

GCRF-OSIRIS/ STAKEHOLDER ANALYSIS

*Optimal Investment Strategies to Minimize Flood Impact
on Road Infrastructure in Vietnam*

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GCRF-OSIRIS Stakeholder Analysis

The GCRF-OSIRIS project is being implemented in Hanoi, the capital city of Vietnam. This is convenient because data for the city is comparatively accessible, and because, as a relatively small project in relation to the scale of the problem (flood impacts on urban roads in Vietnam), a study of Hanoi can be seen as a pilot or case study for further application of the methodologies in other cities.



Figure 1. Hanoi City



Figure 2. Zooming in on Central Districts

Hanoi has 12 urban districts, 1 district-level town, and 17 rural districts. The area identified for study are the central districts on the west side of the Red River. This area comprises six urban districts: Ba Dinh, Dong Da, Hoan Kiem, Hai Ba Trung, Thanh Xuan and Hoang Mai; and one rural district: Thanh Tri, which is adjacent to Thanh Xuan and Hoang Mai Districts and is on the west bank of the Red River.

Additionally, to analyse the impacts of floods on road infrastructure at community level, the project will carry out socio-economic and environmental assessments in a representative hotspot: My Dinh Ward, of Nam Tu Liem District.

This Stakeholder Analysis is a first step in the project, to help establish the checklist of groups and institutions which are relevant to, or will participate in the project. The analysis considers which stakeholders have useful information, knowledge or data; the impact of flooding of Hanoi roads on different stakeholder groups; the costs and benefits to different stakeholders in relation to different transport system investment strategies; which stakeholders should be targeted for capacity development; and which stakeholders should be consulted on the different aspects of the research.

As the project moves forward in 2018-2019, the project partner agencies in Vietnam will draw key stakeholders into project activities, including communities and institutions in the focus localities, and development agencies and policy makers at all levels. Networking among these stakeholders will contribute to developing realistic and practical optimization models.

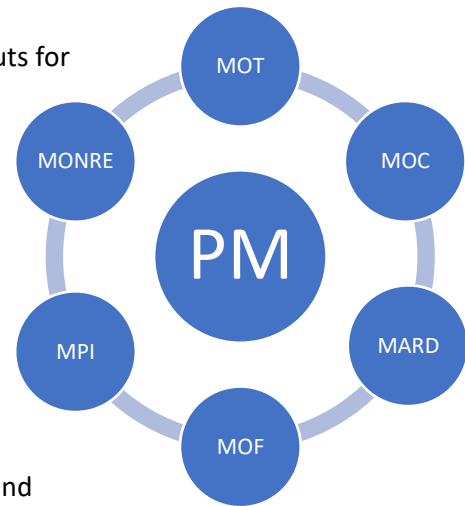
The mapping is organised according to three levels - national level, city level, and sub-city level.

A. National Level

Government

Vietnam's national government is not directly engaged in the research framework but they are longer term stakeholders. The National Assembly is able to integrate study findings into laws and national policies as well as advocate participation of relevant stakeholders. The government, under the Prime Minister (PM), can mobilize direct engagement from the Ministry of Transport (MOT), Ministry of Planning and Investment (MPI), Ministry of Finance (MOF), Ministry of Construction (MOC), Ministry of Natural Resources and Environment (MONRE) and Ministry of Agriculture and Rural Development (MARD). Therefore, the project may look to identify a sympathizer or champion from within the National Assembly or central government who can inform other ministries and stakeholders at that level.

The ministries are empowered by the Prime Minister to provide inputs for proposed laws. Ministries also have authority to issue circulars or decisions for defining decrees and articles of higher legal documents. Policy change, which is a longer-term aim of the research, needs engagement of key ministries. The Ministry of Transport (MOT) is a vital stakeholder to this research. They are responsible for drafting and proposing transport strategies, and annual and mid-term transport plans. The Transport and Development Strategy Institute (TDSI) is the government research institution under the Ministry of Transport. They are a key partner in this research, involved in identifying gaps and inefficiencies in current transport infrastructure investment and maintenance programmes, especially in relation to climate change and flooding, and identifying the range of alternative measures for minimizing flood impacts on road infrastructure.



MPI, MOC and MONRE are the three ministries with responsibilities most linked to the causes of exacerbated impacts of flooding of urban transport networks. MPI is responsible for allocation of government funds for transport infrastructure, and to ensure that transport planning is in line with socio-economic and environmental development plans. MOC is responsible for providing orientation for transportation planning, minimizing conflicts of interest between urban planning and infrastructure development, and harmonization of national and community construction plans. MONRE is responsible for issues related to hydro-meteorology and climate change. The Ministry of Finance (MOF) and Ministry of Agriculture and Rural Development (MARD) are responsible for financial and natural disaster issues respectively.

