

Introduction to the Trans-sectoral Scenario Workshop Nyarugenge District, Kigali

Prof. Undine Giseke, TU Berlin
25th October 2018

RAPID PLANNING



**SUSTAINABLE INFRASTRUCTURE, ENVIRONMENTAL
AND RESOURCE MANAGEMENT FOR
HIGHLY DYNAMIC METROPOLISES**



TU Berlin
Department of Landscape Architecture
& Open Space Planning
Prof. Undine Giseke

Welcome to the first Rapid Planning Scenario Workshop

today!

workshop 1



definition of preliminary
trans-sectoral scenario
options



scenario
development,
refinement and
simulation

2019

workshop 2



presentation,
discussion and
evaluation of
simulation results

The Rapid Planning Approach

- collecting data
(desktop studies and
field research)
- analyzing data
- gaining knowledge
through entry project
activities
- developing the Rapid
Planning simulator
- **testing the method
through scenarios**

Developing trans-sectoral models of urban metabolism

- linkages between sectoral infrastructures
and urban development
- material and energy flows with reference
to spatial entities



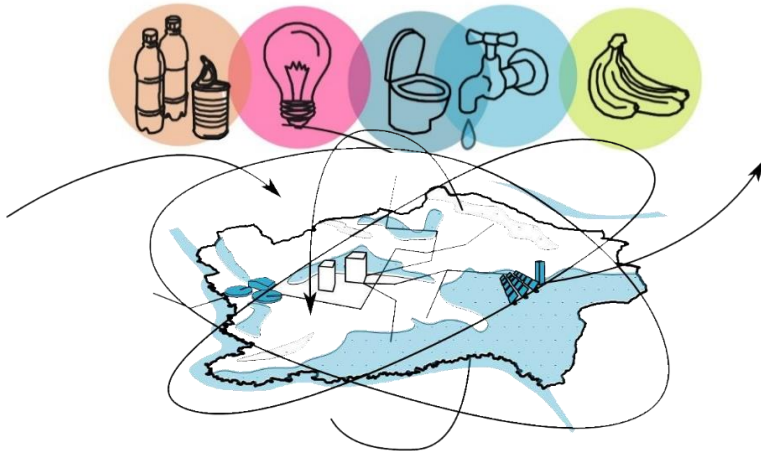
The Rapid Planning Scenarios

General goals

to reveal and exploit potential synergies
between sectoral infrastructures and urban
development

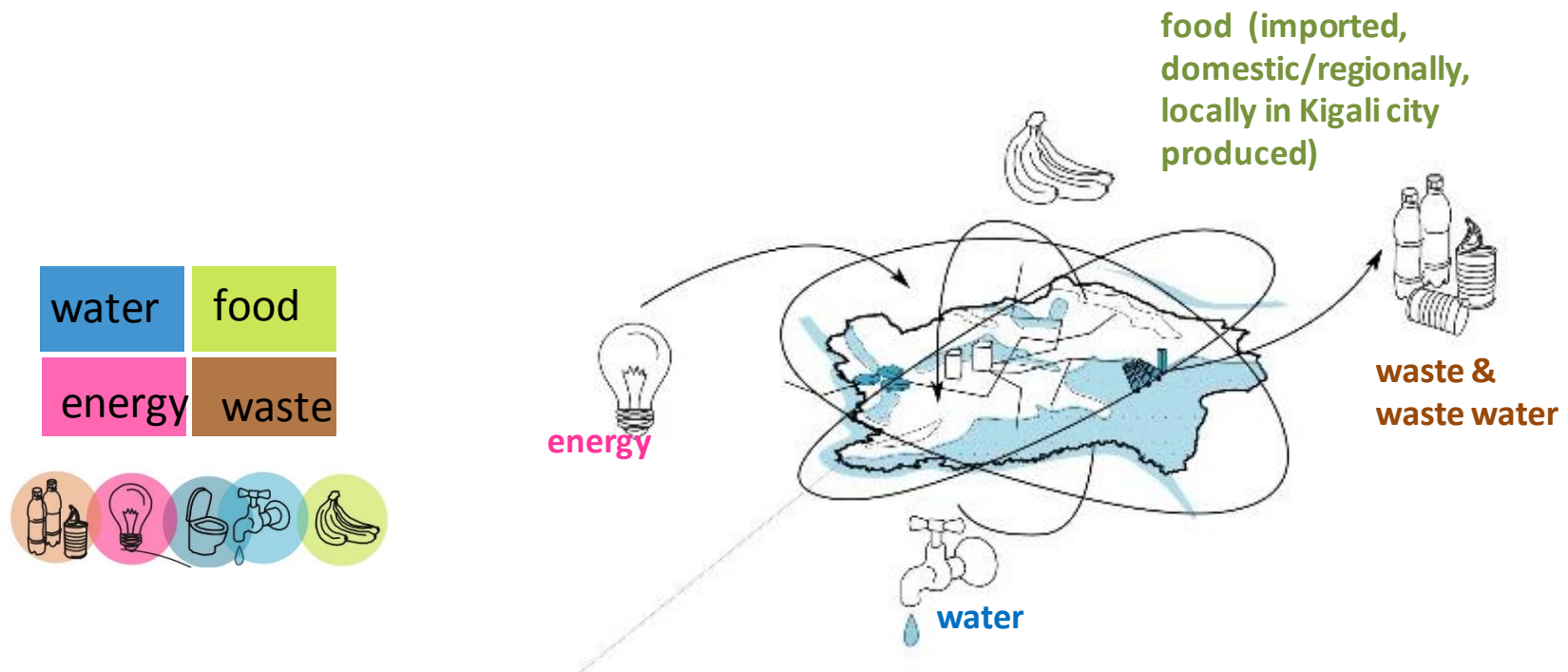
to investigate possible future developments
and to quantify their impacts on the
state/functionality of supply and disposal
infrastructures

