

# LANDFILL SITING IN VIETNAM: A FOCUS ON REGULATORY AND INSTITUTIONAL ISSUES

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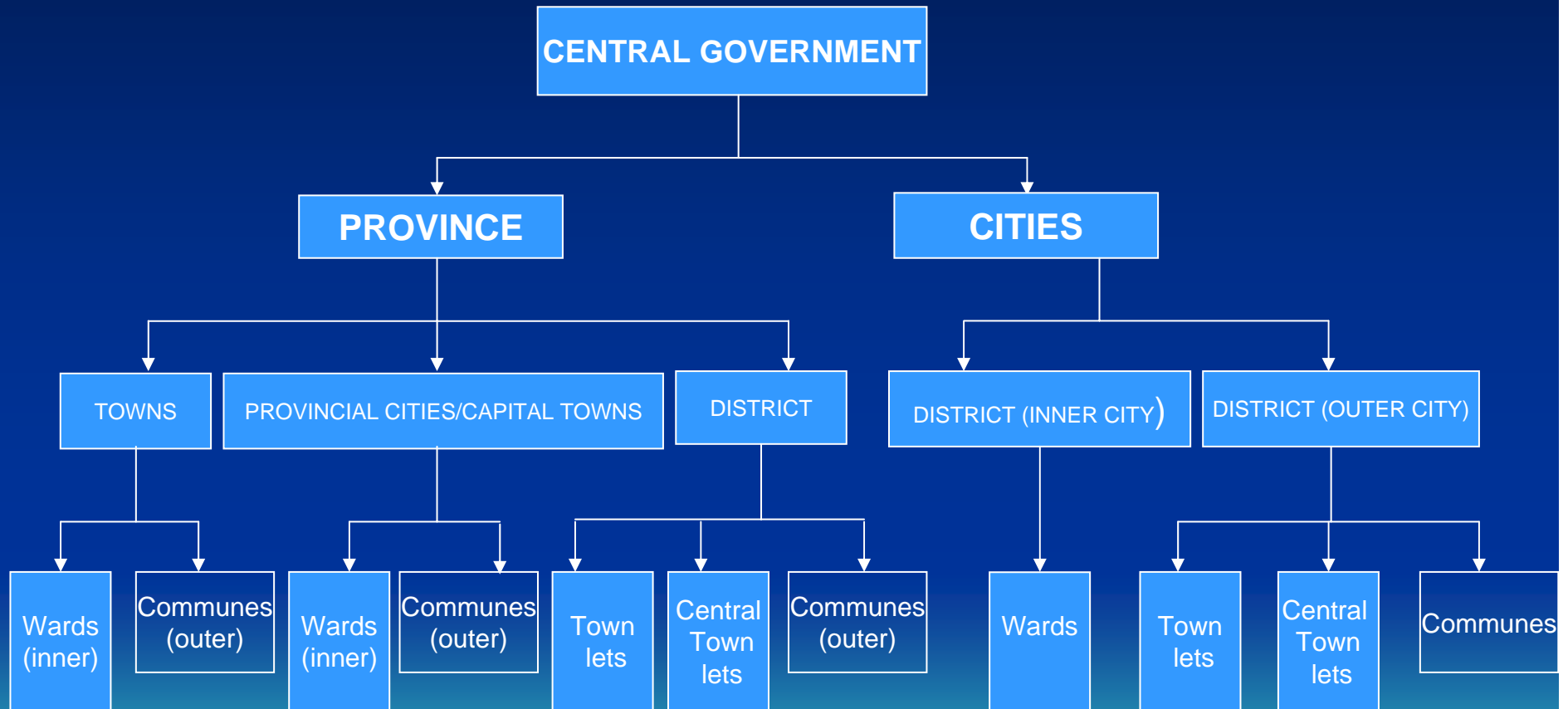
# Aim of Paper

*propose a set of practical recommendations for removing barriers to effective landfill siting process as well as to provide insights into landfill siting in Vietnam with respect to regulatory and institutional issues*