Operating under the auspices of MARD is the secretariat of the inter-ministerial Central Committee for Flood and Storm Control (CCFSC). CCFSC has national reach for coordination of disaster reduction initiatives, and operates through Provincial Committees for Flood and Storm Control.

At national level, the direct interest in investment options for reducing the impacts of floods on urban roads, relates to comparative financial costs from government budgets. Different investment options have different up-front financial costs, and lead to different financial savings in short and medium terms. For example, better investment in drainage leads to less flooded road surfaces and hence less future expenditure on road maintenance. National level stakeholders are also concerned with economic costs to the country as a whole, recognising that floods lead to significant economic losses which negatively impact national GDP.

Other National Level Stakeholders



Other national-level stakeholders are categorised in four groups as above.

Research institutes in Vietnam, both government and private, carry out research relating to flood, transport, hydro-meteorology, livelihoods and socio-economics. Four research institutes are the primary implementers of this research project in Vietnam. They are the Transport Development and Strategy Institute (TDSI), the Vietnam Academy of Science and Technology (VAST), the Vietnam Institute of Meteorology, Hydrology and Climate Change (IMHEN), and the Asian Management and Development Institute (AMDI). Other institutes involved in the research are the Applied Geophysics Centre (AGPC), and the Institute of Geophysics (IGP). TDSI is the primary research organisation under the Ministry of Transport. As such, TDSI can provide the project with access to relevant data from MOT, and will be able to inject the results of the project back into MOT's decision-making structures and processes.

National-level universities are not usually directly involved in flood control and management, but they are potential future stakeholders of this project, with capacity to develop their expertise in Operational Research methods to support planners and policy makers. The project will carry out relevant interviews with schools of the Vietnam National University which demonstrate an interest in developing their expertise in this field.

The most prominent international financing agencies which have supported or continue to support development of transportation, drainage and climate change/disaster risk reduction initiatives in Vietnam are the World Bank (WB), the French Development Agency (AFD), the Japan International Cooperation Agency (JICA) and the Asian Development Bank (ADB). Some of these agencies already have technical analysis relating to Hanoi's roads and drainage systems for investment decision-making, and have offices in Hanoi, and will be willing to share their technical expertise with this research project.

Media, especially the Vietnam Television Company, Vietnam Radio, and a range of newspapers, can also play a role in sharing information on flood forecasts, providing early warning to local businesses and communities, and disseminating advice and information on risk management.

B. City Level

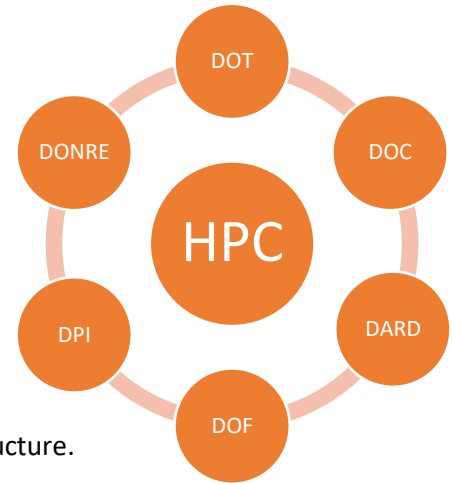
At city level, Hanoi People's Committee (HPC) manages the involvement of government stakeholders in planning and urban flooding issues. HPC directs, supports and monitors its departments and district PCs to implement their programmes effectively. HPC is responsible for the city's drainage system. In this research project, HPC will instruct the city's water drainage departments, transport and environmental management agencies to work with the research team, especially in the Work Packages which require survey and consultation with stakeholders. The Hanoi Department of Dyke Management and Flood Control (DDMFC), under the line management of the Central Committee for Flood and Storm Control (CCFSC), will also be mobilised by HPC to participate in the research process.

City level technical departments are line agencies of the national ministries, which are also directly managed by the HPC. The Department of Transport (DOT) develops drafts of decisions, plans and programmes on transport within Hanoi, and coordinates responsibilities and tasks among planners, investors and construction

agents. Hanoi DOT will provide the project with city-level data on transport flows, sector policies and flood damages caused to road infrastructure.