to investigate the effects and potentials of
trans-sectoral planning



Key questions for the scenario development

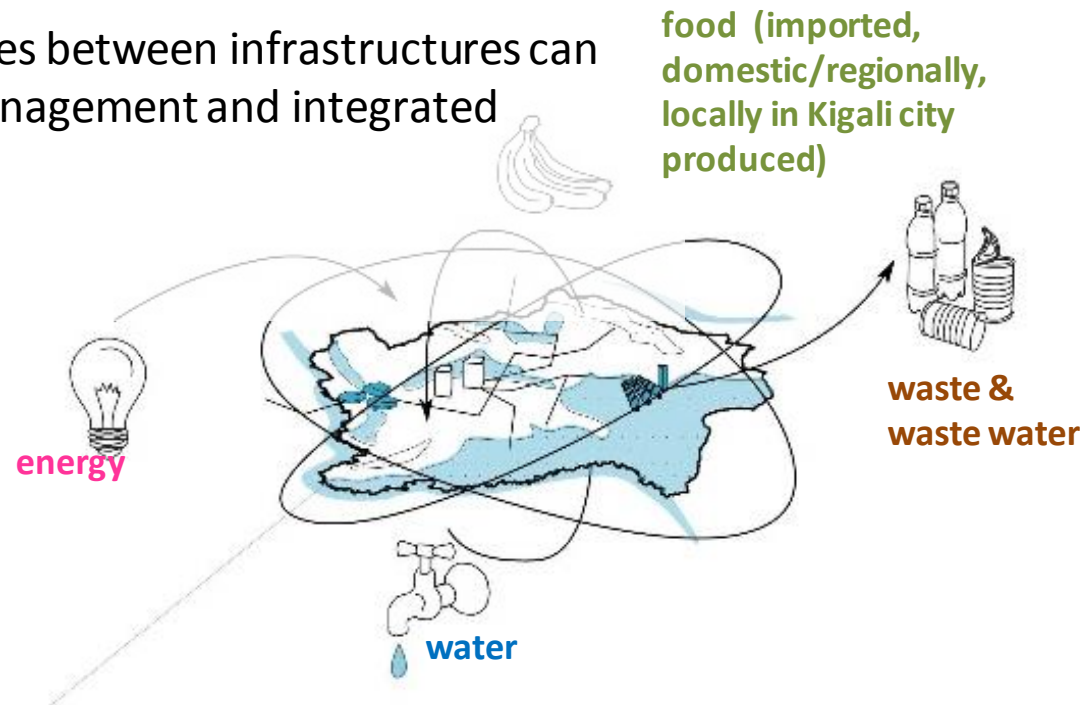
- how to supply Kigali's future population with energy, water and fresh food?
- how to make use of solid waste and waste water?
- how to keep impacts on the environment low?



Key questions for the scenario development

- how to supply Kigali's future population with energy, water and fresh food?
- how to make use of solid waste and waste water?
- how to keep impacts on the environment low?

hypothesis: exploiting synergies between infrastructures can lead to improved resource management and integrated development



Three components of the scenario development process

_1 Status quo

based on current state

_2 Reference scenario “Kigali Masterplan”

based on expectations, goals and parameters of existing masterplans and strategic sectoral plans

_3 Trans-sectoral scenario(s)

based on same general parameters but may deviate in some cases
in addition, considering sectoral interlinkages and trans-sectoral synergies
developing “sub-scenarios” for context-specific cases