# Overview of Vietnam

## *Aministrative Structure*



# Overview of Vietnam

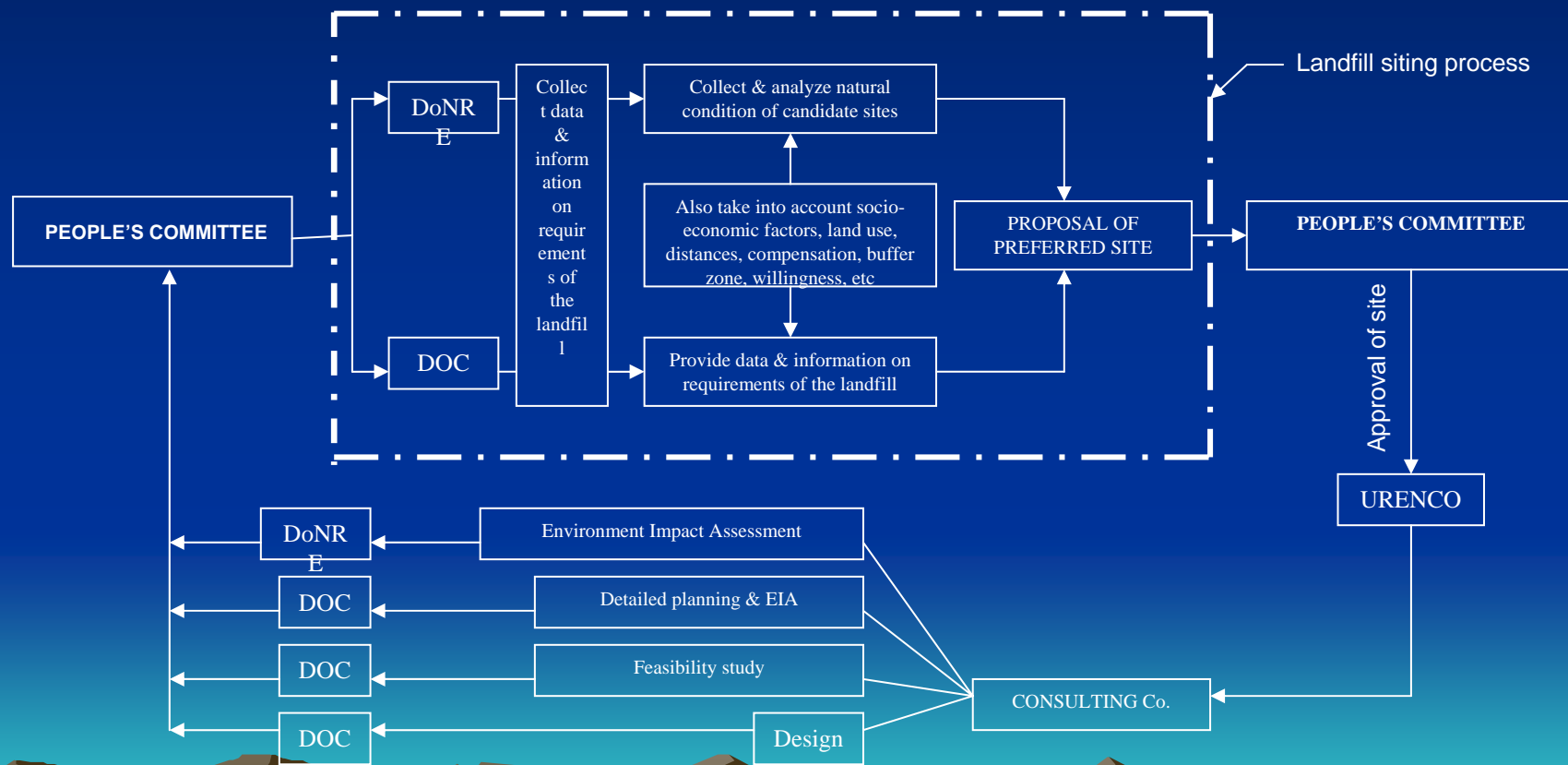
## *Landfill Siting*

- Landfilling is the cheapest and most prevalent solution for SWM in Vietnam (more than 700 urban areas, 17/91 landfills are sanitary, hundreds open dumps)
- Barriers standing in the way are more often institutional than technical in nature
- Regulations are not effectively enforced in practice
- Lack of an effective institutional framework for landfill siting: legal texts, organizational structure, responsibility distribution, procedure
- Tendency that the legislation for MSWM only specifies the municipal obligation of removing waste to satisfy general public hygiene standards rather than dealing with SWM in all of its environmental aspects



