

Searching for System Leverage

Group Model Building for a Shared Understanding of Adequate Housing in Kenya

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Kibera, Nairobi



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Housing Situation

Urgency (World Bank, 2017)

- National housing deficit of > 2 million and growing
- ~ 56% of urban households live in slums
- ~5% urban growth rates (p.a.)

Complexity (World Bank, 2017; KIPPRA, 2017)

- Lack of formally trained construction labor; rising land prices; materials make up 40% of total cost; lack of affordable financing for owners

Habitat for Humanity

- Vision: “A world where everyone has a decent place to live.”
- Successful initiatives but no larger change within the system
- Cooperation with national partners but partly inefficient discussions and focus on solutions

Figure B.5b: Total Housing Needs (000s)



Source: World Bank

Facilitation Team



Project Goal: Develop a shared, systemic understanding among HFH and key stakeholders about current issues and opportunities within the affordable housing sector in Kenya

Research Question: Which dynamics drive inadequate housing in Kenya?

- *Internal Questions:* To what extent can a qualitative modelling approach provide benefits for strategy formulation?



Steven
Arquitt



Kaveh
Dianati

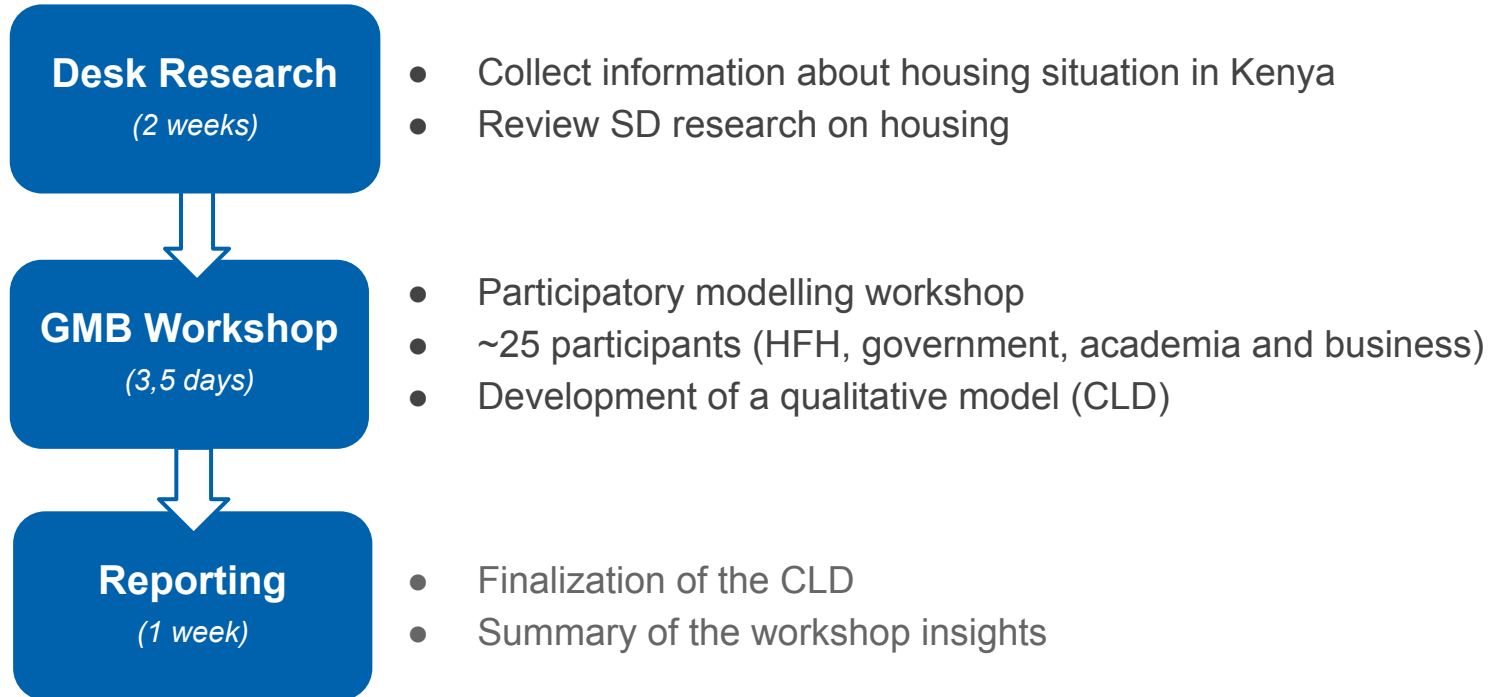


Alec
Eckert



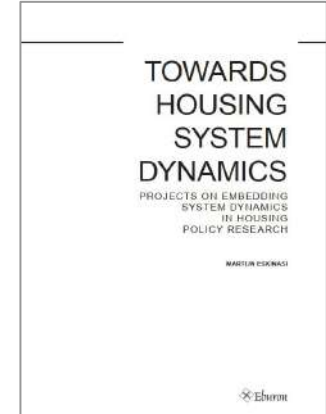
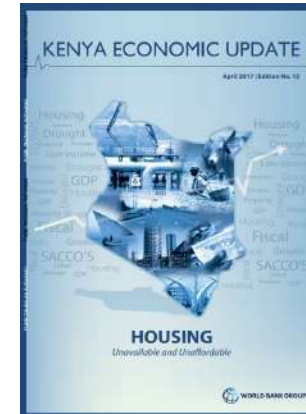
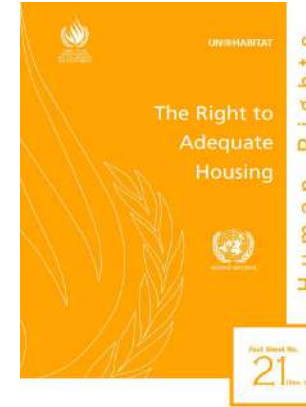
Gian
Wieck

