDP7rev)).

The current power development system is centrally planned and is gradually being opened to independent power producers. Previous economic assumptions and political economy factors have directed the power sector into long-term technological lock-ins that pursue coal-based power generation and dependency on coal imports. The current plans do not consider risks of stranded assets in coal-based power generation.

Coal-based power generation options enjoy high-levels of private sector interest and development and economic cooperation support from neighbouring higher-income countries. Investors interested in coal-based power generation increasingly promote 'clean coal' technologies while neglecting adverse impacts of such technologies on GHG emission reduction efforts and long-term reliance on coal imports.

Declining levelized cost of energy in wind and PV power generation in the country present attractive alternatives to coal-based power generation. New cost-effective technical solutions are readily available for use in Viet Nam and renewable power generation raises considerable private sector interest.

Preparation of key strategic documents for 2021-2030 period creates multiple opportunities for consideration of more sustainable low-carbon development options and utilisation of these potentials through price signals and infrastructure support measures.

Elaboration of 8th Power Development Plan (PDP8), in particular, opens new opportunities to properly consider environmental

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and economic impacts of all financially viable power supply options (coal, LNG solar, wind, hydro, biomass, and electricity imports) and their associated infrastructure (e.g. power grid upgrades, transport and processing of fuels, management of residual waste).

Existing Bottlenecks

The current electricity prices do not fully reflect external environmental costs associated with its production (especially in thermal power plants) and there is a limited political will to address these externalities through fiscal instruments.

The current policy-making paradigm treats access to cheap power as a precondition to a competitive economy. Local population and state-owned enterprises became used to artificially low electricity prices and resist reasonable changes in tariffs.

Relatively low costs of electricity do not stimulate utilization of energy efficiency measures. Neither households nor the private sector are fully aware of various cost-effective energy efficiency measures at their disposal (e.g. energy appliances with better energy performance, energy use optimisation at industrial enterprises, cost-effective technical solutions such as more efficient refrigeration, substations, etc.).

The market for energy service contracting is not yet sufficiently developed. Energy service companies are financially weak and cannot facilitate large-scale use of energy performance contracting.

The current policy frameworks and 7th Power Development Plan (PDP7rev) do not sufficiently facilitate private sector engagement in the power sector. The current energy policy does not provide a predictable roadmap of energy prices and a reliable framework for long-term investments.

Renewable energy projects cannot be easily added to the formal list of pre-approved power investment projects and face complicated regulatory approvals.

Full utilization of existing renewable energy potential is limited by the current capacity of the national power grid. Concerns about power grid capacity and the provisions in the standardized power purchase agreements do not provide

renewable energy project owners with sufficient guarantees that the power produced will be absorbed by the grid and paid for.

Neither industrial enterprises nor households can currently choose greener energy supply options even if they wish to. The Government of Viet Nam, relevant DPs and foreign-invested companies interested in the use of renewable energy (e.g. members of "RE100") have been developing a template for direct power purchase agreements (DPPAs) that would allow them to meet their clean energy aspirations in Viet Nam. Despite considerable private sector interest, such contracting arrangements have not been finalized yet.

Environmental assessments examining potential impacts of proposed power development plans and projects on health and livelihoods do not involve sufficient consultations with populations in potentially impact areas.

Potential Accelerators

1. Accelerate the realization of competitive markets both for energy generation and wholesale and retail markets (as soon as 2021), and create a level playing field for both domestic and international investors.
2. Undertake high-quality and transparent modelling and environmental assessment of future power mix options (including renewable sources, LNG and power imports) during elaboration of the 8th Power Development Plan (PDP8). When doing so, consider environmental externalities and side-effects of various power supply on relevant SDGs (No. 3, No. 6, No. 7, No. 9, No. 11, No. 11, No. 13 and No. 15) and facilitate engagement of key interested groups (private sector, professional networks⁴, youth, women) in this process.
3. Prioritize public investments into strengthening of the power transmission grid. Use available international climate finance to support grid strengthening through low-interest loans and blended financial instruments. Minimise increases in the interest rates of any subsidized loans established through the current re-lending arrangements and/or allow.