The Department of Planning and Investment (DPI) supervises city level formulation and implementation of plans corresponding to the city’s socio-economic development. Under DPI, the Hanoi Urban Planning Services will participate in this research, providing input on socio-economic development and damages from inundation and floods.

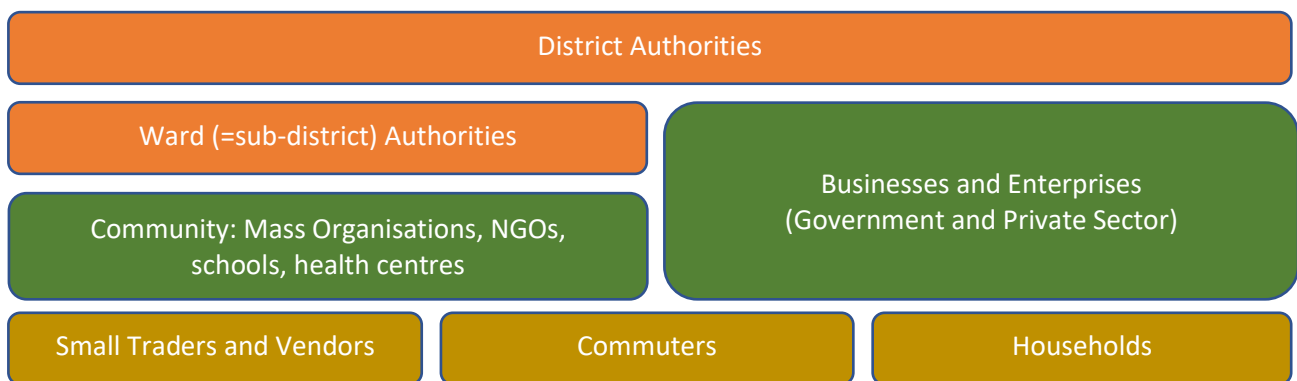
The Department of Construction (DOC) manages Hanoi’s Urban Development Programme, especially relevant for the urban districts which are covered by this research. DOC is responsible for the city’s drainage management and maintenance, and waste water treatment, including policies, plans, and indicators. DOC also has monitors transportation planning and the construction of urban transport infrastructure.



The Department of Natural Resources and Environment (DONRE) is responsible for management of natural resources and environment in Hanoi, including responding to, and adapting to climate change.

Therefore DPI, DOC and DONRE all need to be consulted by the project, to understand their perspectives on the impacts of flooding on Hanoi’s road infrastructure, and their ideas on how impacts can be cost-effectively reduced. Other Hanoi Departments – Department of Finance (DOF) and Department of Agriculture and Rural Development (DARD) – may also have interesting perspectives on financial and natural disaster issues relating to the project. In return for their participation, the research findings will be shared with these city-level agencies for use in city planning activities. As with national-level stakeholders, Hanoi City level stakeholders are concerned with comparative financial costs of different investment options, and are highly aware of local issues and concerns. They face local influences/pressures from public and private sector construction firms, sub-city authorities, and community representatives, which they need to consider carefully.

C. Sub-City Levels



- Women and Men, with differentiated impacts and needs -

The diagram above, illustrates the sub-city level stakeholders.

Government authorities, at District and Ward levels, normally follow instructions on plans and programmes from the city level, including implementation of public investment plans, upgrading roads, and management and dredging of drainage systems. Authorities at these levels are well aware of hidden costs of flooding, that

is, social costs and unreported costs. They also cooperate closely with other stakeholders at the sub-city level, including mass organisations and businesses/enterprises. They are familiar with the practicalities of responding to floods, and understand local stakeholder concerns.

Mass organisations, especially the Women’s Union and the Fatherland Front, and NGOs and community-based organisations, often support local vulnerable households to prepare for and respond to floods. The Fatherland Front campaigns for, and distributes financial support to vulnerable households. The WU holds local meetings with its members, who support each other through hardship. Schools and health centres are places where the impacts of urban flooding are strongly felt. They are also have unique opportunities to spread awareness and risk management messages to vulnerable groups – children, the elderly, and the infirm.

Businesses and enterprises can provide solutions and can be impacted by flooding of Hanoi’s transport systems. Local authorities rely on the Hanoi Sewage and Drainage Company to accelerate drainage of flood waters when they occur. Businesses along flooded streets, and businesses which rely on deliveries from nearby or from outside Hanoi, are impacted by loss of efficiencies, damaged capital, and loss of customers, with financial losses overall.