Process Overview

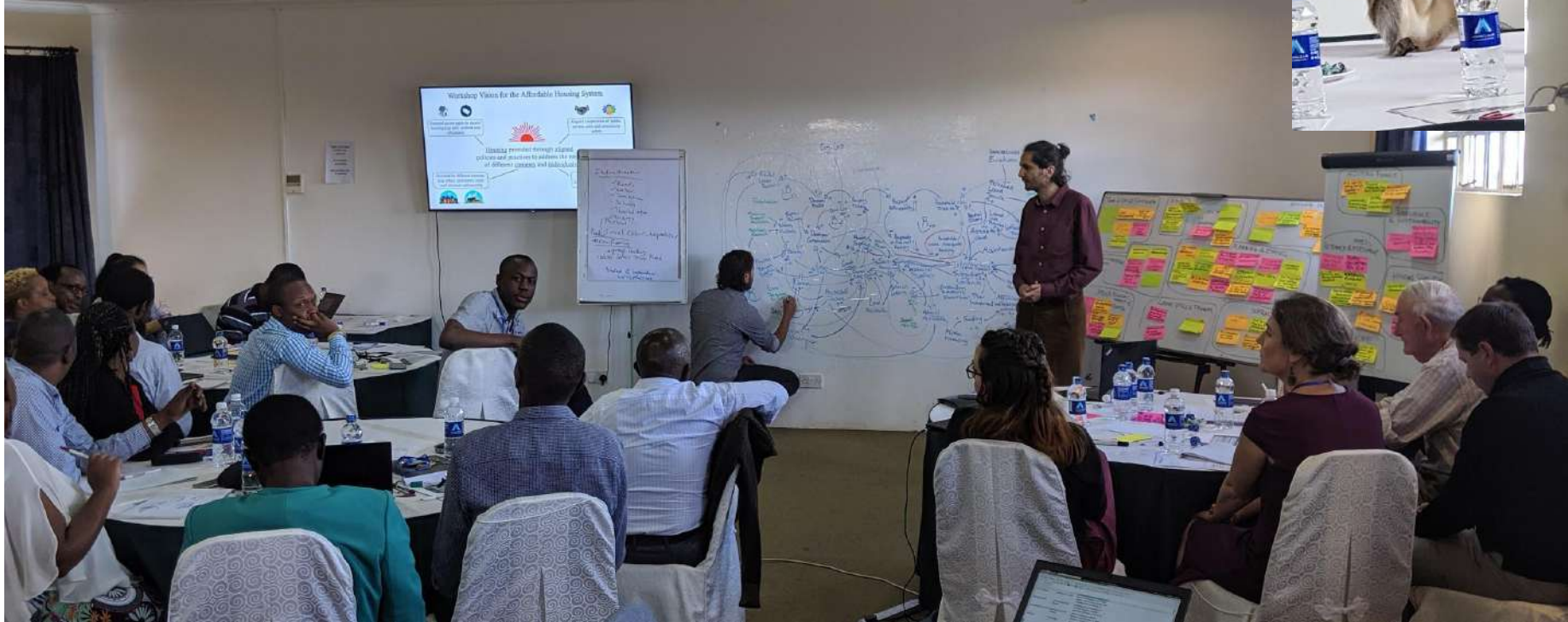


Desk Research

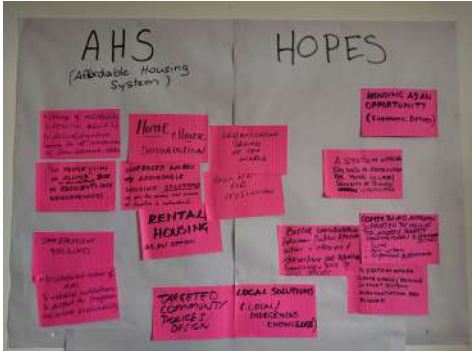
- **Adequate housing** means “more than four walls and a roof” (UN Habitat, 2014, p. 3). It comprises tenure security, availability of basic services, affordability, accessibility and cultural adequacy and is a prerequisite for education, health, privacy, social security and ability to work (UN Habitat, 2014).
- **System Dynamics** is well suited to represent the actual processes within the complex web of housing supply and demand and to develop a shared system understanding among various actors (Eskinasi, 2014).