# Landfill Siting Process

## CURRENT PROCEDURE OF LANDFILL PROJECT EXECUTION

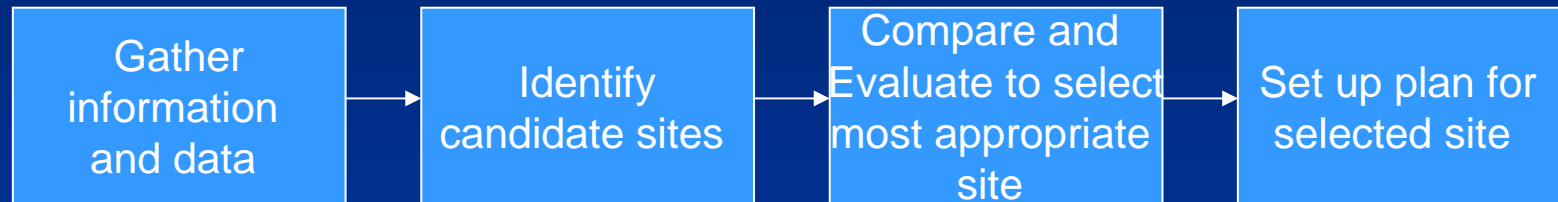


NOTE:  
 DoNRE: Department of Natural Resources and Environment  
 DOC: Department of Construction  
 URENCO: Urban Environment Company