Hanoi has a strong ‘street culture’, and therefore small shops, traders and vendors are strongly affected by flooded roads. In addition to small roadside cafes, Hanoi culture is characterised by individual traders and vendors who often travel into the city in the early morning from nearby countryside areas to sell their wares on the streets. For these businesses and traders, floods can cause short term losses or can be devastating to their incomes. Those involved in transport work – motorcycle taxi drivers, taxi drivers, and bus drivers – are sometimes stranded in flood hotspot locations such as My Dinh, Cau Giay, Thanh Xuan and Hoang Mai.



Those using bicycles or motorcycles for work or transport to work are in danger from submerged potholes, fallen trees and damaged electricity wires. A waterlogged motorcycle engine can be expensive to repair. Valuable trading goods can be ruined or go unsold. The project will examine the costs of flooding to these stakeholders, and will explore the benefits of both structural and non-structural measures to mitigate adverse impacts.

Households in or nearby flooded areas are also strongly impacted by floods. Most of these households include commuters who need to travel through flood waters to get to work. Not being able to get to work, or getting to work late, impacts household economy. Flooding leads to temporary rising prices for fresh meat and vegetables coming from the countryside, again impacting household economy. Floods can lead to health problems, or children missing school, and parents needing to support children and elderly neighbours or relatives. Impacts are often different for women and for men, as women often need to address household impacts while men aim to continue to earn income outside the home. The research will survey households

in flood-prone areas to identify direct and indirect economic losses and adverse social impacts, disaggregating responses from women and men.

Finally, as with national level, local level media organisations are uniquely positioned to quickly inform about flood risks, and to disseminate risk management guidance/information. Many Hanoians follow local (Hanoi) news, and quickly adapt their plans and behaviour according to weather warnings.

Conclusion

The subject of this research is large, and there is a wide range of stakeholders, but the available resources for the research are relatively small. Therefore, the research team needs to optimize its own investment of time and effort to target the correct stakeholders at each stage of the research, obtain the most useful information, and use that information efficiently.

Stakeholder Analysis Matrix

A. NATIONAL LEVEL INSTITUTIONS

A1. National Government

Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<ul style="list-style-type: none"> Government has a key role to propose the elaboration of laws and ordinances of agencies and organizations to the National Assembly The official agency to issue Decrees and develop socio-economic policies Regulating tasks and responsibilities for ministries and ministerial-level agencies 	Baseline for policy makers to amend and promulgate policies	Adjustment of relevant policies and laws to minimize flood impact on road infrastructure	Not applicable in this research	Low	Low	Decrees on guiding the implementation of Laws

A2. Ministry of Transport

<ul style="list-style-type: none"> Draft and propose strategies, development planning, annual and mid-term public plans regarding transportation In charge of implementing development planning 	Baseline for policy makers to amend and propose adjusted policies	Pilot research, conducted at small scale, cannot integrate into national transportation infrastructure.	WP1, WP3. Consult to understand demands on transport infrastructure investment in the context of climate	Medium	Medium	Law on Transport National Strategy on Transportation to 2020
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<p>and plans on road, rail, inland waterway, marine and aviation infrastructures</p> <ul style="list-style-type: none"> Develop and manage a network of specialized meteorological observation stations in the transport domain. 		<p>WP5. Disseminate successful models to other urban areas</p>	<p>change, frequent floods & mitigation measures.</p> <p>WP5. Advocacy after successfully completing research. The model can be shared with MoT (thru International Relations Dept) to advocate for investment through ODA and lenders' projects.</p>			

A3. Ministry of Planning & Investment

<ul style="list-style-type: none"> Participate in submission of Laws, decrees, annual law development plans approved by ministries Submit five-year and annual socio-economic development strategies and plans to government; elaborate and amend mechanisms and policies for macro-economic management; develop investment strategy. 	<p>Baseline for policy makers to amend and propose adjusted policies: Law on Investment and Law on Public Investment and relevant documents</p>	<ul style="list-style-type: none"> Allocate governmental fund for transport infrastructure development Ensure transportation planning in line with socio-economic development planning 	<p>Pilot research and conducted at small scale, cannot advocate for policy changes</p>	<p>Low</p>	<p>Low</p>	<p>Law on Planning</p> <p>National Socio-Economics Development Plan</p>
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<ul style="list-style-type: none"> Synthesize development plans of ministries, branches, provinces and cities; master plan for regional and territorial development; support ministry planning. 		<ul style="list-style-type: none"> Deliver mechanism and incentives policy for transportation infrastructure if adjusted 				