⁴ E.g. Sustainable Energy Alliance, Energy Association

4. Upgrade the existing standardized power-purchase agreements to include standard good-practice provisions related to obligations of the power grid operator to absorb the power generated and to pay for it, to reduce "curtailment risks" of investors. Finalize and adopt a suitable standard direct power-purchase agreement to enhance opportunities of renewable energy producers to participate in the electricity market.
5. Following the improvement of the existing standardized power-purchase agreements, replace the Feed-in-Tariffs for the solar PV and wind by reverse auctions that have potential to significantly reduce the costs of renewable energy to well below the current average retail price.
6. Encourage the use of rooftop solar PV on private houses, farms, factories and public buildings. Proactively promote uptake of roof-top solar PV in manufacturing/industrial zones and facilities requiring intensive energy supply (cooling/air-conditioning), aquaculture production and public buildings. Such decentralized PV solutions can help to generate energy to the grid and, more importantly, reduce peak energy demands during the daytime.
7. Gradually adjust environmental tax on generated greenhouse gas emissions for coal to be commensurate with the environmental tax for gasoline and diesel, which are currently subject to much higher levels of environmental taxation per pollution unit produced.
8. Introduce a medium-term roadmap of the expected evolution of energy prices to motivate preparation of energy efficiency investments.
9. Better enforce the Law on Energy Efficiency and Conservation and related regulations, including energy management in buildings and industries (through adoption of ISO 50 000 series or similar standards) which are already promoted in Viet Nam for over a decade. Non-compliance with regulatory obligations, particularly those applicable to energy-intensive enterprises, should lead to appropriate sanctions and potentially to the imposition of higher power tariffs to incentivize the efficient use of energy.
10. Create an enabling environment for the development, expansion and effective operation of energy service companies (ESCOs), for example by allowing them to access international climate finance or encouraging state-owned enterprises to use ESCO services.



Industry Transition

Context

The current business sector is dominated by foreign direct investments that are typically engaged in labour-intensive manufacturing and large state-owned enterprises that often rely on outdated resource- and energy-intensive technologies used e.g. in production of cement, steel, pulp and paper, production of chemicals and chemical fertilisers.

A significant scope for electricity-use savings of up to 7.0% relative to the business-as-usual, through to year 2035 exists within the country. Technical energy saving potential in some sectors such as cement production is estimated at 40% of present consumption per unit of output. Low cost energy efficiency solutions with negative marginal abatement costs and fast investment returns are available for electricity users at different levels (industrial zones, individual enterprises, SMEs and households).

The role of the private sector is increasingly recognized as an important driving force in the socialist-oriented market economy and the economy has recently witnessed expansion of dozens of large-scale domestic corporations.

Viet Nam is also developing one of the fastest-growing e-commerce markets in the world and expert capacities to develop a strong digital economy. Digital transformation will affect domestic supply chains and will create both opportunities and pressures to reform the existing production management processes. There is a growing recognition that emerging technologies (advanced industrial robotics, electromobility, Internet of Things, etc.) may increase demands for energy.

The public investment law and General investment law lack incentives and enforcement to ensure investments in green and clean technologies. The Government of Viet Nam has nevertheless issued "Decree 82" on promotion of Eco-Industrial Parks that promote industrial symbiosis, circular economy and economy of scale in industrial management and the first practical steps to put this concept into practice have been taken.

Viet Nam is already manufacturing and assembling several components of wind power and solar PV systems, mainly for export. The significant renewable energy and energy efficiency potential in the country also offers major job creation opportunities in these sectors having an attractive growth potential.

Urban congestion and air pollution create attractive opportunities for deployment of e-mobility. Foreign producers have started

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entering the emerging market with electric two-wheelers. A major domestic company has begun manufacturing electric motorcycles and plans to expand to cars and buses.

Existing Bottlenecks

The current corporate mindset in large industrial processes have typically favoured expansion of the main business activities over efficiency.

Effectiveness of incentive-based approaches to industrial environmental management (tax rebates, etc.) is constrained by low costs of energy, limited enforcement, and low environmental fees levied on waste and waste-water. These conditions do not stimulate investments into environmental friendly technologies and pollution control measures.

Markets with eco-innovations (new products, services, technologies and management approaches that lead to better environmental outcomes) are nascent. Businesses lack access to capital, adequate skills and knowledge to adopt and adapt technologies that emerge within 4th Industrial Revolution.