vision approach



anticipating possible transsectoral and integrated futures



Scenario development framework

perspective

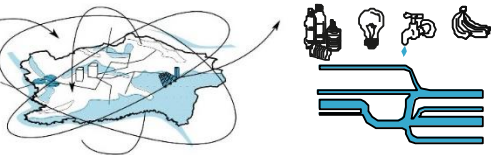
key parameters

meta scale



- demographics
- technological trends
- urbanisation rate
- GDP development

metabolic/
systemic



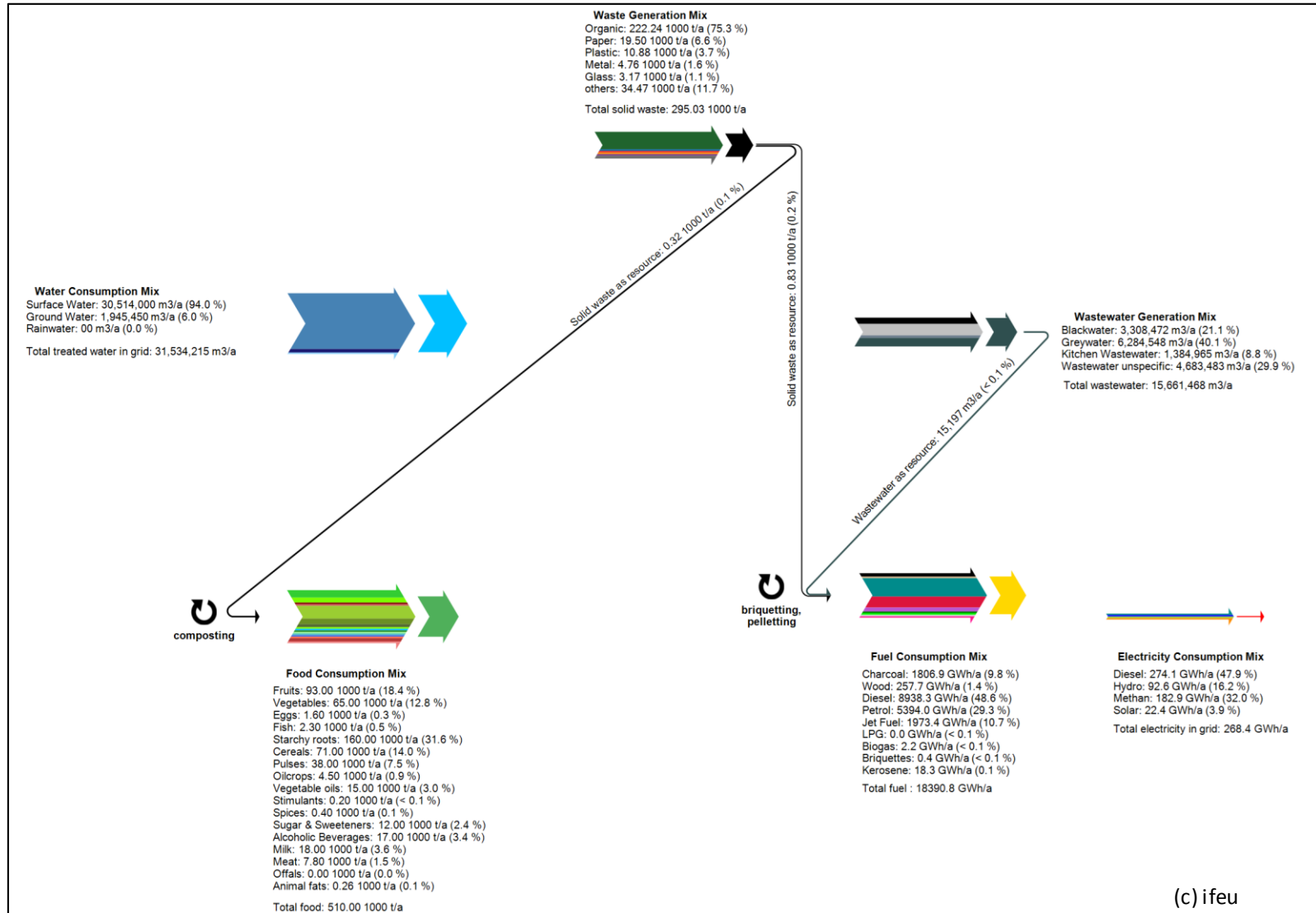
- material flows
 - technical + socio-economic processes
 - interaction between natural and human environment
- *requiring aggregation + assumptions*

spatial

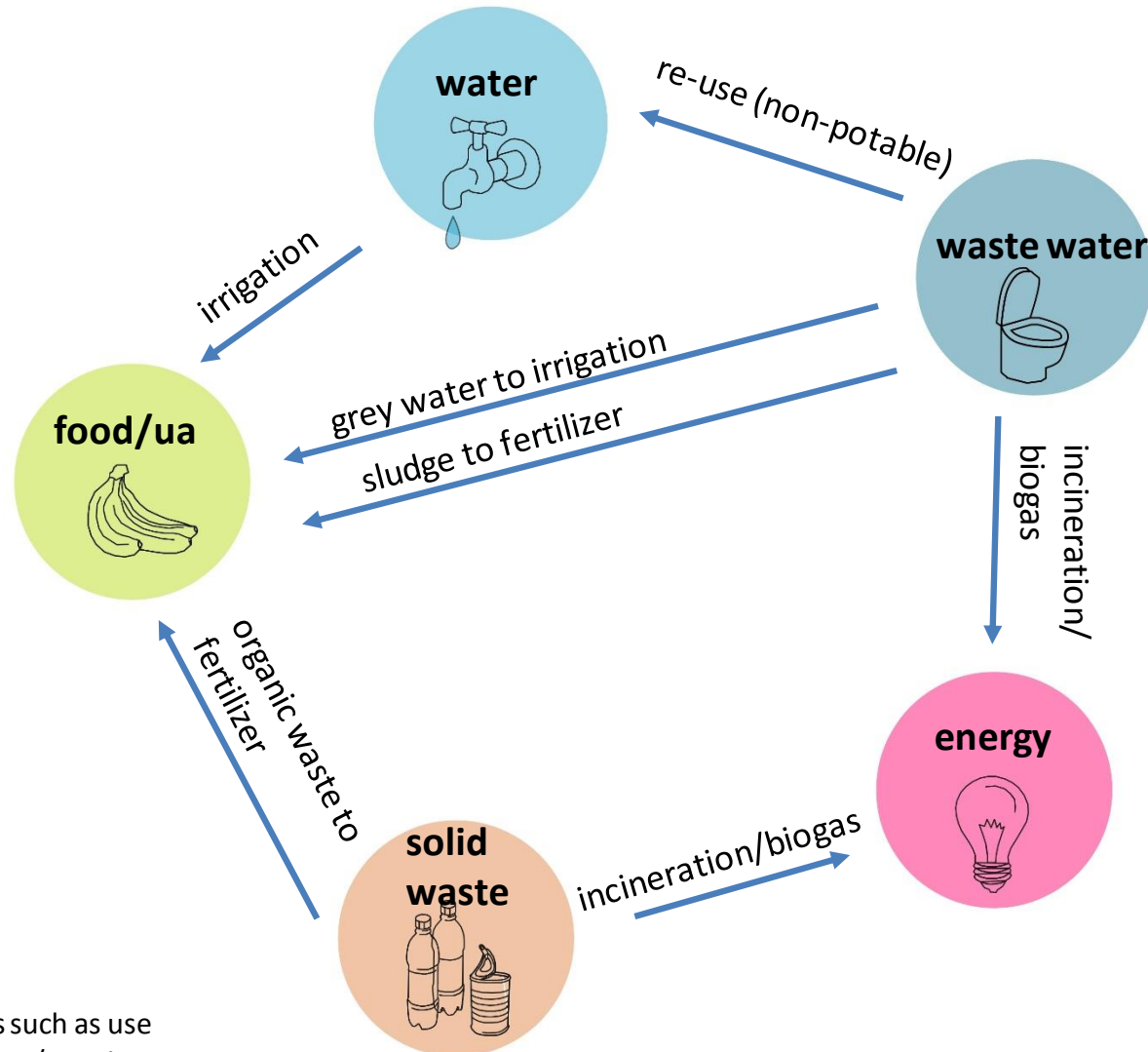


- change of land use
 - mosaic of overlapping and multi-functional spaces
- *regarding urban planning + trans-sectoral linkages*

