

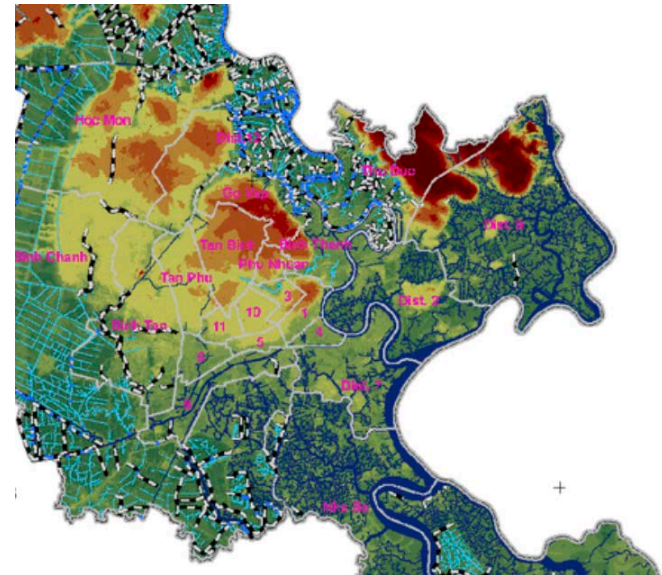


Foreign, Commonwealth
& Development Office

GLOBAL FUTURE CITIES PROGRAM

CITY-TO-CITY KNOWLEDGE EXCHANGE

Development of Geographical Information System for Drainage Network in Ho Chi Minh City, Vietnam



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Presentation outline

Project background and objectives

Desired outcomes and impacts

Project scope and current status

Challenges and opportunities

Lessons learned and key risks

MOU signing between FCDO and DOC, DOT



Project background: city profile of HCMC

- The biggest city of Vietnam: 10 million inhabitants living in an area of 2,100 sq km
- High urbanisation rate with a growth rate of 3%/ year
- The city is vulnerable to flooding where it experiences this phenomenon regularly. Flooding will be further exacerbated in the future due to the risk from climate change. The rising sea levels, along with tidal pressures, could inundate the majority of the city in future

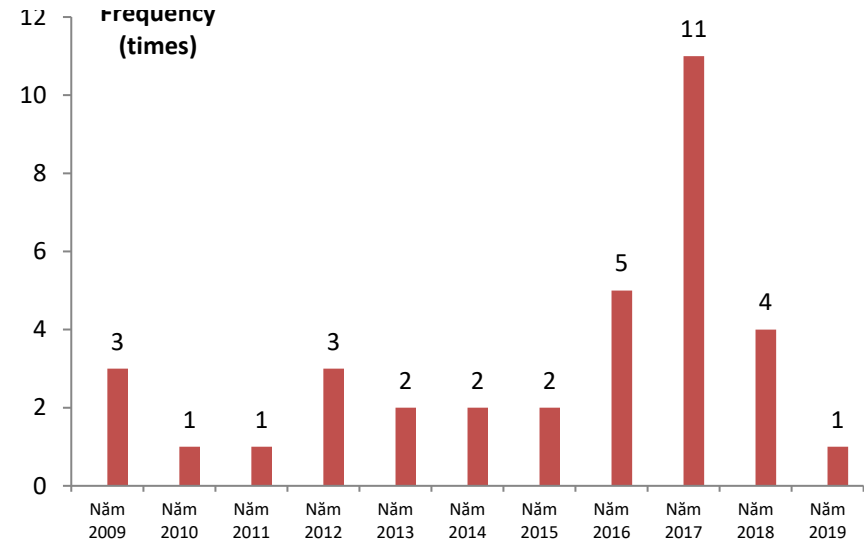


Project background: flooding

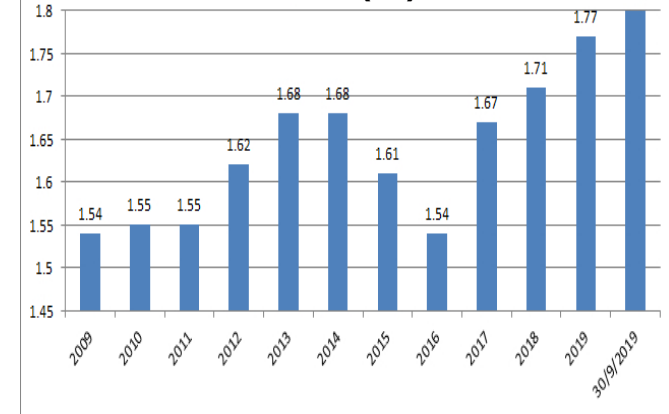
- Flooding caused by multiple factors including intense rainfall and high-tide level
- Every year, serious issues regarding flooding during rainy season spanning from July to November and high-tide level during September – December.
- Water level of high-tide increased during the last some years