More conducive inter-ministerial coordination between MPI, MONRE, MOIT, MOST, MOC, and MOF and technical guidelines and enhanced capacities are needed to scale-up Eco-Industrial Parks concept and other similar endeavours.

Potential Accelerators

1. Require FDI companies and economic cooperation programmes to report their ambitions to reduce GHG emissions and other emissions such as Ozone Depletion Substances (ODSs) both in Viet Nam and in their countries of origin.
2. Require all major energy users (including foreign direct invested companies, FDI) to apply the polluter-pays principle and offset GHG emissions from their operations in Viet Nam using domestic carbon market. Integrate relevant climate change mitigation and adaptation measures (e.g. grey-water reuse, etc.) into environmental and operational permits for these investments.
3. Develop policies to promote jobs and expert capacities in key green growth sectors. Engage FDI companies that make global pledges



related to climate change and sustainability (e.g. in fashion, footwear) into a dialogue on how to best meet such commitments in Viet Nam and how to best utilise local suppliers of relevant environmental technologies and services.

4. Require energy-intensive industries (such as cement, steel, pulp and paper, chemicals, chemical fertiliser, food processing, beverage, etc) to comply with the Law on Energy Efficiency and Conservation. Encourage them to adopt energy management systems and invest into resource and energy efficiency measures, including phasing out of old technologies when necessary.
5. Incorporate an Eco-Industrial Parks approach (EIP) into socio-economic development strategies and plans at both national and provincial levels and enhance institutional and technical capacity to upscale adoption of EIP approach.
6. Remove legislative barriers that restrict production of renewable power in industrial zones (e.g. through the use of rooftop solar PV). Instead encourage industries to sell excess power to the grid and/or to other interested users through Direct Power Purchase Agreements or similar mechanisms.
7. Facilitate inter-ministerial dialog to operationalize Decree 82 on industrial and economic zones, removing regulatory barriers to improve waste management and co-processing, application of renewable energy and energy efficiency in industry, reuse of treated waste water, and resource productivity.
8. Facilitate SMEs' adoption of renewable energy and energy efficiency technologies and practices that have emerged as economically viable and environmentally friendly.
9. Strengthen the existing capacities for digital transformation and develop human resources for operation of resource- and energy efficient Industry 4.0 systems. Support the formation of action-focused technology clusters that facilitate business matchmaking and create shared digital platforms, e-commerce services and supply chains. Encourage experimentation with digital environmental monitoring, management and accounting.
10. Increase value per product by investing into 'quality assurance infrastructure' that is an essential pre-condition for transparency and trust in Vietnamese products. Such infrastructure can serve wide range of industries, Start with food processing where better control and enforcement is needed in order to tap green value chains.
11. Improve capacity of educational institutions and meso-level institutions to support industry's skills upgrading and the alignment of human resource development with Industry 4.0 needs.



Nature-Based Solutions

Context

The Government of Viet Nam has demonstrated its strong commitment to natural forest protection. However, pressures on natural forests are increasing due to expansion of agriculture and aquaculture (primarily driven by an increasing connection of Viet Nam to global markets), urbanisation and infrastructure development.

Globally food systems contribute between 19%–29% of global anthropogenic greenhouse gas (GHG) emissions⁵ and in countries like Viet Nam, agriculture remains a key contributor to GDP growth and is the major rural source of employment.

Unless properly managed, current trends in Viet Nam's agricultural sector and its deeper integration into global trade will enhance pressures on natural ecosystems (through conversion) and agricultural land (through consolidation and intensification). Climate change will further exacerbate these pressures.

Environmental benefits of agricultural systems are currently not valued or sufficiently protected through land management and land-use planning policies and enforcement mechanisms.

Agriculture insurance addressing natural disaster and climate change risks is currently limited in both product available and uptake.

The Government has introduced Payments for Forest Ecosystem Services (PFES) which offer an important source of income for managers/ users of forests that perform important watershed protection functions. The current payments do however not require any results in terms of forest quality improvements.