Current trans-sectoral synergy exploitation in Kigali

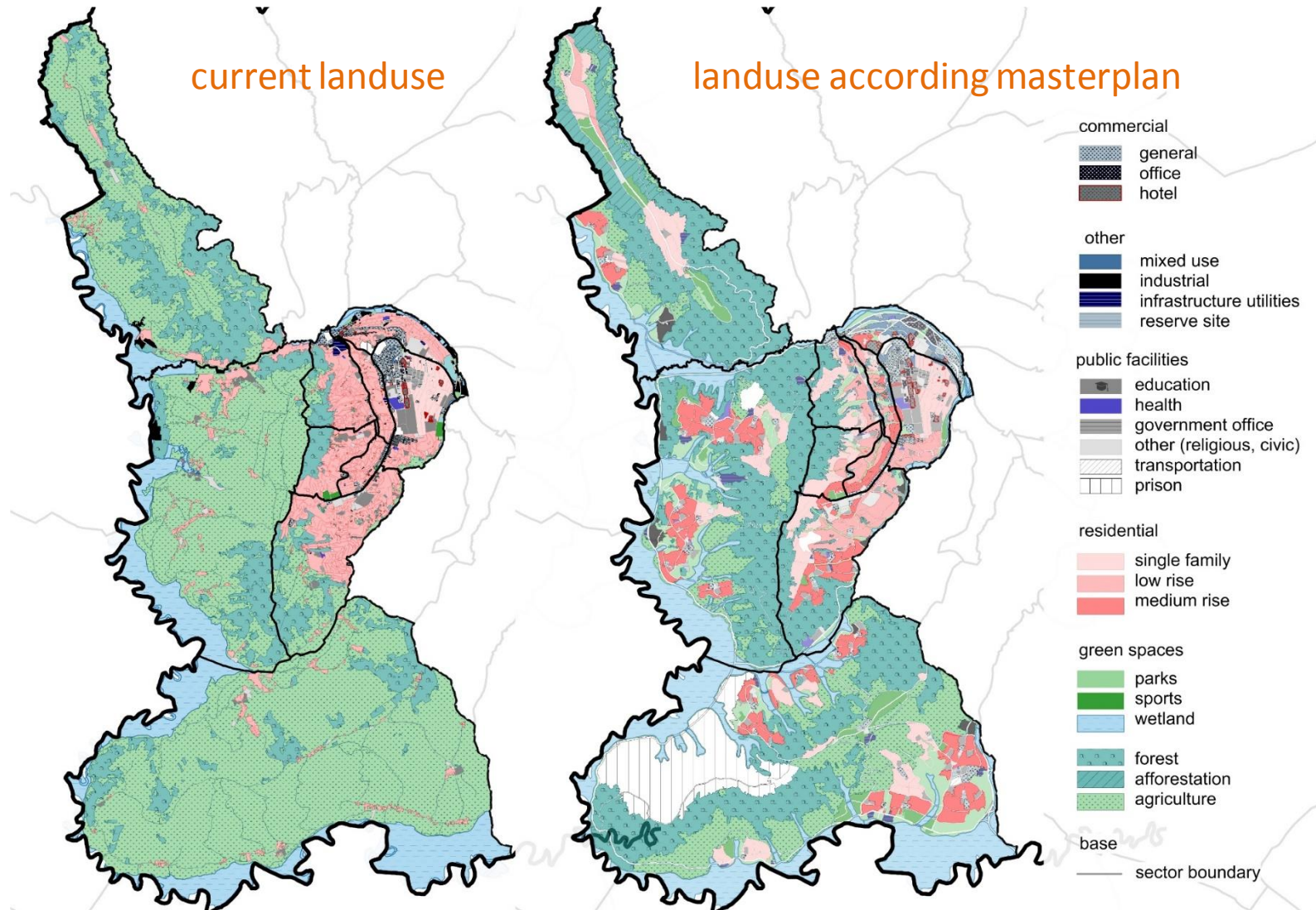


Key trans-sectoral synergy potentials



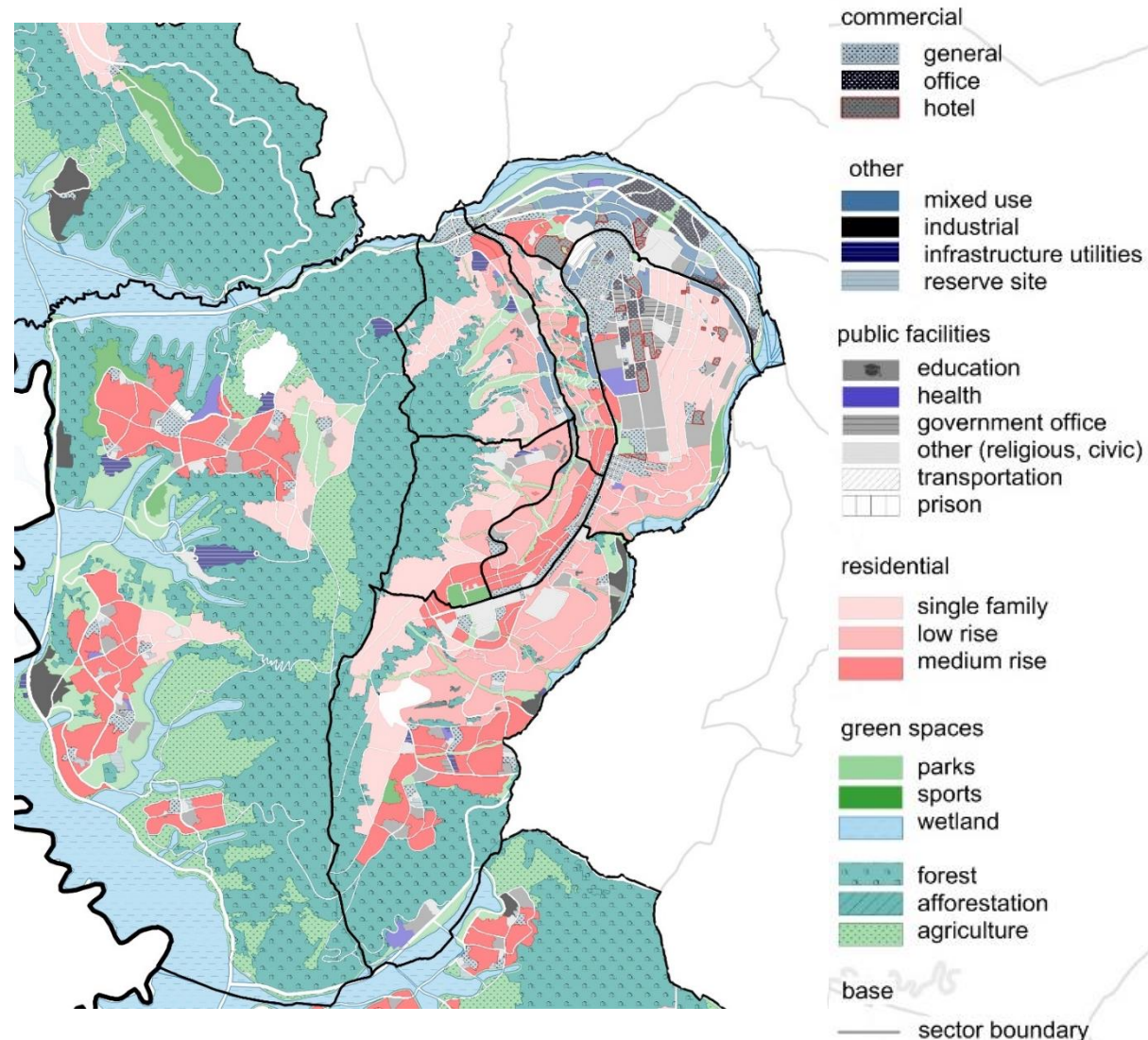
obvious interactions such as use of energy for pumping/treating