Identifying Urban Low Emissions opportunities for Lao PDR:

Sub-national needs, stakeholders mapping, and regional experience

URBAN LEDS II | Lao People's Democratic Republic Urban Low Emission Development Strategies









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https://urban-leds.org/



The Urban-LEDS project is funded by the European Union.



ABOUT THE URBAN-LEDS II PROJECT

The Urban LEDS project is an initiative funded by the European Commission under its Global Climate Change Alliance Plus initiative and UN-Habitat and ICLEI-Local Governments for Sustainability (ICLEI) are jointly implementing the project. This initiative addresses integrated low emission and resilient development in more than 60 cities in 8 countries: Brazil, India, Indonesia and South Africa (from Phase I) and countries added in Phase II: Bangladesh, Colombia, Lao PDR and Rwanda. In addition to these countries, 16 European cities act as source cities and support peer-to-peer exchange and cooperation.

The overall objective is to "contribute to the reduction of greenhouse gas emissions by the promotion of Urban Low Emission Development Strategies (Urban LEDS) in cities / towns in emerging economies (Brazil, Colombia, India, Indonesia and South Africa), and Least Developed Countries (Bangladesh, Lao PDR and Rwanda)." One of the four specific objectives is to "enhance vertical and horizontal integration of climate action in support of National and Local Strategies and Policies." This initiative is being implemented in the wake of the Paris Agreement signing at COP21 in 2015. There has been a growing awareness of the need for a coordinated effort from all levels of government to reduce greenhouse gas (GHG) emissions, as noted in the Paris Agreement.

In Lao PDR, the country is facing rapid urbanisation in an environment of weak urban planning, with no operational comprehensive urban strategy, poor coordination at the local level, and a growing vulnerability to climate change. As there is a critical need to mainstream climate action into urban development before settlements progress in a haphazard, the Urban LEDS project is therefore particularly relevant in enhancing vertical and horizontal integration in support of climate action.

This report is an output from the Urban LEDS II project in Lao PDR. It identifies **urban needs to advance low emissions development at the subnational level in Lao PDR, captures stakeholders engaged in low emission actions in Southeast Asia, and explores significant case studies** in order to build a bank of climate change knowledge.

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Abbreviations and acronyms

ADB	Asian Development Bank
ASEAN	Association of Southeast Asian Nations
ASUS	ASEAN Sustainable Urbanisation Strategy
CRO	Chief Resilience Officers (100 Resilient Cities Network)
EU	European Union
GHG	Greenhouse Gas emissions
IBRD	International Bank for Reconstruction and Development
ICLEI	Local Governments for Sustainability
IDA	International Development Association
IKI	International Climate Initiative (Government of Germany)
IWRM	Integrated Water Resources Management
LAO PDR	The People's Democratic Republic of Laos
MPAC	Master Plan on ASEAN Connectivity
NCF	Nordic Climate Facility
NDC	Nationally Determined Contribution
NSEDP	National Socio-Economic Development Plan
SDG	Sustainable Development Goals
SEA	South East Asia/Asian
SEAS	Southeast Asia Secretariat
UN	United Nations
UNCT	United Nations Country Team
UN-Habitat	United Nations Human Settlements Programme
UNSDCF	United Nations Sustainable Development Cooperation Framework
WASH	Water, Sanitation, Hygiene



Executive summary

South-East Asian countries are particularly vulnerable to the effects of climate change. At the same time, the region is facing a rapid urbanisation trend, with minimum planning, poor coordination, inadequate infrastructure and insufficient interest in environmental impacts and climate change integration. In Lao PDR, this phenomenon has led to disorganised growth, inefficient land use, damage and loss of natural assets, and inadequate access to urban basic services¹, compromising developmental efforts and has increased the vulnerability of communities and human settlements in the event of changes of frequency and intensity of extreme climatic hazards.

In this context of uncertainty, recent reports throughout the region have emphasised that poverty alleviation had created regional disparities between urban and rural areas, and inequality has increased at all scales.² In parallel, in order to address the worsening environmental problems as a result of an inadequate solid waste collection and disposal, as well as the poor quality of urban services delivery and urban infrastructure, transparent and effective urban governance, further efforts have to be made to mitigate climate change causes and strengthen actions to build safer, more inclusive and more resilient human settlements. At the same time, integrated and balanced territorial development policies, including affordable housing and sustainable mobility, should be further enhanced to address challenges related to the urban sprawl phenomenon in primary and secondary cities throughout the region.

