SIPA | SUPPORT TO VIET NAM FOR THE IMPLEMENTATION OF THE PARIS AGREEMENT

DCC Department of Climate change

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IKI INTERNATIONAL CLIMATE INITIATIVE

Urban Ecosystem-based Adaptation

SUSTAINABLE URBAN DRAINAGE SYSTEMS

BUILDING RESILIENT CITIES AND ADAPTING TO CLIMATE CHANGE

Context and rationale

Located in central Viet Nam, Dong Hoi city is the economic, social and cultural capital of Quang Binh province. The city is particularly vulnerable to climate change due to a variety of factors. These include the province's topographical features, the city's geographical location, its complex economic assets, and rapid urbanization.

The climate in Dong Hoi is characterized by hot and dry summers, followed by periods of heavy rainfall and tropical typhoons. When rainfall is unable to infiltrate into the ground, runoff water accumulates in low lying areas, which frequently results in large-scale flood events and localized, short-term flooding of infrastructure. The large extent of sealed areas intensifies the problem.

In this context, the project "Support to Viet Nam for the Implementation of the Paris Agreement" (VN-SIPA) is supporting implementation of a Sustainable Urban Drainage System (SuDS) in Dong Hoi in cooperation with the Quang Binh Environment and Urban Development Joint Stock Company. The SuDS model is a 'green-grey' infrastructure intervention that reduces the impacts of floods in urban areas.

Design and benefits of the SuDS p roject in Dong Hoi

Intersection of Huu Nghi Street and Ly Thuong Kiet Street

01 Green surface layer surrounded by permeable pavement

02 Underground storage tank for accumulation and storage of rainwater

03 Network of perforated uPVC collection pipes and a check valve to prevent backflow of water into the SuDS

SuDS p roject in numbers

352 square metres — Project area

150 cubic metres — Rainwater storage capacity

74.86 square metres — Renovated permeable pavement

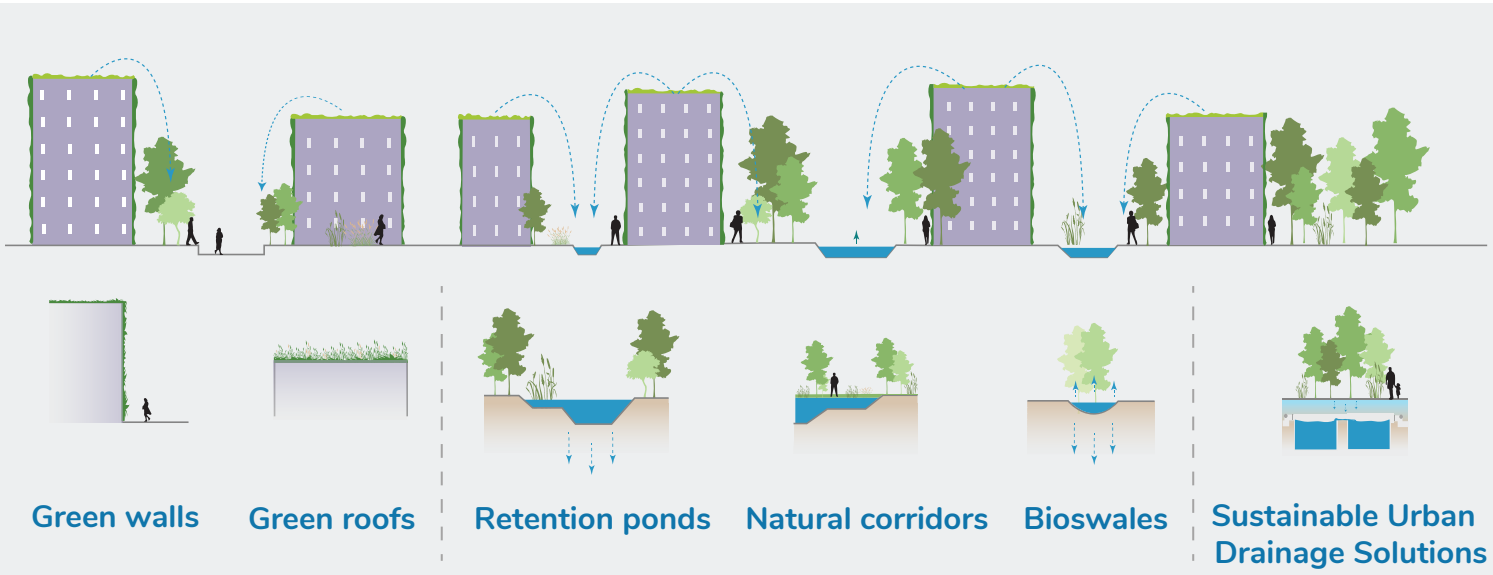
Benefits of urban Ecosystem-based Adaptation (EbA)

Minimize risk and vulnerability
Increased ability to control storm water
Additional water retention using an underground storage tank
Reduced local inundation risk and traffic jams caused by inundation
Fewer urban heat islands

Ecological services
Groundwater recharge
Enhanced biodiversity for native plants and animals
Increased public spaces
Creation of an educational space on ecosystem-based adaptation
Enhanced physical and mental health of the surrounding community

Elements of Ecosystem-based Adaptation in Dong Hoi

The VN-SIPA project is supporting in Dong Hoi the development of urban Ecosystem-based Adaptation (EbA) with policy advice, capacity development and the implementation of EbA measures which contribute to flood water capture and storage, mitigation of heat islands and air purification. The following measures are supported in Dong Hoi: natural corridors, water retention ponds, bioswales, green walls and green roofs, and sustainable urban drainage system (SuDS).



ⓘ What is Ecosystem-based Adaptation?

Ecosystem-based adaptation (EbA) is commonly understood as the use of biodiversity and ecosystem services to help people adapt to the adverse effects of climate change (Convention on Biological Diversity, 2009).

It has been proven in many parts of the world to bring various additional co-benefits compared with grey adaptation measures; such as restoring local ecosystem services and increasing people's well-being.

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More information on the project:
https://www.giz.de/en/worldwide/78598.html