water are not shown in this figure

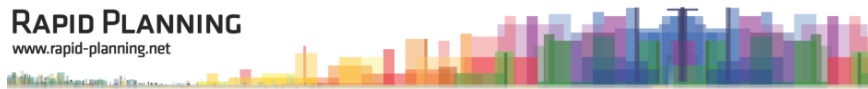
Rapid Planning scenario process: focusing on Nyarugenge



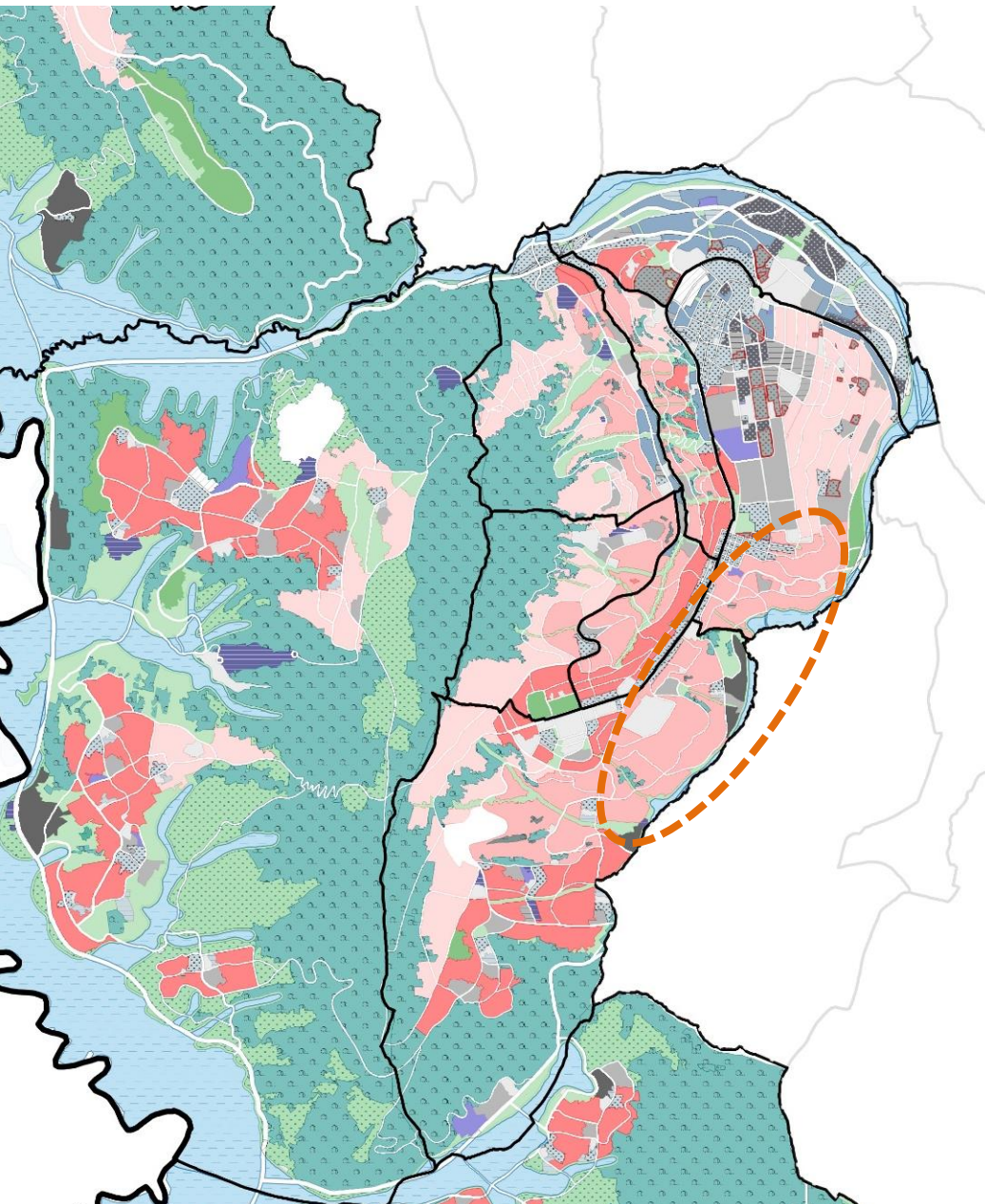
Rapid Planning scenario process: context specific solutions