Rainfall > 100mm during 2009-2019



Highest water level of high-tide (m)



Project background

- The drains were established during multiple timeframes, starting from the French colonial era to the current post-independence one. Some parts have been downgraded but could not be replaced.
- Small dimension (600-800mm), serving for local streets only



Project background

- The current database of these drains is incomplete.
- Within the IMC, data is managed through a combined system of paper-based documents, Excel files and CAD drawings. This database is updated manually. In many cases, the task of updating the data is carried out without synchronising and cross-referencing between related data.
- The planning tasks for the drainage system, meanwhile, currently belong to the DOC and DPA.
- Hence, there is a limited understanding of the system, leading to a weak management of the whole network.



The development and implementation
of GIS project

Summary of project development and implementation

Time	Project phase
2017	First mission of UK FCDO for Global Future Cities Programme in HCMC
2018	Strategic Development Phase: project identification and TOR development
Jan 2019	MOU between UKFCDO and HCMC PC
Jan-Sep 2019	Bidding and selection of Delivery Partner. Project kick-off in Sep 2019
2020	Establishment of IMC (as the replacement of former SCFC)
Dec 2019 – June 2022	Project implementation

Project objective

Overall objective of GIS project :

- Support HCMC in achieving the Sustainable Development Goal 11.5: *“By 2030, significantly reduce the number of deaths and the number of people affected and substantially decrease the direct economic losses relative to global gross domestic product caused by disasters, including water-related disasters, with a focus on protecting the poor and people in vulnerable situations”*

TARGET

11.5

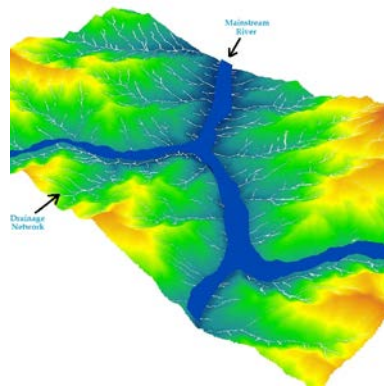


REDUCE THE ADVERSE EFFECTS OF NATURAL DISASTERS



Desired outcomes

- The main outcome of the Intervention is to develop a core GIS platform for the Drainage System in Ho Chi Minh City.
- The core system will be developed with a pilot project implementation in selected areas, capacity building and long-term development strategy and technical preparation to facilitate further integration of future city-wide GIS system
- The project will specifically contribute to a better management of the city's Drainage System and therefore mitigate the negative effects of flooding in HCMC



Expected impacts

The project is expected to have long-term impact on flooding management and control of Ho Chi Minh City, by:

- Improving the quality of the overall Drainage System Management;
- Providing comprehensive data to support the decision-making process of government and stakeholders in related-issues;
- Improving the capacity of city authorities to adapt to, mitigate and control floods
- Improving understanding of flood-prone areas and indirectly reducing the number of people affected and stem economic losses caused by flooding
- Transforming the urban management tasks of HCMC
- Overall, increasing the resilience of HCMC by providing the city with a framework for managing flooding through the shared database

Project scope and current status

Task	General description	Current status
Task 1	Review and assess the Drainage System and Flooding Data Management and Applications of GIS in Urban Management in HCMC	100%
Task 2	Define the scope and carry out surveys and measurement on the Drainage Network in HCMC	100%
Task 3	Develop the comprehensive GIS for the Drainage System of HCMC	60%
Task 4	Using the newly-established GIS, develop flood models at selected catchment area and neighbourhood	30%
Task 5	Develop a long-term strategy for GIS of the Drainage System in HCMC and propose an integration strategy with the GIS of the city	20%

Challenges and opportunities

Challenges

- Fragmented data management regarding urban infrastructure and flooding
- Institutional and legal barriers regarding urban management
- Technical capacity of city authorities in system O&M
- Impacts of Covid-19

Opportunities

- Working with international partners
- Integration of GIS dataset into the city-wide system
- Asset management support

Lessons learned

Establishment of GIS Technical Working Group within IMC with in-depth knowledge on relevant fields

Proactively enable the dialogue and discussion

Regulations regarding financing for system establishment and operation

Planning for sustainability and for the future: long-term action plan



Key risks

Legal framework and approval process regarding GIS dataset and shared data: only general orientation, no detailed guideline

Continuation after the implementation of existing GIS project

Challenges regarding system investment and O&M

Long-term practical application for GIS data and flood modelling

Other institutional barriers regarding data management

Thank you for your attention!



Contact

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