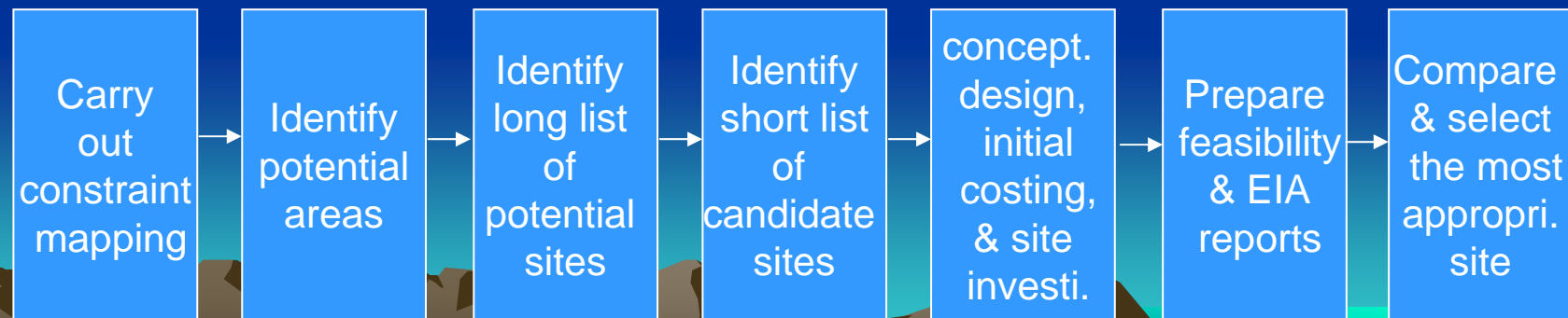


# Landfill Siting Process

## ❖ *Landfill Siting Process in Vietnam :*

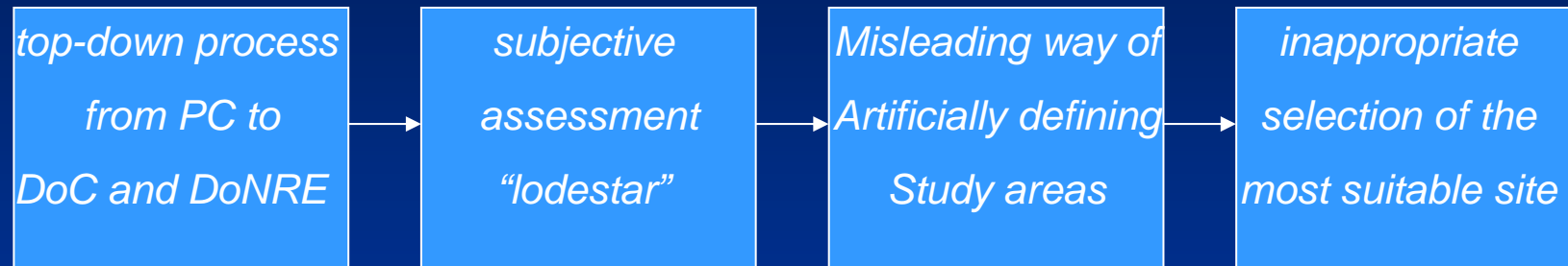


## ❖ *The landfill siting process introduced by Rushbrook and Pugh (1999) for middle and lower income countries:*



# Landfill Siting Process

## ❖ *Problems*



Does not have the step *identifying potential areas*, likely to result in an oversight of one or more good locations that should also be considered as candidate sites

DoNRE and DoC often do not have experts in the domains of geology and hydrology. Therefore, it is impossible for them alone to effectively carry out landfill siting processes.



# Landfill Siting Process

## ❖ *Problems*

Descriptions and analyses used to choose the landfill location in siting studies are ***quite short, ambiguous and qualitative***

Criteria used for assessment are simple: distance to nearest residential area, sites with low-productivity land, transport distance, minimize using agricultural land. ***Environmental and social criteria are not properly taken into account.***

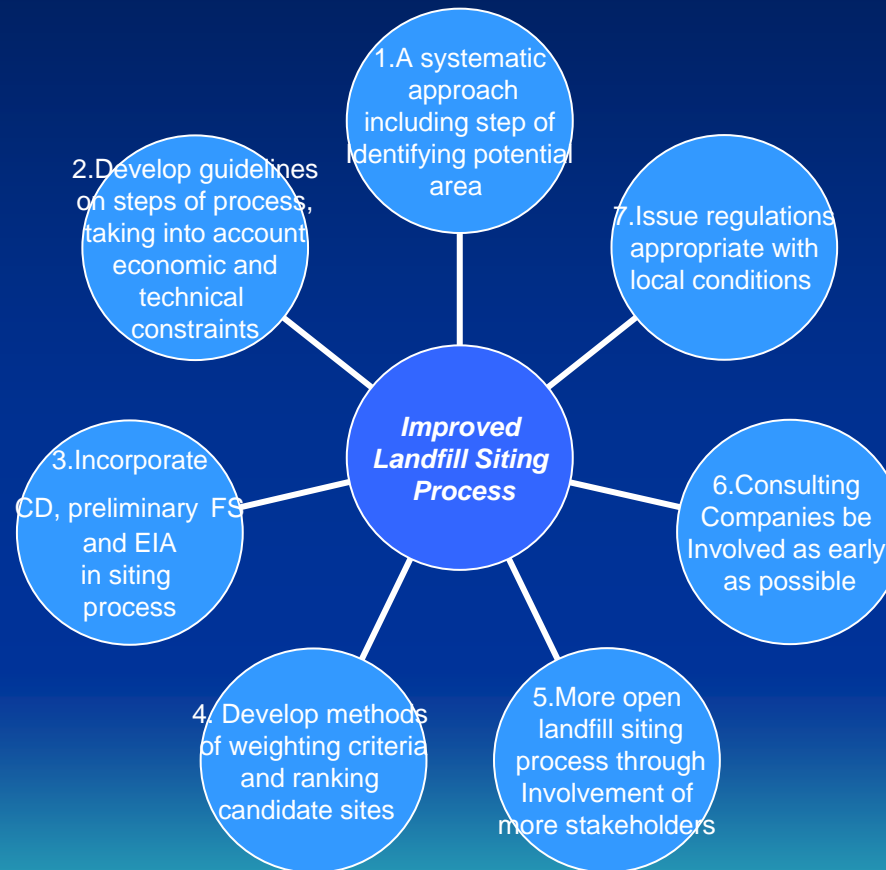
Conceptual design (CD) , feasibility study (FS), and EIA are carried out late, after the site has already been selected. Therefore, ***construction costs and environmental impacts are not fully taken into consideration as criteria for selecting the site***

CD, FS and EIA calls for financial and technical resources. Therefore these studies, as part of siting process, should be conducted at preliminary level only. More detailed studies should be left for later phases.