Existing Bottlenecks

Forest management, and management of natural ecosystems generally, is constrained by ineffective land-use planning that does not operate with precise data (existing land-use maps often show significant disparities with actual land-uses) and does not facilitate future-oriented land-use planning that would protect ecosystem functions and services. Land-use conversions are often conducted without sufficient oversight and controls by environmental and land-management authorities.

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⁵ *Climate Change and Food Systems*; Sonja J. Vermeulen, Bruce M. Campbell, John S.I. Ingram; *Annual Review of Environment and Resources* 2012 37:1, 195-222

Small-scale agricultural production faces fiscal disincentives compared with commercial large-scale agriculture. Agricultural input materials (fertilisers, pesticides) enjoy low levels of taxation can be deducted as costs.

Agricultural small-holders and forest owners do not yet have adequate capacities and access to appropriate technologies to engage in carbon sequestration and sustainable farming systems.

Insurance packages are not yet available for more sustainable forest management approaches using long-term production cycles that involve more risks than short-term production cycles.

Potential Accelerators

1. Aim to step up Vietnam's linkages to sustainable global value chains. Use agricultural extension and related services to inform farmers opportunities for transformation in global supply chains and associated demands for improved traceability and certification of agricultural products. Facilitate contacts between interested farmers and the relevant international supply chains and assist them to meet export requirements.
2. Promote pilot projects demonstrating benefits of agro-ecology, climate-smart agriculture and sustainable agricultural production.
3. Develop multi-purpose land-use planning that would replace the current land-use categories that are currently with site-specific environmental obligations that would be integrated into local land-uses.
4. Promote long-term rotation and diversification through upgrading and expansion of the current PFES schemes. Change the payments into performance-based payments (based on e.g. adoption of sustainable forest management practices or agroforestry and the ability to provide important livelihood-related co-benefits).
5. Gradually expand PFES schemes to incorporate payments for forest carbon sequestration and require key GHG emitters to offset their emissions using forest carbon sequestration potentials available in the country.
6. Replicate highly integrated planning and management approach promoted within Sustainable and Climate-Resilient Development of the Mekong Delta in other critical regional ecosystems such as Red River Delta or Central Highlands.
7. Develop and fully implement the Vietnam Timber Legality Assurance System (VNTLAS) envisaged in Voluntary Partnership Agreement (VPA) on Forest Law Enforcement, Governance and Trade (FLEGT).
8. Consider lessons from REDD+ systems for blue-carbon sequestration through marine systems.



Resilience and adaptation

Context

Increased severity and frequency of climatic events and extremes is gradually increasing pressures on sustainable development and the costs of disaster reduction, response, recovery and building resilience.

Impacts are disproportionately distributed across diverse climatic, agro-ecological, economic zones and across society. Poor communities in remote locations or vulnerable areas have the lowest capacity to absorb shocks and to adapt to climate change impacts.

Women are disproportionately affected by climate change and disasters due to existing gender inequalities and social constructs in Viet Nam society. Women's subordinate position in the family and society and their primary role in unpaid domestic and care work make them more vulnerable in a changing climate.

Children are especially affected by climate change through changes in parents' income, household assets and access to food, water, education and healthcare. Disproportionate impacts of climate change on women that restrict their ability to provide sufficient nutrition or care for children further increase these negative impacts.

Anthropogenic pressures are compounding climate change effects and are increasing vulnerability in many areas. Examples are groundwater extraction in the Mekong Delta that causes land subsidence, and upstream dam construction that drives changes in the Mekong river flow and reduces the distribution of sediments. Societal dialogue on reduction of anthropogenic environmental pressures through e.g. prevention of environmentally problematic projects or their more stringent management remains limited.

Climate change adaptation and disaster risk reduction are frequently mentioned as priorities in many strategies and plans. The practical actions have been so far limited to infrastructure upgrading and agriculture. Key economic and social actors have not yet been fully engaged in resilience building and climate change adaptation actions.

Existing adaptation and resilience building currently focus mainly on emergency response efforts. Less attention is given to disaster risk reduction, preparedness for future extreme events and enhancement of the long-term resilience of communities to climate change risks.

In case the target of the Paris Agreement is not met, considerable permanent loss of coastal land, and associated infrastructure,

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agricultural land and cultural heritage can be expected. The financial and social costs of managing these long term impacts are not included in current adaptation cost estimates and have not been systematically quantified, but would be significant.