A4. Ministry of Finance

<ul style="list-style-type: none"> In charge of managing national finance and budget Cooperate with MPI to develop financial estimates for development investment, allocation for construction investment 	Baseline for policy makers to amend and propose adjusted policies: Law on Governmental Budget	<ul style="list-style-type: none"> Allocate governmental fund for transport infrastructure development Deliver mechanism and incentives policy for transportation infrastructure if adjusted 	Pilot research and conducted at small scale, cannot advocate for policy changes	Low	Low	Law on State Budget
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A5. Ministry of Construction

<ul style="list-style-type: none"> Study and submit to the Government the strategic orientations and major measures for construction development, public works and construction materials; planning the 	Baseline for policy makers to amend and propose adjusted policies: Law on Construction,	<ul style="list-style-type: none"> Orient for transportation planning and ensure the planning to comply with national/ local 	Pilot research and conducted at small scale, cannot advocate for policy changes	Medium	Medium	Law on Construction
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<p>master plan on construction of grade 2 or higher urban centres, important industrial parks and concentrated economic zones.</p> <ul style="list-style-type: none"> • Take primary responsibility in considering and approving projects on planning design and technical designs of construction works according to government regulations 	Law on Urban Planning	<p>socio-economic development planning</p> <ul style="list-style-type: none"> • Ensure urban planning and infrastructure system not trigger conflict of interest between nation and community, targeting socio-economic development 	<p>There will be some policy recommendations related to road designs and urban planning, which are the mandates of the Ministry. Recommendations to be shared with the Ministry</p>			

A6. Ministry of Agriculture and Rural Development (MARD)

<ul style="list-style-type: none"> • Submit to the Government and the Prime Minister strategies, planning and plans for long-term, medium-term and annual development, projects and works of national importance in the branches and domains under their respective management. Direct, guide and inspect the implementation of 	Baseline for policy makers to amend and propose adjusted policies	<p>WP5. Collaborate with MOT and MONRE to integrate research findings into proposing feasible flood-control measures for urban areas</p>	<p>Optimization model and research recommendations can be shared with the National Floods and Storm Control Committee for replication in other cities in Vietnam</p>	Low	Low	Law on Disaster Prevention and Control
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
strategies, planning and plans on programs, projects, projects, policies and law on natural disaster prevention and control.						

A7. Ministry of Natural Resources & Environment (MONRE)

<ul style="list-style-type: none"> • Submit to the Government and the Prime Minister for approval, and organize the implementation of strategies, planning and plans for long-term, medium-term and annual development as well as programs, projects and works of national importance in the branches, the area managed by the Ministry. • To guide, inspect and organize the implementation of policies and law, strategies, planning, plans, programs, projects on hydro-meteorology 	Baseline for policy makers to amend and propose adjusted policies: Law on Land; Law on Environmental Protection	<ul style="list-style-type: none"> • In charge of climate change issues and more adverse natural extreme events • Collaborate with MARD, MOT and relevant stakeholders to develop multi-period optimisation model to minimize the impact of floods in different scenarios on urban road networks 	<ul style="list-style-type: none"> • WP1. Consult (IMHEN) to understand about more exacerbating context of climate change and its increasing adverse impacts posing urban areas • Model developed and policy recommendations to be shared with IMHEN for their projects, funded by international financing agencies for cities in Vietnam. 	Medium	Medium	<p>National Strategy on Disaster Prevention and Mitigation to 2020</p> <p>National Strategy on Climate Change</p>
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<p>after they are decided by competent authorities</p> <ul style="list-style-type: none"> Climate change issues: Guide, examine and organize implementation of policies, laws, strategies, planning, plans, programs, projects and projects on climate change after decision by the competent agencies. 						

A8. Research Institutes

TDSI		Main partner. Linking the project to the Ministry of Transport. Their own capacity assessment is also relevant.	Research Assistant involved full time for coordination with all WPs.	High	High	
IMHEN		Main partner. Flood maps generation. Capacity assessment of own institute.	Responsible for WP2. Inputs to WP1, WP3 and WP5.	High	High	
VAST		Main partner. Rainfall simulations	Responsible for WP2. Inputs to WP3 and WP5.	High	High	

Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
		Capacity assessment of some departments.	WP1 capacity assessment.			
AMDI		Main partner. Coordination services among Vietnamese partners	Primary responsible for WP1, WP3 . Also working on WP5 .	High	High	