By being at the frontline of many challenges, urban areas are becoming hubs for innovation and low-carbon initiatives. At the same time, in line with efforts to decentralise actions and tackle climate change challenges vertically, national policies tend to promote a more sustainable urban development through the development of urban low-emissions initiatives to achieve mitigation targets. In this respect, the purpose of this paper is to inform stakeholders on sub-national urban needs in Lao PDR to catalyse efforts, identify future partnerships and financing opportunities, and capture relevant and successful urban low emission initiatives in Southeast Asia that may be scaled-up in the Laotian context.

Using recent publications and experience from the field, the first part of the document focuses on urban needs identified to advance low emissions development at the subnational level. This section builds from conducted assessments at the city level and ICLEI and UN-Habitat documentation. Needs are organised in order of priority considering the local context and sector, and a specific sub-section concentrates on key climate change action needs, giving an overview of the most pressing challenges to achieve to catalyse efforts and funding in Lao PDR. The second part of the document identifies relevant stakeholders engaged in low emission actions in Southeast Asia, providing an overview of potential partnership building opportunities. Finally, the third part aims at building a bank of climate change knowledge by capturing significant case studies related to urban low emissions project throughout the region that may be scaled-up in the Laotian context.

¹ Mekong River Commission (2009). Adaptation to Climate Change in the Countries of the Lower Mekong Basin: Regional Synthesis Report. Vientiane.

² Government of Lao PDR (2021). *National Report Progress on the Implementation of the New Urban Agenda*. <u>https://www.urbanagendaplatform.org/sites/default/files/2021-09/Lao%20PDR%20NUA%20National%20Report.pdf</u>

I. Sub-national urban needs in Lao PDR

In Lao PDR, the current urbanisation rate has resulted in a lack of:

- basic services development such as WASH,
- sustainable mobility and energy initiatives,
- actions considering resilient and affordable housing, and,
- the creation of sustainable urban economies and jobs.

However, despite these gaps, the country has the potential to accelerate sustainable urban development and reduce emissions by incorporating low-carbon and resilient concepts into planning and implementation. In this respect, identified urban needs priorities are as follows:

• Water supply

Access to a safe water supply in urban areas was about 67% in 2012, with 45% of urban households having access to piped water. As ADB recalls, safe water comes from pipes or protected wells and/or boreholes and may still require treatment prior to distribution due to high salinity or mineral content. However, these figures mask significant differences in coverage among the largest towns, which have a combined piped water supply coverage of just under 70%.³

Sanitation

Sanitation remains a key challenge for Lao settlements. Through the pandemic context, this sector has benefitted from significant advancements. However, the inadequate sanitation coverage in urban areas is associated with the lack of clean water and unhygienic practices, causing outbreaks of water-borne diseases, resulting in illnesses and deaths.

Waste management

Solid waste management is inadequate for most Lao cities, with limited collection services and poor final disposal. Where services exist, they serve only limited parts of the towns, tending to focus on the more accessible areas and the more profitable customers, such as markets and higher-income households. When not collected, waste is generally burned or dumped indiscriminately, which has a growing impact on the environment. Furthermore, solid waste generation will increase with urbanisation. To avoid additional environmental damage, cities should develop adequate waste management schemes, and there is great potential at the sub-national level to initiate circular economy initiatives.

Roads and Transport

Transport can significantly contribute to developing low-carbon actions. First, there is potential to secure additional traffic capacity from current roads through improved traffic management, driver behaviour, and traffic enforcement. However, new urban roads construction along with the development of resilient infrastructure will also be required to support appropriate urban development and sustain economic growth.

³ Water Supply Division, DHUP, MPWT (2009). Service and Consumption of Urban Water Supply 2008. Vientiane

As UN-Habitat stated in a 2021 report, three-quarters of the infrastructures planned for 2050 are yet to be built.⁴ Furthermore, formal urban public transport is still limited except for Vientiane. Falling under the responsibility of local authorities, Lao PDR has the potential to deploy integrated public transport systems in line with its commitments to mitigate and adapt to climate change.