# Landfill Siting Process

## ❖ Recommendations



Note

CD: conceptual design

FS: feasibility study

EIA: Environmental impact assessment

# Responsibilities, Coordination, and Information Sharing

## ❖ *Current practices*

### RESPONSIBILITIES OF MONRE AND MOC ON LANDFILL ISSUES

MONRE's responsibilities	MOC's responsibilities
<ul style="list-style-type: none"><li>-Issue guidelines, regulations, and standards on waste management issues</li><li>-Draft annual and long-term waste management plans, supervising waste management activities</li><li>-Inspect the operation of waste treatment facilities and supervise waste management activities</li><li>-Appraise and approve EIAs for waste treatment projects</li><li>- Plan and allocate budgets for research and development relating to waste treatment projects</li></ul>	<ul style="list-style-type: none"><li>-Issue procedures, norms, guidelines, guiding documents, and technical design standards for waste collection, transport, and treatment systems</li><li>-Draft national strategies for solid waste management in the country</li><li>-Direct and supervise urban management including waste collection, transport, treatment, and landfilling</li><li>-Issue guiding documents, and draw up plans for the arrangements of landfill sites in urban areas and industrial zones</li><li>- Direct provincial and municipal DOCs in drawing up planning and plans for construction of landfills</li></ul>

Distribution of responsibility and jurisdiction between the two is not clearly defined



# Responsibilities, Coordination, and Information Sharing

## ❖ *Current practices*

### LOCAL AGENCIES & TYPES OF DATA AVAILABLE

Agency	Data
Department of Construction (DoC) – Division of Urban and Rural Planning	Land use plans Urban development plans
Department of Natural Resources and Environment (DoNRE)	Environmental status – environmental parameters: air, water, and ground quality
Urban Environment Company (URENCO)	Waste generation and composition
Department of Agriculture and Rural Development (DARD)	Well locations (greater than 15m deep) Future water resources plans Hydrogeological surveys Topographic maps
Hydrometeorological Service Centre (HMSC)	Meteorological data – rainfall, temperature, wind, air and rain water quality Record of past major storm events Data from river monitoring stations – flow rates, temperature
Department of Geology and Minerals (DGM) - Division of Geological and Mineral Resources Survey	Geological data – soil and rock type, location of faults and fractures Groundwater data

DARD, HMSC & DGM are not involved in landfill siting process



# Responsibilities, Coordination, and Information Sharing

## ❖ *Problems*

- Overlapping responsibilities
- Lack of coordination and cooperation
- Information Sharing is limited
- Lack of involvement of a number of relevant agencies