the trans-sectoral scenario development proposes context-specific solution options for different land use categories





existing urban structures



commercial

- general
- office
- hotel

other

- mixed use
- industrial
- infrastructure utilities
- reserve site

public facilities

- education
- health
- government office
- other (religious, civic)
- transportation
- prison

residential

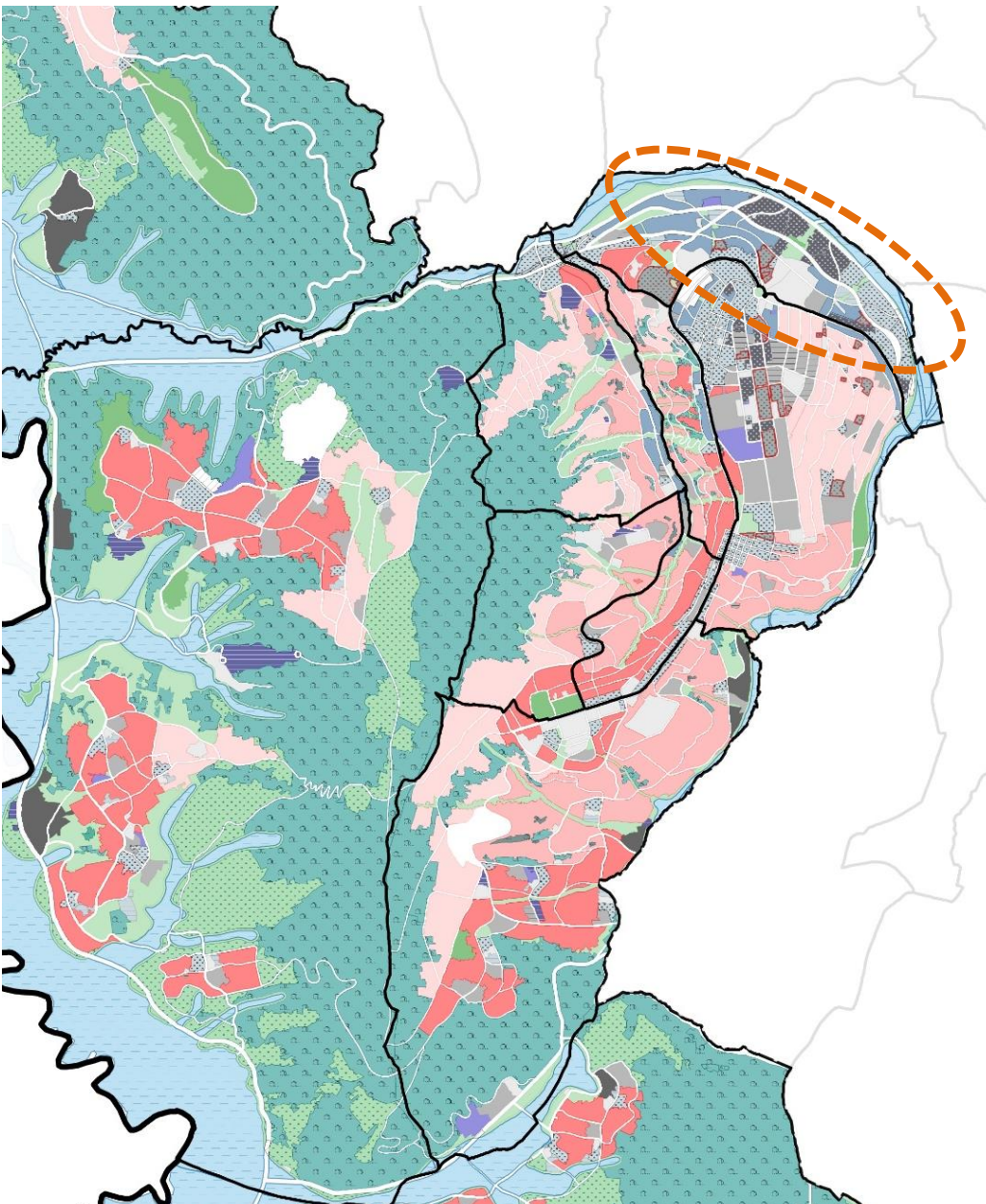
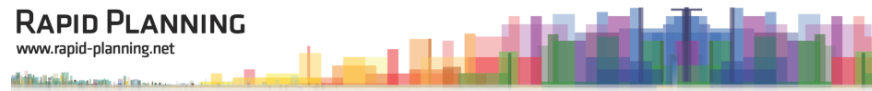
- single family
- low rise
- medium rise