A9. Universities

Vietnam National University in Hanoi – School of Business, and Mathematics Dept. National Polytechnic University University of Transport	Technical capacity to use Operational Research and Optimization models	Observers, and participation in capacity development	WP1 . Assess their capacity, and participation in capacity development workshops. WP5 . Inform and learn about project results using optimization model.	Potentially high, if they decide to take up methodologies	Low	
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A10. International Financing Agencies and NGOs

ADB JICA AFD World Bank	Cost-effective Investment	Technical information on past investment strategies and cost-benefit analysis in Hanoi road and drainage systems	WP3 . Assessment of mitigation measures, and possible inclusion in WP1 capacity assessment, to stimulate their	Possibly high, depending on the success of the project. These are big investors.	Low	
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
			interest in the optimization model.			
NGOs, plus the national DRR and CC Working Groups		Sharing information thru NGO networking mechanisms in Hanoi. Impacts and measures supported by NGOs can be shared. Their capacity will be assessed.	Results of the impact assessments can be shared to the NGO network to influence projects/ programme application for other cities in Vietnam.	Low		

A11. Media Organisations (National Television and Newspapers)

To disseminate information in the public interest	Solutions which demonstrate effectiveness	Dissemination of final outcomes, involvement in final project workshop.	Invitation to final workshop, provision of information pack	Low-Medium. The project can increase awareness their own role in flood risk management	Potentially high impact on further development/ upscaling.	
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B. CITY LEVEL INSTITUTIONS

B1. Hanoi People's Committee

• Follow up and monitor departments and district PCs in implementing	Baseline for Hanoi's authorities to	WP1. Direct relevant departments to	• WP1. Consult and ask for research	High	High	Regulations on drainage management
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<p>programs, plans to ensure time manner and quality</p> <ul style="list-style-type: none"> Collaborate with relevant departments, sectors and grassroots levels to prepare and accomplish programs, projects, legal document drafts Develop list of tasks, planning programs for city, urban areas <p>Owner of city's drainage work</p>	<p>integrate into future infrastructure investment plans and inform policy making implementation, propose appropriate measures for drainage system improvement</p>	<p>support research team in finding an optimal investment strategy to minimise flood impact on road infrastructure in Vietnam, particularly in survey and consultation activities at relevant stakeholders</p>	<p>implementation permission</p> <ul style="list-style-type: none"> WP1. Capacity Assessment for interest and to establish relationship WP1. Direct Hanoi Floods and Storms Control Committees and other relevant bodies to support project team to conduct the research. WP5. Advocacy after successfully completing research 			<p>and water treatment for Hanoi city</p> <p>Regulations on developing urban planning for Hanoi</p> <p>Socio-economic development plan of Hanoi</p>

B2. Hanoi Department of Transport

<ul style="list-style-type: none"> Develop draft of decisions, planning, five-year and annual plans, programmes on Hanoi transport Organize the performance of tasks and powers of the 	<p>Research findings will be used as a baseline for Hanoi's DOT to integrate into future</p>	<ul style="list-style-type: none"> Provide inputs for the final research results regarding transportation sector Provide public materials and data on 	<ul style="list-style-type: none"> WP1. Consult and ask supporting information and data WP3. Consult to understand demands on transport 	High	High	<p>Decision on urban transportation for Hanoi to 2030</p>
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
investment-deciding agencies and investors for investment projects on the construction of traffic infrastructure according to the decentralization of the municipal People's Committee	infrastructure investment plans	transportation and damages caused to road infrastructure in Hanoi city <ul style="list-style-type: none"> • WP1. Direct Hanoi Transport and Public Works to participate and support research team 	infrastructure investment in the context of climate change and more frequent flooding <ul style="list-style-type: none"> • WP1. Capacity Assessment • WP5. Advocacy after successfully completing research 			

B3. Hanoi Department of Planning & Investment

<ul style="list-style-type: none"> • To guide and supervise the provincial departments, committees, branches and district-level People's Committees in formulating and implementing planning and plans in line with approved planning, plans, programs and projects, the socio-economic development of the city • Coordinate with the Department of Finance to develop budget 	Research findings will be integrated into the future urban planning and infrastructure investment plans of the city	<ul style="list-style-type: none"> • Provide inputs for the final research results regarding planning and investment sector • Provide public materials and data on socio-economic development and damages caused to urban areas of Hanoi city • Direct Hanoi Urban Planning Services to 	<ul style="list-style-type: none"> • Not applicable in this research 	Medium	Medium	
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
estimates and allocate funds to agencies, organizations and units of the city.		participate in the research				