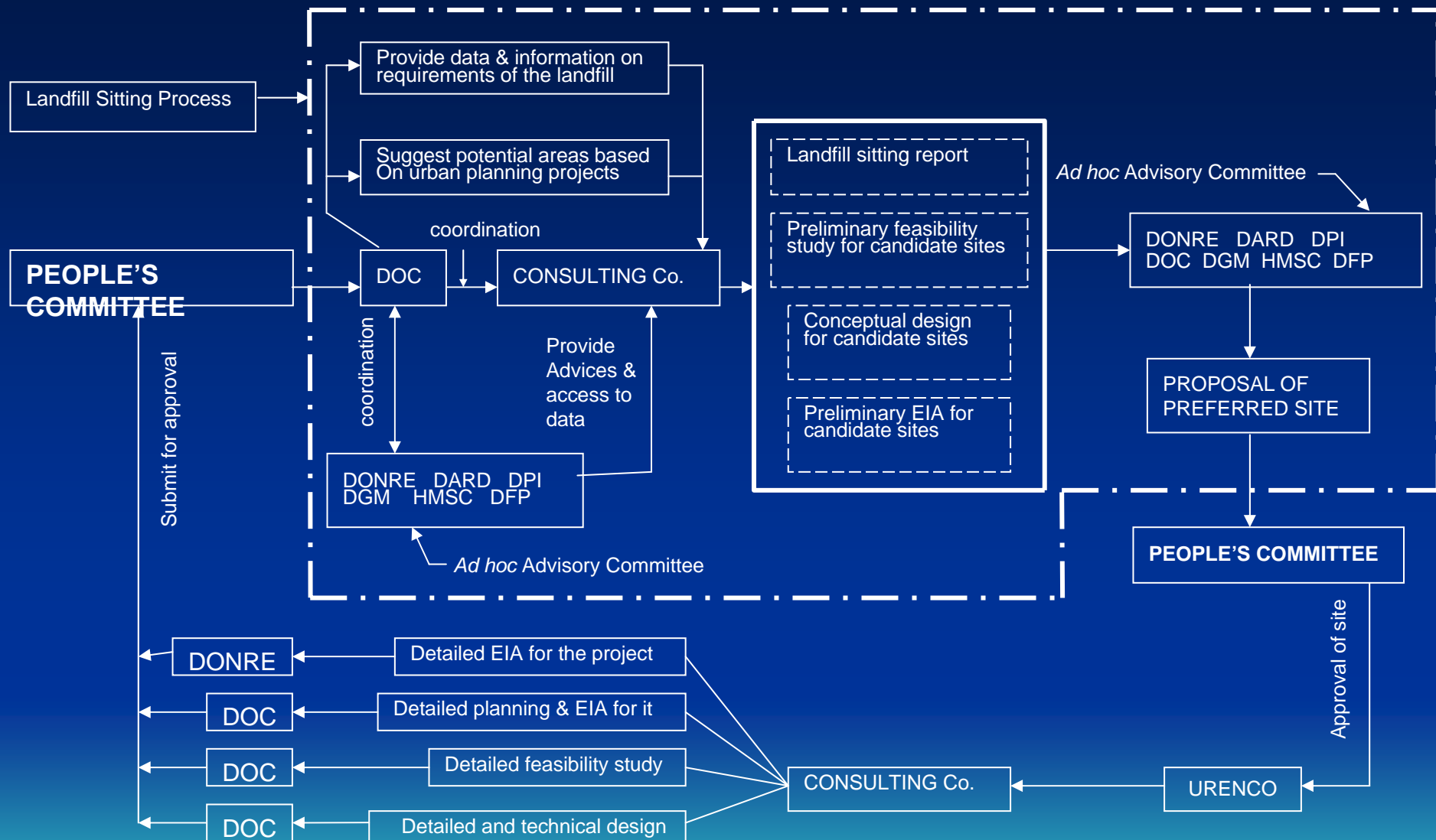
# Responsibilities, Coordination, and Information Sharing

## ❖ *Recommendations*

- *Role of relevant agencies should be well defined.* Distribution of responsibilities and jurisdictions among them should be clearly mandated and overlaps should be avoided
- **Ad hoc advisory committees** for landfill siting projects should be adopted whose members include the representative of those necessary but not yet involved in the process



# PROPOSED INSTITUTIONAL FRAMEWORK



## NOTES:

DONRE: Department of Natural Resources and Environment  
 DOC: Department of Construction  
 URENCO: Urban Environment Company  
 DGM: Department of Geology and Minerals

DARD: Department of Agriculture and Rural Development  
 DPI: Department of Planning and Investment  
 DFP: Department of Finance and Pricing  
 HMSC: Hydrological and Metrological Service Center

# Conclusions

1. Properly selecting landfill locations is a challenging task in developing countries. In Vietnam, besides limited financial, technical, and human resources, inadequate organizational structures with overlapping responsibilities, inadequate coordination, top-down approaches, are some of the barriers that hinder effective and efficient landfill siting
2. The most important prerequisite for removing current obstacles is that decision-makers at government agencies relevant to landfill siting at all levels need to be willing to make modification to existing institutional structures. Substantial resistance or perception that the barriers are insurmountable should be removed
3. An order of implementation for all of the changes needs to be established. Higher priority should be given to those more urgent in the short term or easier to implement. Those calling for large resources or having anticipative significant difficulties in administration that can often be achieved only in the long term may be implemented later on.





***THANK YOU FOR YOUR ATTENTION***