• Access to Housing

As stated by ADB, ⁵ the estimated requirement for housing units in urban areas in Lao PDR was 219,000 units for the 2003–2020 period. It was envisaged that government involvement in the housing sector would primarily be as a facilitator of private sector participation. However, a national housing policy is still needed to achieve affordable and resilient housing targets, especially since the increasing urbanisation rate has resulted in an increase in the number of poor urban households demanding low-cost housing. Failure to fill this demand adequately will result in slum and squatter settlements in major urban centres.

• Energy

Considering the energy sector, Lao PDR has great potential to develop renewable energy using hydraulic, solar and biomass sources. Set as a priority of the 9th National Socio-Economic Development Plan (9th NSEDP), investing in and deploying clean energy initiatives is a relevant solution to enable an urban low-emissions development.

• Urban economy and green jobs

Finally, with a young and dynamic population, the country needs to strengthen its urban economy to be more resilient to shocks and climate change. Consequently, there is a pressing need to develop green jobs at the sub-national level to advance social inclusion and reduce urban poverty.

I.1. Key climate action needs

In line with the above-mentioned urban needs, critical climate action needs have been identified to specifically target pressing issues and catalyse efforts to ensure sustainable and low emission focused urban development.

Urban planning and governance

 Strengthen urban and regional planning, including incorporating environmental issues and climate change into urban management. This can be advanced by elaborating climate change policies and plans for major urban areas using vulnerability and needs assessments methods.

⁴ UN-Habitat (2021). *Environmentally conscious UN-Habitat project uses stone dust, not sand, to conserve energy*. <u>https://unhabitat.org/environmentally-conscious-un-habitat-project-uses-stone-dust-not-sand-to-conserve-energy</u>

⁵ ADB (2012). Urban Development Sector Assessment, Strategy, and Road Map.

https://www.adb.org/documents/lao-peoples-democratic-republic-urban-development-sector-assessmentstrategy-and-road-map

Water supply

- Increase access to clean water by developing resilient water supply projects in small towns (e.g. resilient small-scale water infrastructures, wastewater treatment systems).
- Accelerate the development of Integrated Water Resources Management (IRWM), and promote water integrity.

Sanitation

 Increase sanitation coverage and develop sustainable and resilient wastewater treatment systems using low-cost and resilient processes that communities can maintain and manage.

Waste management

- Accelerate the development of decentralised solid-waste management systems.
- Promote circular economy schemes.

Roads and Transport

- Accelerate the development of sustainable public transport for primary and secondary cities in Lao PDR.
- Invest in resilient infrastructure such as human-centric and nature-based infrastructures.
- Promote the use of "soft" mobilities and electric vehicles.

Access to Housing

- Catalyse investments from public and private entities to develop affordable housing targeting the most vulnerable.
- Support the development of sustainable and climate-resilient housing strategies and guides.
- Promote the development of resilient construction practices using local resources and considering geographical and cultural contexts, and indigenous knowledge.

Energy

• Accelerate the development of renewable energy sources and engage in innovation.

Urban economy

- Promote circular economy systems to create green jobs.
- Invest in youth education and training to diversity local workforces, with a particular focus on environmental and climate issue integration.

II. Stakeholder's mapping

At the regional and national level, various stakeholders are engaged in climate action. With particular mandates and interests, it is critical to engage everyone in order to enable them to work together. This has the advantage of catalysing efforts, as well as providing a platform to access diversified ways of funding.

In this respect, Southeast Asia is particularly dynamic when it comes to climate initiatives. Several institutions are supporting local efforts. Meanwhile cities and municipalities of all sizes are significantly engaged in building networks to connect actors, share best practices and develop sustainable solutions in a number of areas. These include reducing local vulnerability, GHG emissions and improving resilience in cities and communities.

II.1. Institutional entities

The Association of Southeast Asian Nations (ASEAN)

ASEAN facilitates effective decision-making within and amongst ASEAN bodies.

For the entire region, urbanisation is a crucial driver of economic growth, yet rapid urbanisation makes it difficult for urban infrastructure development to keep pace, giving rise to issues such as economic inequality, congestion, and environmental and health problems. To maintain the benefit of urbanisation, ASEAN cities need to take a proactive, coherent approach in ensuring that adequate and sustainable urban infrastructure are in place.