B4. Hanoi Department of Finance

Manage city budget allocation in levels	The project will inform the Dept, for better calculation of future infrastructure investment plans.	Provide statistics on public budget line and private capital on transport infrastructure investment in Hanoi	Not applicable in this research	Low	Low	
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B5. Hanoi Department of Construction

<ul style="list-style-type: none"> Organize and manage Urban Development Program for the whole city and for sub-city urban areas, ensuring this program in line with standards of national/ regional urban planning and socio-economic development plans Lead activities of drainage management 	Research findings will be integrated into the future urban planning and transportation infrastructure plans of the city	<ul style="list-style-type: none"> Participate and provide inputs for the final research results regarding drainage improvement, construction, urban planning and urban transportation planning sector Provide statistics on public budget line and private capital 	<ul style="list-style-type: none"> WP1. Consult to understand necessity and feasibility to improve transport infrastructure investment in a worsen context of climate change and more frequent disaster-stricken WP1. Consult and ask supporting 	High	High	
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<p>and maintenance of the city</p> <ul style="list-style-type: none"> • Develop plans, indicators and policies on management of drainage system, waste water treatment of the city • Facilitate activities on investment, mobilization, exploitation of water supply and water drainage of the city • Develop, evaluate urban transportation planning to submit Hanoi's PC for approval; monitor the construction of urban transportation infrastructure and urban transportation planning 		<p>on transport infrastructure investment in Hanoi city</p>	<p>information and data</p> <ul style="list-style-type: none"> • WP1. Included in capacity assessment • WP5. Advocacy after successfully completing research 			

B6. Hanoi Department of Agriculture & Rural Development (DARD)

<ul style="list-style-type: none"> • Draft decisions, directives and planning on natural disaster prevention and mitigation in line with the master plan for 	<p>Research findings will be integrated into the future urban planning and transportation</p>	<ul style="list-style-type: none"> • Provide inputs for the final research results regarding flood prevention and control 	<ul style="list-style-type: none"> • WP1: Flood and Storm Control Committee included in capacity assessment, also to 	<p>Medium</p>	<p>Medium</p>	
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<p>socio-economic development</p> <ul style="list-style-type: none"> • Play present role in the Steering Committee for Flood and Storm Prevention and Control, Search and Rescue activities • Participate in recovery activities from consequences of natural disasters (storms, floods, landslides, droughts, floods, etc) in Hanoi 	<p>infrastructure plans of the city</p>	<p>Provide information about natural disasters particularly storms and floods information, adverse impacts of these hazards hitting Hanoi city</p>	<p>stimulate their further interests and to collect information re flood mitigation measures</p> <ul style="list-style-type: none"> • Not applicable in this research 			

B7. Hanoi Department of Natural Resources & Environment (DONRE)

<ul style="list-style-type: none"> • Consult with Hanoi's PC in natural resources and environment management including: land, water, environment, hydrology, climate change, mapping; • Draft decisions, five-year and annual planning and plan related to natural resources and environment 	<p>Research findings will be integrated into the future urban planning and climate change response plans and planning of the city</p>	<ul style="list-style-type: none"> • Provide inputs for the final research results regarding climate change situation <p>Provide information about climate change and natural extreme events recently, adverse impacts of these hazards hitting Hanoi</p>	<ul style="list-style-type: none"> • WP1. Consult to understand the situation of climate change, natural disasters and its impacts on socio-economic development and transport infrastructure investment • WP1. Consult and ask supporting information and 	<p>Medium</p>	<p>Medium</p>	
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<ul style="list-style-type: none"> • Participate in developing natural disaster response measures • Monitor hydro-meteorology contents in planning, infrastructure designs • Monitor climate change response activities of Hanoi; propose measures to mitigate climate change impacts 			<p>data in climate change, hydro-meteorology and flood</p> <ul style="list-style-type: none"> • WP1. Participation in the capacity assessment • WP5. Advocacy after successfully completing research 			

C. SUB-CITY LEVELS

C1. District Authorities

<ul style="list-style-type: none"> • Assign list of tasks and programs on planning in urban development regions under management scope of the district; participate in monitoring; submit these tasks and programs to city level for approval • Organize and manage drainage system in assigned works 	<p>Research findings will be integrated into the future urban planning and climate change response plans and used as a baseline to propose factual appropriate measures for flood impacts</p>	<ul style="list-style-type: none"> • Provide inputs for the final research results regarding current severe flooding region of the district • Propose factual structural and non-structural measures to deal with flooding for the hot-spot of the city 	<ul style="list-style-type: none"> • WP3. Consult to understand the situation of natural disasters, floods and its impacts on socio-economic development and transport infrastructure investment • WP3. Consult and ask supporting information and 	High	High	
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<ul style="list-style-type: none"> • In charge of implementing plans on investment, upgrading, maintenance, dredging drainage system • Approve socio-economic development plan and budget allocation for district level before sending to city level for approval • Direct relevant departments to manage urban planning, drainage and environmental issues under assigned tasks 	mitigation on district regions		<p>data in floods and natural disasters imposing the district</p> <ul style="list-style-type: none"> • WP1. Capacity assessment WP5. Advocacy after successfully completing research 			