Existing Bottlenecks

Effective mechanisms that would facilitate exchange and sharing of climate and vulnerability data are not in place. Vulnerability information and data are not systematically collected and shared. Climate data, projections that are generated with the help of international funds are not made freely available to relevant authorities in easy-to-use formats (e.g. digital files with sufficient resolution).

Due to limited data sharing, climate risk mapping and climate vulnerability assessments are not yet a standard part of various planning processes.

Climate change adaptation and vulnerability issues are not systematically integrated into key development planning processes and environmental and investment permits.

Construction codes and standards do not yet sufficiently address climate risks (e.g. flooding, heat waves, etc.).

Local communities do not have the financial and institutional means to engage in implementation of infrastructural measures envisaged in higher level adaptation plans. Key adaptation interventions rely on central Government budget support for large-scale investments.

Public budgets do not support soft adaptation measures (changes in land-use, management systems, skill development, etc.). Marginalized groups living in vulnerable areas are usually not actively engaged in relocation planning and often spontaneously migrate back to vulnerable locations.

Women's unequal access to climate information, adaptive technologies, financial resource and decision-making process related to climate change hamper women's resilience and adaptation capacity.

Start-ups with potential to address or fast-track adaptation (e.g. in agricultural sector) through new business models often face complicated regulatory approvals and struggle to grow.

Attractive climate risk & extreme weather event

insurance products are not yet available at different levels (e.g. regional risk pooling on macro-level; insurance for infrastructure or communities on meso-level; and pro-poor small-holder insurance on micro-level).

Potential Accelerators

1. Integrate disaster risk reduction and resilience building into new Law on Natural Disaster Prevention and Control. The ongoing process of amending this law is a significant accelerator that is aligned with Sendai Framework.
2. Systematize generation of climate data and vulnerability data through clarifying the roles and responsibilities for their collection, processing and public dissemination.
3. Strengthen the role of the National Climate Change Committee as key cross-sectoral body that facilitates data exchange and disseminate and provides strategic advice on adaptation and resilience building efforts in key sectors and localities.
4. Make all climate related data, including projections and supported through public budgets or ODA (e.g. flood simulations, temperature and rainfall projections, etc.) freely available and exchangeable in easy-to-exchange digital formats.
5. Explore the power of digital technologies (remote sensing, aerial surveys, machine-assisted analyses of available digital data, etc.) to generate future information for adaptation planning, climate change risk assessments, and climate insurance.
6. Establish basic climate services (paid provision of tailor-made climate data and projections) for developers of private and public infrastructure projects.
7. Build capacities of key authorities on national, provincial and local levels to access and use climate data and support communities in identifying adaptation and resilience measures appropriate to their needs and situation.
8. Enhance capacities across education sector and integrate climate change adaptation and disaster risk reduction into a core part of educational curricula. Involve children and youth as agents of change in community-based adaptation, and promote innovative youth-driven initiatives using new technologies and applications.

9. Promote equal participation of women and men in climate change policy development and implementation. Consider differentiated needs of women and men in resilience and adaptation and provide targeted support to women-led initiatives.
10. Ensure that risk-informed approach is adopted across sectors. Require climate change vulnerability assessments as a compulsory part of all planning processes and business permit applications. Enforce current requirements for consideration of climate change issues in strategic environmental assessments, environmental impact assessments, and environmental protection commitments. Adjust and better enforce construction codes, especially in vulnerable areas.
11. Promote feasible low-regret adaptation options in the agriculture sector. Disseminate information on adaptation opportunities identified through research and/or innovative examples at local level to inform national level actions and planning and vice versa.
12. Promote water treatment and safe water storage at home is one of the critical life-saving skills and a low- cost option in resilience and adaptation initiatives.
13. Develop and incentivize climate risk and extreme weather event insurance and reinsurance on different levels. Promote these risk transfer mechanisms in highly vulnerability areas. Continue subsidizing climate insurance for small-scale farmers in high risk areas.
14. Prepare long term strategies to manage potential impacts of permanent loss of coastal land, and associated infrastructure, agricultural if the target of the Paris Agreement to limit global temperature rise to well below 2 degrees Celsius would not be met.