At the institutional scale, ASEAN has developed several initiatives to accelerate low-carbon and resilient urban development. For instance, the ASEAN Sustainable Urbanisation Strategy (ASUS) is one of the initiatives under the strategic area of "Sustainable Infrastructure of the Master Plan on ASEAN Connectivity (MPAC) 2025". It provides ASEAN cities with a framework of sustainable urbanisation based on six areas, namely civic and social, health and well-being, security, quality environment, built infrastructures, and industry and innovation. It consists of this report as well as two accompanying toolkits that will assist local governments in ASEAN to advance sustainable urbanisation in their cities.

The World Bank

The World Bank Group is a unique global partnership aimed at reducing poverty and building shared prosperity in developing countries. Highly active in Asia and the Pacific, World Bank regional vision focuses on three priority areas:

- **Promoting private sector-led growth:** Expanding private sector opportunities and creating an enabling environment for investment and innovation are crucial to ensuring sustainable growth in the region.
- Enhancing resilience and sustainability: In a region highly vulnerable to the effects of climate change, the bank works with countries and partners to enhance resilience, reduce greenhouse gas emissions, and support clean energy.
- **Building human capital and inclusion:** Investing in human capital is key to ensuring long-term sustainable growth and reducing poverty in the region.

Acting as an institutional partner and as a development bank, the World Bank approved US\$7.3 billion in the region for 77 operations during fiscal year 2020, including US\$4.8 billion in International Bank for Reconstruction and Development (IBRD) loans and US\$2.5 billion in IDA commitments. The Bank has also signed Reimbursable Advisory Services agreements – customized advisory services and analytics paid for by non-commercial requesting clients – with three countries for a total of about US\$4 million.

As a result, the World Bank is a key player for urban low emissions development in Southeast Asia.

The United Nations system

The United Nations system is also an important stakeholder at the country and regional level. Considering climate action, many agencies and programmes are implementing projects related to low emissions initiatives to ensure resilient and sustainable development. In Lao PDR, the United Nations Country Team (UNCT) is particularly active and the new UN Reform along with the development of a New UN Sustainable Development Cooperation Framework (Lao PDR UNSDCF 2022-2026) aims at building synergies, promoting inter-agency collaboration, and thereby delivering as one.

Municipalities and Local governments

Local governments and municipalities are also at the frontline of climate initiatives, and are particularly active in developing innovative projects to advance climate resilience. Many cities are therefore part of dynamic regional networks as further explained below, facilitating knowledge and good practice exchanges.

II. 2. Financing institutions

Asian Development Bank (ADB)

Through its 2030 Strategy, Asian Development Bank has identified "Making cities more liveable" as one of its operational priorities. Accordingly, ADB works to support the transformation of developing cities in the Asia and Pacific region into safe, inclusive, and sustainable urban centres. With the aim of developing transformative opportunities and supporting global agendas with city-level plans, ADB's work focuses on technical assistance for urban basic services improvement, urban planning and financing, and additionally improving urban environments, climate resilience and disaster risk management.

The European Union (EU)

The European Union through its different organs is a key financing partner at the regional scale, especially for climate action. For cities, the EU has promoted several programmes such as the Urban-LEDS II project aimed at addressing integrated low emission and resilient development in more than 60 cities in 8 countries including Lao PDR and Indonesia.

The Nordic Climate Facility (NCF)

The Nordic Climate Facility finances innovative climate change projects in developing countries. At the regional level, the facility has been particularly active in Lao PDR, Vietnam

and Cambodia, focusing on low GHG emissions initiatives to improve the living conditions of the most vulnerable.

The International Climate Initiative (IKI) | Government of Germany

The International Climate Initiative (IKI) is the most important instrument utilised by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) of Germany to support international climate action and biodiversity. With the IKI, the BMU supports solution strategies in developing and emerging countries that seek to achieve sustainable change. IKI assists countries to implement their Nationally Determined Contributions (NDCs) as well as running projects from organisations that implement a range of measures in and with the respective partner countries in the fields of climate mitigation and adaptation, forest protection and biodiversity.