green spaces

- parks
- sports
- wetland
- forest
- afforestation
- agriculture

base

- sector boundary



CBD development

commercial

- general
- office
- hotel

other

- mixed use
- industrial
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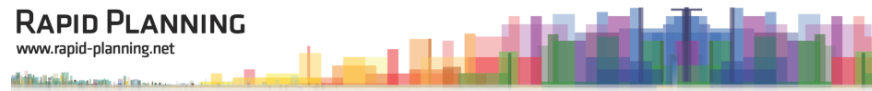
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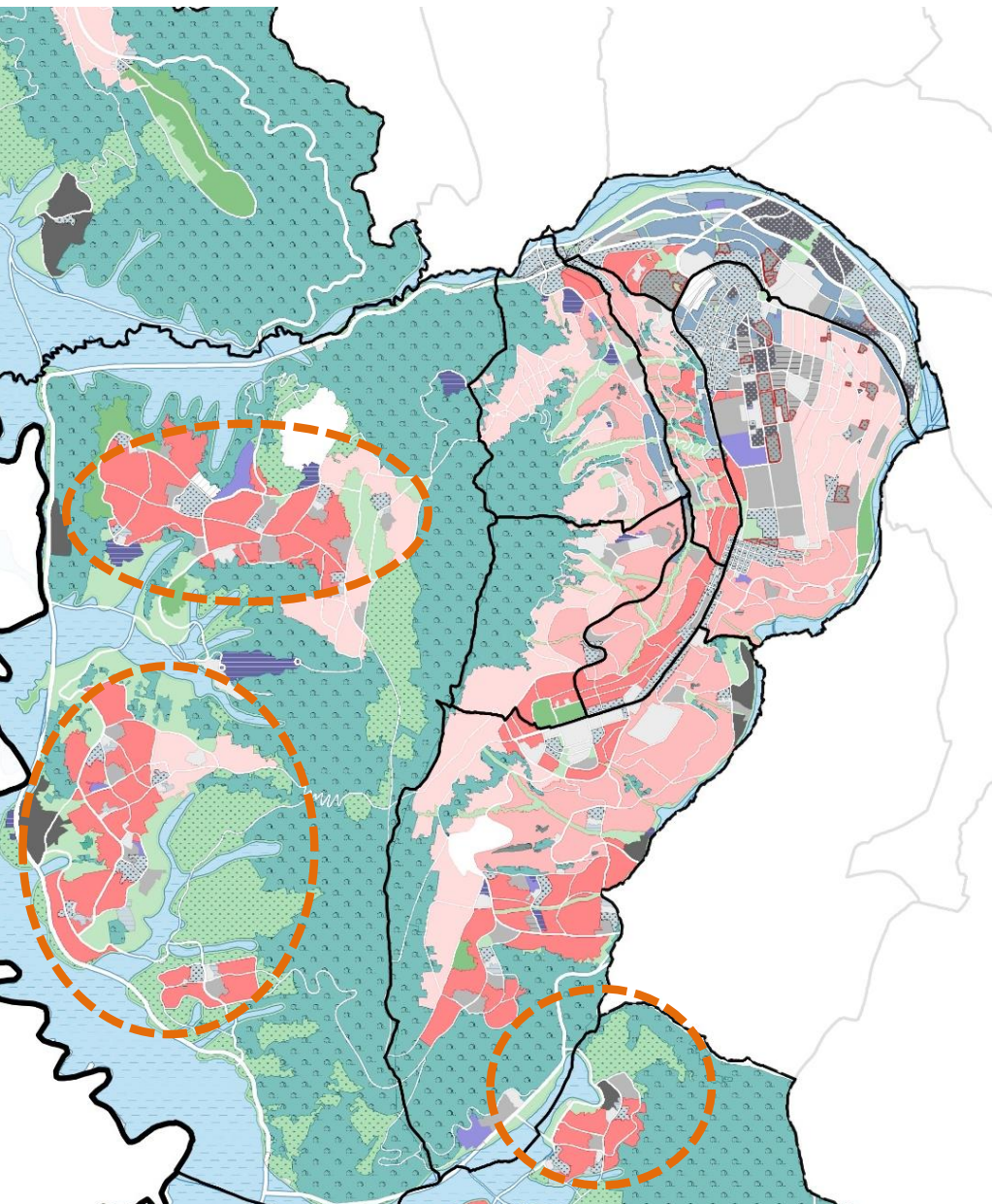
- parks
- sports
- wetland
- forest
- afforestation
- agriculture

base

- sector boundary



urban extension areas



commercial

- general
- office
- hotel

other

- mixed use
- industrial
- infrastructure utilities
- reserve site

public facilities

- education
- health
- government office
- other (religious, civic)
- transportation
- prison