Infrastructure, Cities and Local Action

Context

Over 50% of Viet Nam's population is expected to live in cities by 2030. The country is experiencing rapid urbanization and fast changing urban development patterns.

Urban electricity demand is rapidly increasing and so do the rates of motorisation and the energy consumption in the transport sector. Cars are gradually replacing two-wheelers and contribute to further worsening of urban congestion.

Infrastructure provision lags behind the urbanization process. Nationwide, only 46% of urban households have connections to the drainage system and only 12.5% of domestic wastewater is being treated. In many mid-sized or small towns, drainage systems are non-existent and the vast majority of these households rely on septic tanks which may easily overflow during floods.

State-owned enterprises and central administration play a key role in urban infrastructure management. Limited enforcement of regulatory obligations for urban waste and waste-water management and the current price regimes in these sectors do not motivate investments into environmental infrastructure. Development of urban environmental infrastructure and environmental actions in cities have therefore been largely subsidized from the state budget and ODA.

Many urban migrants are not formally registered and have difficulties accessing local social (education and health) services which may be critical bottlenecks in case of climate-related disasters and emergencies.

With approximately 75% of Viet Nam's urban population living in the Low Elevation Coastal Zones, many urban dwellers will be also affected by rising sea levels, increasing coastal salination and flood risks and related adaptation challenges.

Existing Bottlenecks

Climate risk information has restricted access and is not published in sufficient resolution to assist urban planning and design.

Urban plans are not prepared through participatory processes and are often changed without community consultations.

Urban planning is approached in a 'siloes' manner and lacks effective inter-sectoral collaboration. Urban development plans do

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not effectively integrate climate change action plans and green growth action plans.

Despite development of public transport systems in large cities, many urban dwellers prefer individual mobility due to 'last kilometre' access. Limited parking restrictions, efficiency and comfort of individual vehicles and new mobility services such as Grab increase the use of individual vehicles.

Use of e-bikes and e-scooters is not properly supervised and promoted as an alternative means of transport amongst adults. Most electric two-wheelers are un-registered and used primarily by youth.

In contrast to global good practice, planning and urban design de-emphasizes pedestrian and bicycle access.

Potential Accelerators

1. Pursue integrated development planning which incorporates the available climate risk information and relevant climate actions (related to e.g. housing, mobility, renewable energy, etc.).
2. Enhance community consultations in the preparation and implementation of urban plans. Ensure the participation of stakeholders that may be potentially affected by the proposed developments, including women, in such consultative processes.
3. Strengthen emission standards and establish environmental fees on high-polluting vehicles (except hybrid/electric). Allow local authorities to collect such fees on annual basis and earmark the revenues obtained for local sustainable mobility solutions.
4. Incentivise public transport, e-mobility and cycling and walking in urban development plans and projects. Better enforce compulsory quotas on minimum green urban space and urban water bodies.
5. Integrate climate-related obligations into the environmental and investment permit process. Require shopping malls/retail centres, high-rise buildings and large housing development complexes to meet energy efficiency targets and partially use renewable energy sources (e.g. rooftop solar PV). Encourage all households and public buildings to install rooftop solar PV.
6. Simplify household registration system in order to facilitate access of urban migrants to social and health services during extreme weather events.
7. Recognize and further develop opportunities for co-benefits between green and liveable cities initiatives and accelerated action in areas such as energy efficiency and resilient adaptation as a means of ensuring highly effective use of future investment resources.



Climate finance and carbon pricing

Context

Viet Nam has enjoyed high GDP growth in the past decade of approximately 5–7% annually.⁶

Most of the GDP growth is currently driven by foreign direct investments into export-oriented manufacturing and the economy is expected to further benefit from shifting trade patterns and trade agreements. The country faces broadly favourable medium-term outlook, assuming climate change risk can be appropriately managed. Viet Nam's longer-term economic prospects may be however adversely affected by reshoring of the current manufacturing capacities, acceleration of aging population, fragility in social security system and job displacements through adoption of Industry 4.0 technologies.

Trade agreements, e.g. between ASEAN members have begun to decrease the country's import tax revenues which may lead to shifts in system of tax collection in the country.