II. 3. Networks

Local Governments for Sustainability (ICLEI)

ICLEI is a global network working with local and regional governments committed to sustainable urban development. ICLEI Southeast Asia Secretariat (ICLEI SEAS), based in Manila, Philippines, serves ICLEI Members in Indonesia, Malaysia, the Philippines, Laos, Vietnam and Thailand.

Particularly active in the region, ICLEI influences sustainability policy and drives local action for low emission, nature-based, equitable, resilient and circular development. Members and teams of experts work together through peer exchange, partnerships and capacity building to create systemic change for urban sustainability.

Its vision focuses on 3 key priorities:

- **Connecting Leaders** ICLEI is a growing association of cities and local governments leading the way in sustainable development with a worldwide presence, which connects leaders in strategic alliances, which prepares cities for the future, whose voice is heard, and which is attractive to be a member of, work for, and partner with.
- Accelerating Action ICLEI is a high-energy, flexible movement of local governments working together in national, regional, and international networks; engaging in global campaigns for sustainability, participating in performance-based programs, advancing through an international exchange of experiences and solutions – a movement which is supported by campaigns, programs, and strategic alliances.
- Gateway to Solutions ICLEI is an effective sustainability and environmental Agency strengthening local government capacity to find radical solutions and act rapidly; providing advanced knowledge and delivering training to local planners and decision makers; showing creativity and excellence in developing innovative methods and tools; and serving a gateway for cities and local governments to solutions for the future.

100 Resilient Cities

The 100 Resilient Cities Network is one of the world's leading urban resilience networks. This platform consists of cities that are committed to building and investing in urban resilience worldwide with a city-led, impact-focused, regionally-driven, and partnership-based focused vision. In Southeast Asia, primary and secondary cities are part of this initiative including Bangkok (Thailand), Can Tho (Vietnam), Da Nang (Vietnam), Jakarta (Indonesia), Mandalay (Myanmar), Melaka (Malaysia), and Semarang (Indonesia).

With thousands of projects in implementation, the 100 Resilient Cities (100RC) was pioneered by The Rockefeller Foundation in 2013, as part of its Global Centennial Initiative. In over five years of deep engagement with city leaders, communities, and the private sector, this dynamic network enabled transformational change in cities through support of resilience plans and early implementation of projects.

100RC was built on a substantial investment from The Rockefeller Foundation which enabled cities to hire a Chief Resilience Officer, develop a resilience strategy, access pro-bono services from the private sector and NGO partners, and share and receive ideas, innovation and knowledge through the global network of Chief Resilience Officers (CROs).

From the experience of creating resilience strategies in dozens of cities, this network learned that using a resilience lens strategically to plan a portfolio of actions creates higher-impact projects that can deliver benefits to multiple sectors, in particular to vulnerable communities.

Therefore, actions engaged by cities through this network aim at addressing critical challenge such as the limited support at the city level to articulate and develop innovative ideas, or to turn these ideas into bankable projects. To achieve this objective, with continued support from The Rockefeller Foundation and other funding partners, the Resilient Cities Network (R-Cities) aims to support cities and their CROs in future-proofing their communities and critical infrastructure.

CityNet

CityNet is the largest association of urban stakeholders committed to sustainable development in the Asia Pacific region. Established in 1987 with the support of UNESCAP, UNDP and UN-Habitat, CityNet has grown to include over 173 municipalities, NGOs, private companies and research centers. Today, it comprises many SEA cities, including Bangkok, Hanoi, Ho Chi Minh City, Jakarta, Kuala Lumpur, Penang, Phnom Penh, Putrajaya, and Quezon.

CityNet connects actors, exchanges knowledge and builds commitment to establish more sustainable and resilient cities. Through capacity building, city-to-city cooperation and tangible projects, this initiative supports its members to respond to climate change, disaster, the Sustainable Development Goals (SDGs) and rising infrastructure demands.

Porous Cities Network

Porous Cities Network is a relatively young network in the region. With an initial objective to increase climate resilience in Bangkok through a built network of permeable public space projects, the network has expanded to other regional countries sharing knowledge of design solutions for climate resilience through research, outreach, and public education.