C2. Ward Authorities

<ul style="list-style-type: none"> • Develop annual socio-economic development program and budget estimates of the ward • Manage and regulate effective usage of public works, transportation infrastructure under ward assignment 	Research findings will be integrated into the future socio-economic plans and used as a recommendation to propose factual measures for flood impacts	<ul style="list-style-type: none"> • Provide inputs for the final research results regarding current severe flooding region of the ward • Propose factual structural and non-structural measures to deal with flooding for the 	<ul style="list-style-type: none"> • WP1. Consult to understand the situation of natural disasters, floods and its impacts on socio-economic development and transport infrastructure investment 	High	High	
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<ul style="list-style-type: none"> Cooperate with other stakeholders and implement flooding prevention measures under assignments of higher authorities 	mitigation on ward sites	<ul style="list-style-type: none"> hot-spot of the ward/ district Mobilize participation of several households in assessing flood impacts surveys 	<ul style="list-style-type: none"> WP1. Involvement in Capacity Assessment WP3. Consult and ask supporting information and data in floods and natural disasters imposing the ward WP3. Support in residential mobilization for interviews 			

C3. Businesses and Enterprises

<ul style="list-style-type: none"> Relevant private agencies: Hanoi Drainage Company, 	Research findings will be integrated into the future socio-economic plans and used as a recommendation to propose factual measures for flood impacts mitigation on ward sites	Collaborate with private companies and agencies, relevant NGOS working in climate change impacts on urban areas generally and road infrastructure investment particularly	<ul style="list-style-type: none"> WP3. Interview small/ medium relevant private agencies (Hanoi Drainage Company) about flood situation of Hanoi WP3. Ask for some measures to mitigate flooding impacts on transportation infrastructure investment 	Medium	High	
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
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C4. Mass Organisations and NGOs

Women's Union, Ward level	Impact of floods on families, from women's point of view		WP3. Meetings at Ward level together with Ward authorities			
Fatherland Front, Ward level	Coordination among mass orgs and communities		WP3. Meetings at Ward level together with Ward authorities			
NGOs either working at Ward level, or those working in urban DRR elsewhere in Vietnam	Impact of floods on the most vulnerable		WP3 and WP5. Especially through the NGO Disaster Management Working Group			

C5. Schools and Health Centres

Provision of care, and education	People/children/communities are informed, and can reach and access their services	Provide information on vulnerabilities, local adaptation and mitigation measures, warning systems	WP3. Socio-economic survey in hotspot areas.	Low direct impact, but potentially higher in the longer term.	Low to medium	
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C6. Small Traders and Vendors

• Undertake small business	Target beneficiaries	• Provide information on difficulties and	WP3. Interview small/ medium business households	High	High	
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Relevant mission and Responsibility	What is important to the stakeholder?	How could the stakeholder contribute to the project?	Strategy for engaging the stakeholder	Impact of the project on them (Low, Medium, High)	Their Influence on the project? (Low, Medium, High)	Relevant Legal Documents
<ul style="list-style-type: none"> Street vendors work outside without any protection 		losses/ adverse impacts when floods strike Raise their voices for demands on improved transportation infrastructure less impacted by floods	in selected hotspots severely suffering from floods; interview street vendors during storm and flood season			

C7. Commuters

<ul style="list-style-type: none"> Travel across the city Experience commuting in flood season 	Target beneficiaries	Raise their voices for demands on improved transportation infrastructure less impacted by floods	WP3. Interview motor taxi drivers, taxi drivers, bus drivers, travellers around research hotspots	High	High	
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C8. Households

<ul style="list-style-type: none"> Maintain the health, education, capital, and income of their families 	Minimizing short term and longer-term losses	In surveys, provide information on vulnerability and losses, and on household coping and resilience strategies	WP3. Socio-economic survey in hotspot area	Indirect, medium. (The project aims to optimize investment strategies, not maximize resilience.)	High. Their experiences and opinions are essential to determine cost-effectiveness of intervention measures.	
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