Revenues from Viet Nam's environmental protection taxes applied on different fuels and environmental harmful materials have been steadily increasing since 2012 and constitute a stable contribution to the State budget. These revenues have however so far being only partially used to fund environmental and climate actions.

The current NDC expects that climate change effects will cost 2.5–4 percent of GDP (with respect to GDP revision) and that sustainable development cannot be achieved without adaptation investment and action.

Viet Nam has recently graduated from IDA which increases costs of capital for ODA co-financed environmental and climate projects. Since 2018, the has been gradually reducing its sovereign debt and is enforcing ceiling levels on new public borrowing. These restrictions limit availability of finance for projects having adaptation and mitigation benefits at both national and sub-national levels.

Given Viet Nam's investment deficit in environmental and climate-related projects, there is a growing need for innovative solutions that open up opportunities for private sector participation in such projects.

The current NDC expects that climate change effects will cost 2.5–4 percent of GDP (with respect to GDP revision) and that sustainable development cannot be achieved without adaptation investment and action.

⁶ Potential adjustments of the current GDP calculation methodology in line with UN's System of National Accounts 2008 may generate even higher increases in GDP's level and growth figures.

Existing Bottlenecks

The current system of environmental taxes and fees in Viet Nam does not effectively support environmental and climate actions.

Although the environmental tax on petroleum products is rather high (approx. 58.2 USD/tCO₂e), environmental tax for coal is approx. 350 times lower (0.2 USD/tCO₂e)⁷ and does not motivate a shift to low-carbon solutions in the power sector. Only a small portion of revenues collected from environmental taxes is used for environmental purposes⁸.

Environmental fees for waste disposal and waste-water treatment are too low to motivate investors to invest into less polluting technologies. Collection of environmental fees suffers from low compliance and does not provide sufficient revenues to cover investment and operational costs of municipal environmental infrastructure.

Environmental investments have been largely subsidized by state budget and ODA but the government is increasingly reluctant to provide guarantees for ODA loans. The current ODA procedures do not facilitate an efficient use of blended financial instruments and involve on-lending arrangements that increase costs of ODA loans for climate actions. In addition, current ODA approval processes effectively fend-off the use of Green Climate Fund support for private sector investments (e.g. in renewable energy or energy efficiency).

Private investments that could fill the current investment gap for climate actions and green growth have been further limited by high investment risks that arise due to insecurity of contracts made through PPP schemes or power-purchase agreements. Further on, engagement of private sector in environmental projects having climate co-benefits (e.g. waste management and waste-water management) has been so far constrained by low revenues generated through the current system of environmental fees (waste, waste-water, etc.) that cannot cover costs of environmental infrastructure and response measures.

Local developers of environmental protection and

climate projects also frequently lack know-how or credibility to attract private investors and to match investors and projects effectively. There is no arrangement that would systematically collect, evaluate and support the acceleration of private sector initiatives in these fields.

While the current fiscal tools do not sufficiently incentivise pollution prevention, activities designed to mitigate or offset pollution (e.g. forest carbon sequestration using revenues generated on voluntary carbon markets) are taxed as any other incomes.

Potential Accelerators

1. Gradually adjust environmental taxes so that rates are equal per GHG emission unit across all types of fossil fuels. This can deliver a pro-poor tax regime that also supports industrial modernization through an efficient use of energy. Revenue generated can be earmarked for environmental and climate actions and social support measures.
2. Increase environmental fees so that they cover the total costs of remedial actions (e.g. development and operation of waste-water treatment and waste management systems). Improve their rate of collection and put a ceiling on operational costs involved in collection of such fees.
3. Promote the use of blended finance for critical climate-related investments (e.g. public transport, water management, waste management, etc.).
4. Redefine ODA/IDA rules on the global level to allow lower middle income countries like Viet Nam borrow at concessional rates for all climate change mitigation and adaptation actions.
5. Encourage domestic borrowers to use non-sovereign ODA loans for climate actions. Allow localities, public service providers and enterprises to directly access international climate finance (including ODA) without having to go through compulsory on-lending arrangements.
6. Develop the green and/or blue bond market for raising long-term capital for climate change mitigation and resilience building

⁷ *Opportunities for Carbon Pricing in Vietnam (UNDP, USAID and MOF; 2018)*

⁸ <https://e.vnexpress.net/news/business/data-speaks/vietnam-to-increase-environment-tax-on-fuel-3813109.html>

actions. Strengthen the capacity of local Development Investment Funds to support such investments.