Community-driven, this initiative focuses on vulnerable communities using landscape architecture tools and processes to build more sustainable cities by transforming underused impervious surfaces into a system of productive public green spaces, and advocates maintaining threatened landscape infrastructure like agricultural land, canals, and ditch orchards, which help mitigate excess water.

As indicated in its name, *Porous cities* advocates for making the city porous with solutions calling for permeable interventions like urban farms, green roofs, rain gardens, and permeable parking that provides needed space for water absorption and climate mitigation and adaptation.

Constituted of landscape architects, urban designers, and environmental designers, this initiative is different from other climate-focused organizations. Instead of focusing on policy or training, it aims at providing real, built solutions to climate challenges that benefit vulnerable communities right away.

III. Southeast Asian experience

Throughout the region, many cities have elaborated processes and developed initiatives to enhance urban low-emissions actions. In this respect, this section aims at capturing the diversity of local responses and exploring successful initiatives that may be scaled-up in Lao PDR.

III. 1. Linking climate and urban policies

PHILIPPINES: Mainstreaming climate change into urban-related policies

Location:	Philippines (National Scope)
Duration:	6 years (2017-2023)
Implementing	
partners:	Climate Change Commission (CCC), UN-Habitat Philippines
Grant:	n/a
Website:	<u>https://dhsud.gov.ph/wp-</u>
content/uploads/Publ	ication/Guidebooks/NUDHF_Full_Version_FINAL.pdf

The National Urban Development Housing Framework (NUDHF), which is the national urban policy, was identified as a strategic starting point for mainstreaming climate change into urban development and urban planning. The 2017-2023 NUDHF envisions "Better, greener, smarter urban systems in a more inclusive Philippines". The NUDHF aligns with both the current Philippine Development Plan and the Philippine New Urban Agenda which was submitted to the Third World Conference on Human Settlements (Habitat III). The process of updating the NUDHF involved participatory multi-stakeholder and cross-sector activities and resulted in the successful mainstreaming of climate change concerns. The Climate Change Commission (CCC) with UN-Habitat, then held a forum to integrate urban climate change concerns into the National Climate Change Action Plan. HLURB and CCC are now working together to synergise their policies and actions to promote urban climate resilience and low emission development.

Lessons learned:

- While climate change and urban development policies and legislations are well established in the Philippines, gaps exist in mainstreaming one to the other.
- There is still limited climate change data and information that directly or explicitly relates to urbanization and urban development. Focusing on the NUDHF, which is a comprehensive and integrated policy document, made it easier to convey the systems approach to climate actions.
- Mainstreaming climate change into a national-level urban framework policy like the NUDHF requires multi-sector and multi-level participation and engagement
- There is a need for a targeted communications plan and monitoring and evaluation (M&E) scheme

MALAYSIA: National Low Carbon Cities Masterplan (NLCCM) – GTALCC

Location:	Malaysia (National Scope)
Duration:	4 years (2015-2020)
Implementing	
partners:	Government of Malaysia, UNDP Malaysia, Sustainable Energy Development Authority (SEDA)
Grant:	n/a
Website:	https://www.kasa.gov.my/resources/alam-sekitar/NLCCM.pdf

The NLCCM is an initiative under the Green Technology Application for the Development of Low Carbon Cities (GTALCC) initiative. GTALCC is a 2016-2021 project which facilitates the implementation of low carbon initiatives in Malaysian cities, showcasing a clear and integrated approach to low carbon urban development. GTALCC is funded by the Global Environment Facility (GEF), and is implemented by Government entities with the support of UNDP. The project has a goal of generating GHG emission reductions of 346,442 tons CO2 by the end of the project. The project has components of policy support, capacity building and low carbon technology investments and demonstration projects.

Within GTALCC, the strategic framework of the NLCCM sees the key drivers of low carbon cities as being governance and implementation framework, urban planning, community participation, funding and capacity building, data collection and analysis, and built environment and physical infrastructure. From this perspective, the NLCCM adopts the 3M approach (Measurement, Management and Mitigation of GHG emissions) to reduce environmental impacts.



Figure 1. Kuala Lumpur ${\ensuremath{\mathbb C}}$ Flick, Bjorklund Jakob.