residential

- single family
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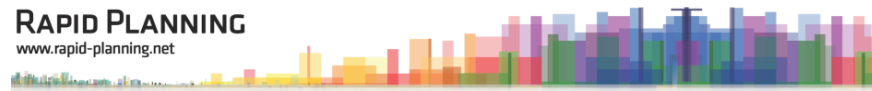
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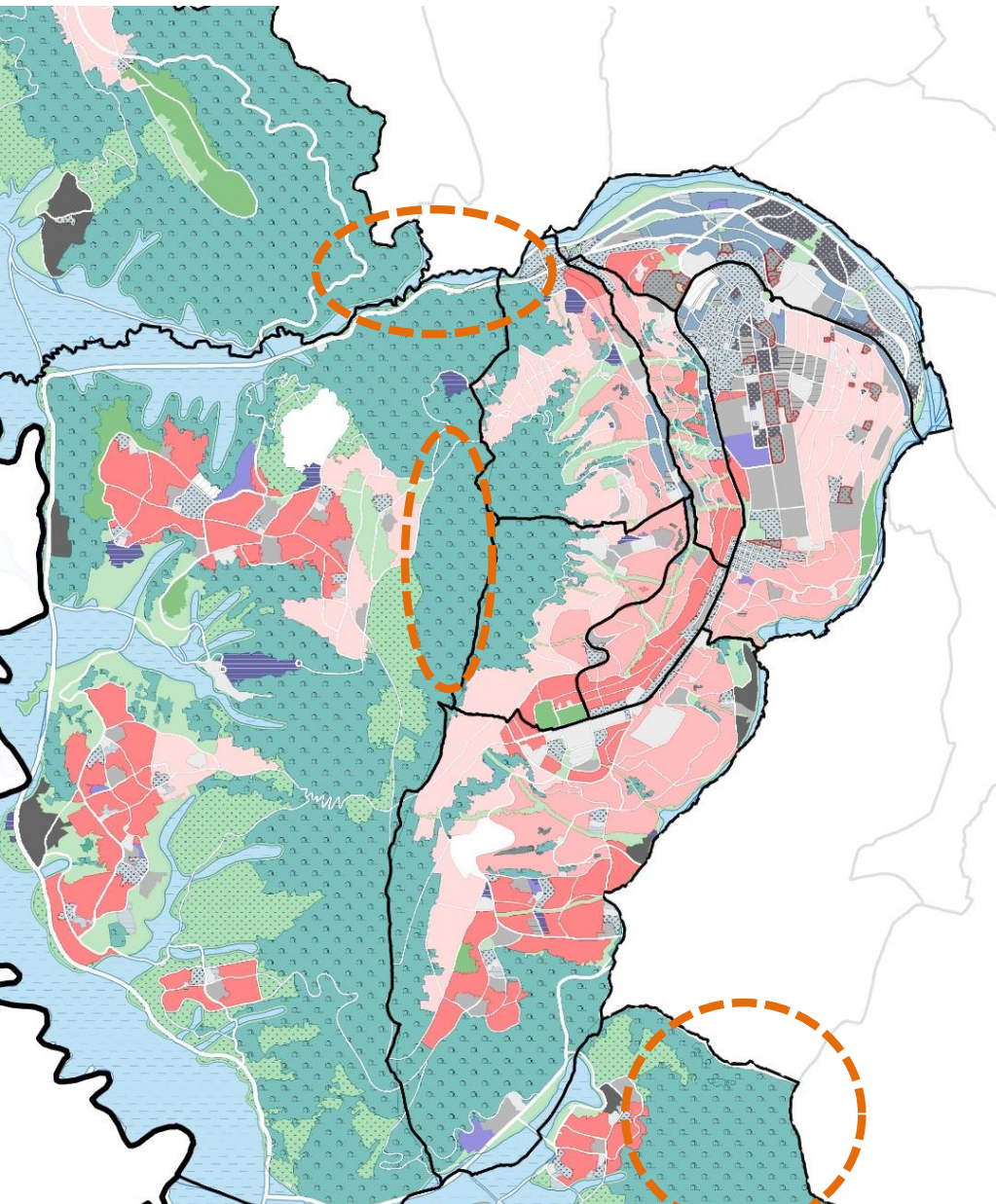
- forest
- afforestation
- agriculture

base

- sector boundary



areas for afforestation



commercial

- general
- office
- hotel

other

- mixed use
- industrial
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- reserve site

public facilities

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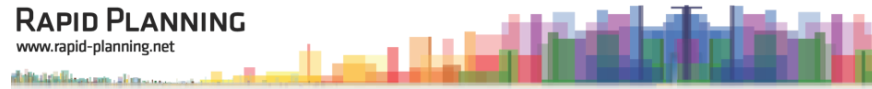
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Objectives RP scenario process in Nyarugenge

- to analyse the future land use in Nyarugenge District and its effects on urban infrastructures such as waste, waste-water management, food supply and food security, energy and water management
- to develop a common understanding of key cause-and-effect chains and the main interdependencies and interactions
- to define and then to simulate possible scenario options under the assumption of „What if...”

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The Rapid Planning scenario development process

today!

WORKSHOP PART I

—

SECTORAL URBAN AND INFRASTRUCTURE PLANNING

checking / validation of
values and assumptions

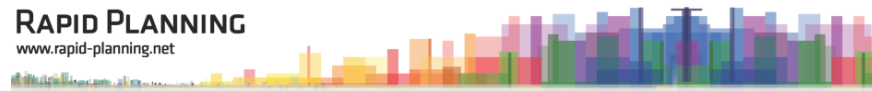
today!





WORKSHOP PART II

—

TRANS-SECTORAL SCENARIO DEFINITION

defining trans-sectoral scenario
options with stakeholders of
Kigali



Trans-sectoral Scenario Workshop, Kigali		
Time	Contents	Moderated by
WORKSHOP PART I – SECTORAL URBAN AND INFRASTRUCTURE PLANNING		
08:00 - 08:30	<ul style="list-style-type: none"> Introduction to RP scenario development Introduction to RP simulation 	<ul style="list-style-type: none"> Prof. Undine Giseke (TUB) Dr. Manfred Schütze (ifak)
08:30 - 09:00	Vision and goals for future urban and infrastructure planning	Emmanuel Ingabire (Nyarugenge District)
9:00 - 09:15	Tea/coffee break	
09:15 – 11:00	<p>4 Parallel Sectoral Working groups</p> <p>discussing status quo</p> <p>discussing future planning</p> <p>development and defining</p>    	<p>Responsible moderators for each group</p> <ul style="list-style-type: none"> Water/Waste water, Dr. Manfred Schütze, Catalina Viera (ifak), Ingeborg Joost (OCS) Energy: Jannik Vetter-Gindele, Dimitrij Chudinzow (IER) Food/urban agriculture: Prof. Undine Giseke, Katharina Lindschulte, Margot Olbertz (TUB) Solid waste: Dieter Steinbach, Andrea Schultheis (AT-V)
11:00 - 11:10	Break	
11:10 - 11:55	Synopsis of sectoral discussions and sectoral planning developments (10 min. each)	Local participant of each sector working group and moderators
11:55 – 12:00	Explanation of further procedure and interactive workshop format	TU Berlin



Murakoze!

Thank you!

Prof. Undine Giseke - TU Berlin