7. Make the voluntary Directive 03 by the State Bank of Vietnam on Promoting Green Credit Growth and Environmental & Social Risks Management in Credit Granting Activities compulsory to all financial institutes that operate in the country.
8. Develop a domestic carbon market. Use resources made available through Joint Implementation arrangements (e.g. with Japan and other partner countries by utilizing tools such as the Joint Crediting Mechanism (JCM) and any other cooperative approaches) to generate initial carbon credits traded in the country and gradually include other offsetting initiatives (e.g. payments for forest carbon ecosystem services) into such single/unified GHG emission trading scheme. When doing so, reduce or abolish tax on revenues generated through carbon trading.
9. Gradually turn the existing PFES systems into results-based payments that incentivise sustainable forest management, agroforestry and other locally appropriate mitigation and/or adaptation actions. After that, expand the scope of the PFES system to include also payments for 'absorption and retaining of forest carbon' as envisaged by Forest Law (2017).



Recommendations

Based on the analysis and key acceleration actions, main opportunities to accelerate implementation of Paris Agreement in Viet Nam include::

- A. Key policy documents for the 2021-2030 period including the SEDS, SEDP, PDP8 are currently under draft. These documents could include clear actions to implement key accelerator actions outlined above, and to support policies that create price signals, regulatory improvements and incentivize investments in climate change action.
- B. Stepped up enforcement of the Law on Energy Efficiency and Conservation could be prioritized focusing initially on high-energy users. Energy management standards and system optimization approaches could be widely promoted to enhance energy efficiency.
- C. Prioritize and focus efforts and investments in key sectors to reduce greenhouse gas emission and build resilience in critical regions. Regarding mitigation, promote a paradigm shifts towards renewable energy, and green, smart, low-carbon, and resilient infrastructure, cities and transportation systems. Eco-Industrial Park approaches could also be systematically promoted by removing inter-ministerial coordination bottlenecks to improve resource productivity, industrial symbiosis, and application of renewable energy and low carbon technology in industrial zones. Administrative barriers that restrict production of renewable power in industrial zones should be removed.
- D. Regarding adaptation, climate data and projections, vulnerability studies and climate action plans could be more effectively incorporated into development plans for urban and rural areas. Lessons from Sustainable and Climate-Resilient Development of the Mekong Delta could be used to facilitate integrated planning with climate change adaptation and mitigation components in other regions (such as Red River Delta or Central Highlands).
- E. Current payments for forest ecosystem services can be turned into results-based payments and expanded to include carbon sequestration services as stipulated in the Forest Law. Revenues raised through carbon sequestration could be exempted from administrative complexities associated with income taxes.
- F. Interested stakeholders (including women and youth) can be more encouraged to participate in climate actions. Stakeholders concerned with environmental impacts of development plans and projects should be given early and effective opportunities to contribute to decision-making.
- G. International climate finance can be used to support private sector activities and be exempted from compulsory on-lending arrangements that increase the cost of borrowing. Regulatory framework could facilitate the use of blended financial instruments and promote direct access to non-sovereign loans.
- H. Domestic climate finance can be mobilized through a gradual equalisation of environmental taxation of different fuels (coal, gasoline, diesel and potentially also natural gas) per GHG emission unit produced. Revenues obtained can be earmarked for environmental and climate actions and social support programmes (e.g. rural development, energy price subsidies for low-income households, etc.).
- I. Viet Nam may suggest to adjust the existing ODA/IDA rules to allow lower middle income countries borrow at concessional rates for all priority climate actions (e.g. energy grid strengthening, renewable energy and energy efficiency, public transport, water management, waste management, etc.).
- J. Viet Nam may also consider linkages between the 4th Industrial Revolution and sustainable development agenda, establish processes that promote innovations with positive synergies and encourage learning and experimentation. Linking the 4th Industrial Revolution with the climate change agenda may not only address environmental pressures but also create green jobs that reduce employment impacts of the forthcoming labour saving technological transformation.