III. 2. Low-carbon mobility

VIETNAM: Supporting low-emission plans for basic urban services in the context of the New Urban Agenda

Location:	Hanoi, Vietnam
Duration:	4 years (2017-2021)
Implementing	
partners:	UN-Habitat, Wuppertal Institute for Climate, Environment and Energy GmbH (Wuppertal Institut für Klima, Umwelt, Energie GmbH) – Germany.
Grant:	500.000 € (IKI – Government of Germany)
Website:	http://www.urban-pathways.org/hanoi.html

The project supports the implementation of the Paris Agreement and the NDCs within the framework of the New Urban Agenda (NUA) and the SDGs. It also supports national and local governments in key emerging economies with high mitigation potential in developing national action plans and concrete local implementation concepts to promote sustainable and low-emission urban development. The action plans summarise the political, technical, socio-economic and financial feasibility, while the local implementation concepts are further developed into bankable projects, with the focus on access to basic urban services. This process will then be replicated at regional level through policy development, implementation support, advice for stakeholders, and financing mechanisms.

The demonstration project in Hanoi focuses on boosting the ridership and effectiveness of the currently running BRT and the forthcoming metro rail with shared E-2 wheelers as last-mile connectivity. The shared E-scooter/E- mopeds system will be equipped with state-of-the-art docking-cum-charging stations and contactless payment that provides a smooth experience of e-mobility , combined with longer trips on public transport. The project will be a win-win for both public transport and e-mobility. As the city of Hanoi intends to ban the use of motorcycles in the inner city by 2030 responding to vehicle emission issues, this project will support the plan to phase out conventional ICE 2-wheelers.



Figure 2. Streets in Hanoi, Vietnam © Flick

III. 3. Resilient housing and infrastructure

VIETNAM: Implementing incentives for climate resilient housing among the urban poor in Vietnam

Location:	Da Nang, Vietnam
Duration:	3 years (2016-2019)
Implementing	
partners:	Vista Analyse, Institute for Social and Environmental Transition (ISET) $-$
	Vietnam , Da Nang City Women's Union (WU), Hue College of Economics -
	Hue University
Grant:	US \$ 897,891 (Nordic Climate Facility)
Website:	https://www.nordicclimatefacility.com/info/8059

This project assesses segments of the low-income housing market in Da Nang and, in collaboration with the Women's Union and other local partners, develops and tests sustainable and innovative incentives for investment in storm-resistant housing suitable for different segments of the low-income housing market. The project has also considered potential support for climate mitigation measures in combination with adaptation measures.

At the end of the project, this initiative enabled the following impacts

- Increased resilience: 135 houses have been built or retrofitted as part of the project and are now more resilient to extreme weather conditions.
- Improved capacity of local stakeholders: The capacity of the Women's Union staff has been strengthened at multiple levels in operating and managing climate-resilient housing programs.
- Input for policy development: The project recommends that the local and central government in Vietnam base their policies on the conclusions of the project. The size of the subsidy for near-poor households is similar in size to what has previously been spent on supporting house repairs after severe typhoons.



Figure 3. Damaged houses in Central Vietnam @Nordic Climate Facility

CAMBODIA: Develop and test low carbon resilient approaches and options in urban areas

Location:	Phnom Penh, Cambodia
Duration:	2 years (2017-2019)
Implementing	
partners:	Ministry of Environment
Grant:	USD 352,560 (Government of Cambodia-Cambodia Climate Change Alliance)
Website:	https://ncsd.moe.gov.kh/dcc/project/develop-and-test-low-carbon-resilient-
approaches-and-c	ptions-urban-areas

The project will conduct vulnerability assessments in order to identify the climate adaptation needs in target schools, leading to the identification of activities to be integrated in a programme for climate resilient eco-schools. Moreover, the project will conduct market analysis for electric bikes, carry-out tests on GHG reduction and cost comparisons with traditional motorbikes, and public awareness activities. Policy recommendations will be developed to promote e-bikes as a low carbon technology in urban transport. Additionally materials including advertisement spots, TV news briefs, documentaries, and news to be distributed and broadcast on both public and private TV stations and radio programs, raising awareness of the issues. Newspapers will also help raise awareness of the solutions being tested by the project.



Figure 4. Urban farming activities in a Cambodian eco-school @Government of Cambodia

III. 4. Waste Management

INDONESIA: Community-based waste management using Black Soldier Fly (BSF) system

Location:	Bogor, Indonesia
Duration:	4 years (2017-2021)
Implementing	
partners:	ICLEI East Asia Secretariat, ICLEI Southeast Asia Secretariat, Government of
	Germany
Grant:	3.099.419,40 €
Website:	https://circulars.iclei.org/wp-content/uploads/2021/03/Bogor_ICLEI-
Circulars-case-stud	dy_Final-2.pdf

As part of the Ambitious City Promises initiative led by ICLEI, the city of Jakarta in Indonesia participated in the implementation of infrastructure and behavioral change pilot projects. The community-based waste management using BSF system has enabled the installation of a Black Soldier Fly treatment system at Rawasari temporary waste disposal site with the objective to demonstrate a circular economy model.

The pilot project deployed a decentralized community-based waste management system in DKI Jakarta using local and environmental-friendly technology. Results were successful with the following advancements:

- · 365 tons/year of organic waste diverted from landfills;
- 52 direct jobs created;
- · 5000 households participated in the management;
- 400 tCO2e/year GHG emissions avoided.



Figure 5. Workers at Rawasari temporary waste disposal site @ICLEI

MYANMAR: UN-Habitat solid waste management project in Myanmar to lower methane emission

Location:	Yangon, Myanmar
Duration:	4 years (2017-2021)
Implementing	
partners:	UN-Habitat, Pollution Control and Cleansing Department (PCCD) – Yangon City Development Committee (YCDC), Fukuoka City – Solid Waste Advisory Network (SWAN)
Grant:	US \$5,631,769 (Government of Japan)
Website:	https://unhabitat.org/un-habitat-solid-waste-management-project-in-
myanmar-to-lower-	methane-emission

In the Project for the Urgent Improvement of Solid Waste Management in Yangon City, UN-Habitat applied the Fukuoka Method in the Htlein Bin open landfill. The method leads to faster decomposition of waste materials, improves the quality of the leachate, and reduces emissions of methane gas.

The objective of the project is to contribute to reduce the risk of future fire and environmental hazards by the establishment of resilient, safe and sustainable waste management systems for Htein Bin dump site in Yangon through the implementation of the Fukuoka Method of Solid Waste Management (SWM).

The project has prevented 150,000 residents that live in the surrounding area of Htein Bin from being at risk of health hazards and reduced smoke pollution in Yangon. In the long-term, the project has contributed towards the longevity of the dumpsite use, the reduction of methane emissions, and has reduced the risk of fire outbreaks thereby helping to keep the city clean and liveable. The 60-hectare Htein Bin open landfill site collects about 1,500 tonnes of daily waste, compared to the overall 2,000-3,000 tons of waste generated in Yangon city each day. Under the project, 49 hectares of the existing landfill site are being rehabilitated.



Figure 6. The Htein Bin dump site before rehabilitation @UN-Habitat Myanmar

III. 5. Clean energy

PHILIPPINES: Pasig REcharge!

Location:	Pasig, Philippines
Duration:	4 years (2017-2021)
Implementing	
partners:	ICLEI East Asia Secretariat, ICLEI Southeast Asia Secretariat, Government of
	Germany
Grant:	3.099.419,40 €
Website:	https://www.international-climate-
initiative.com/en/detail	s/project/ambitious-city-promises-commitments-for-lowcarbon-urban-

development-in-southeast-asian-large-cities-17_I_280-543

Part of the Ambitious City Promises initiative led by ICLEI, the city of Pasig in the Philippines showcased green building solutions that enhance efficiency of building structures, improve resource circulation, enhance occupant productivity, and potentially contribute to GHG emissions reduction (in one selected pilot *barangay* - the smallest administrative division in the Philippines). The 12.16 kWp of rooftop solar panel systems and 1,000 L portable biogas digester were installed along with 64 units of energy efficiency AC and lighting. This initiative has resulted in the following impacts for local communities significantly improving local living conditions and advancing climate mitigation:

- 18,336 kWh/year electricity savings
- 11 tons/year organic waste diverted from landfill
- 30 tCO2e/year GHG reduction



Figure 7. Portable biogas digester located in Barangay Sta. Rosa's materials recovery facility @ICLEI





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