Workshop



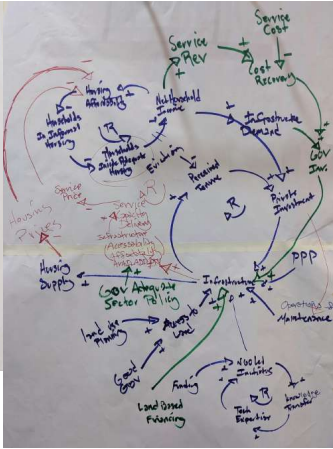
Workshop



Visioning



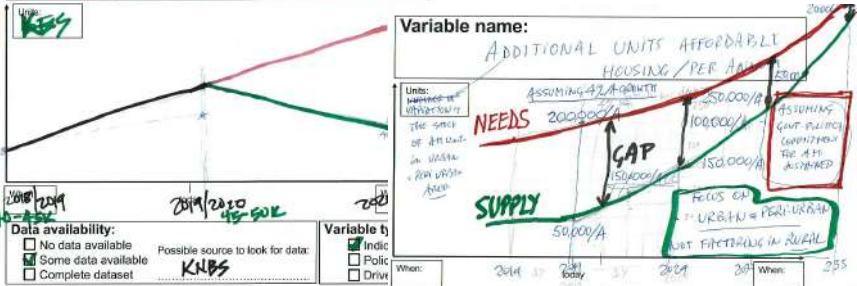
Systems Mapping



Variable Elicitation

Variable name: **COST OF CONSTRUCTION**

Behavior over Time



Data availability:

- No data available
- Some data available
- Complete dataset

Possible source to look for data: **KNBS**

Variable type:

- Indicator
- Policy
- Driver

Data availability:

- No data available
- Some data available
- Complete dataset

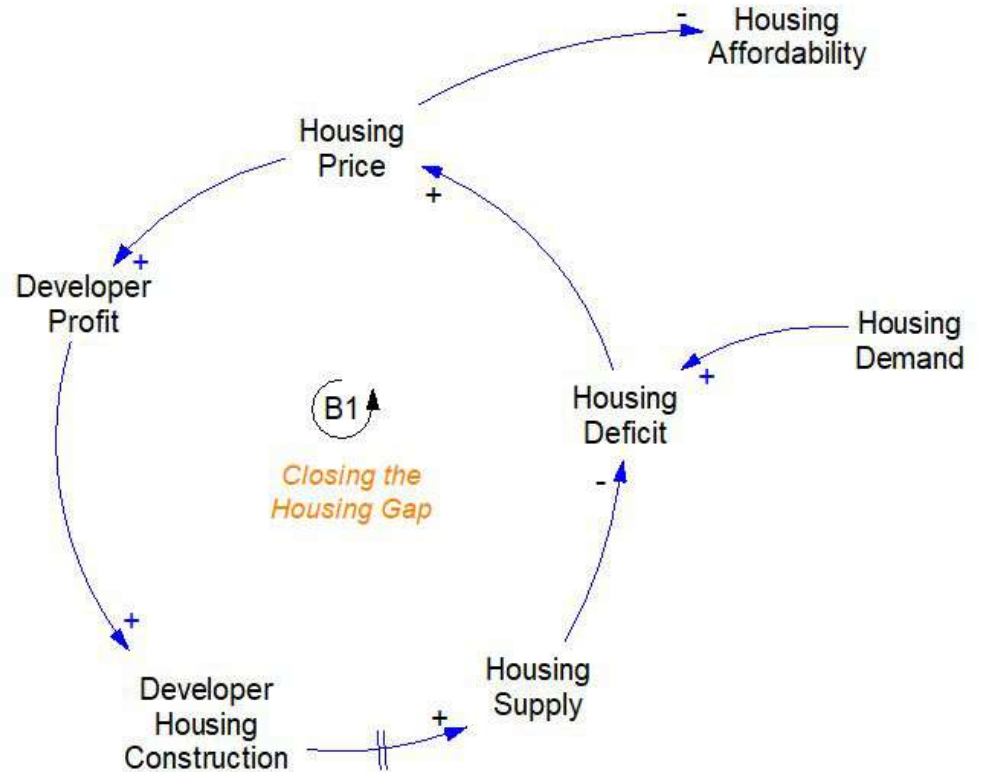
Possible source to look for data:

Variable type:

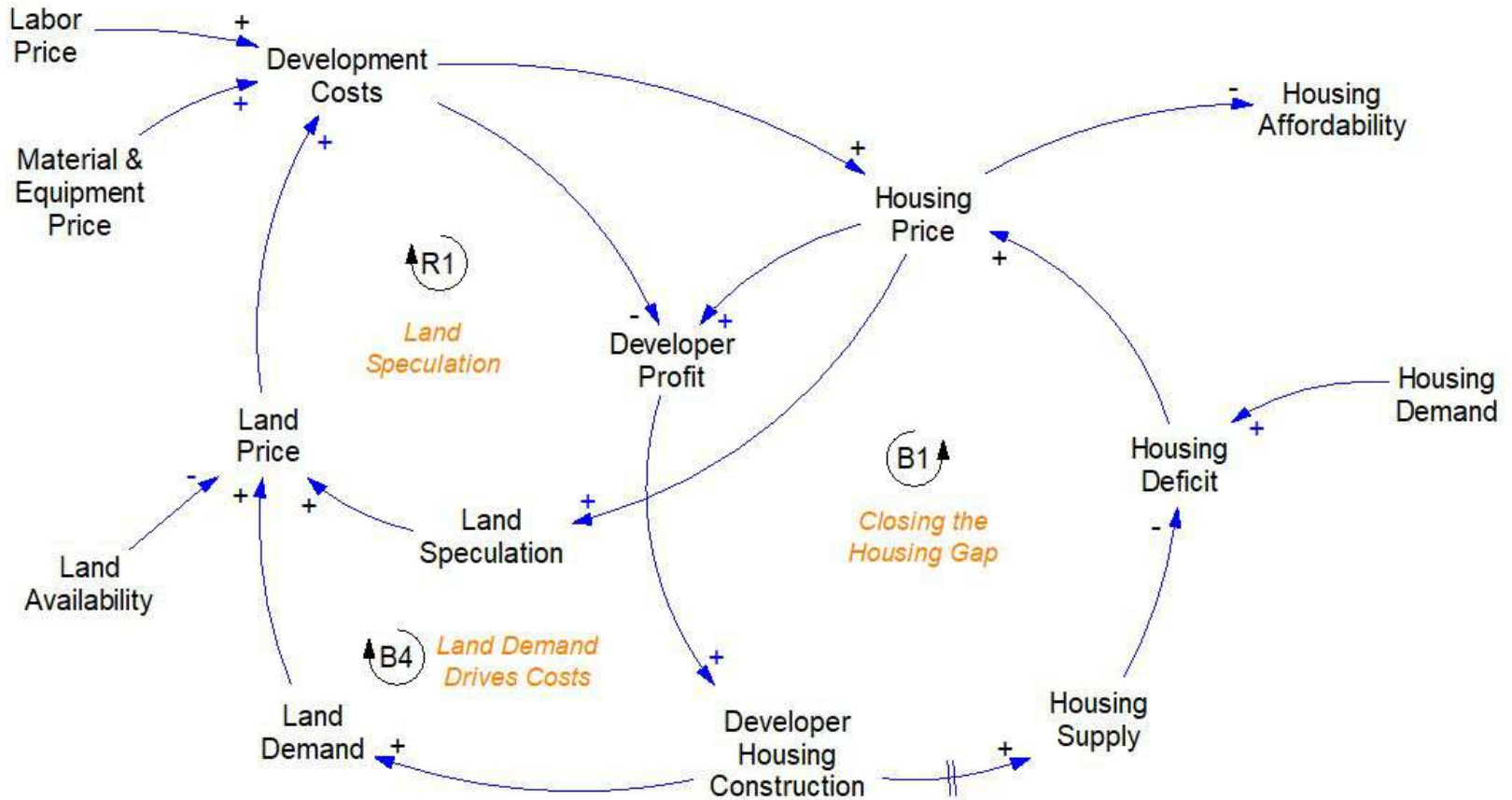
- Indicator
- Policy
- Driver

Concept Model

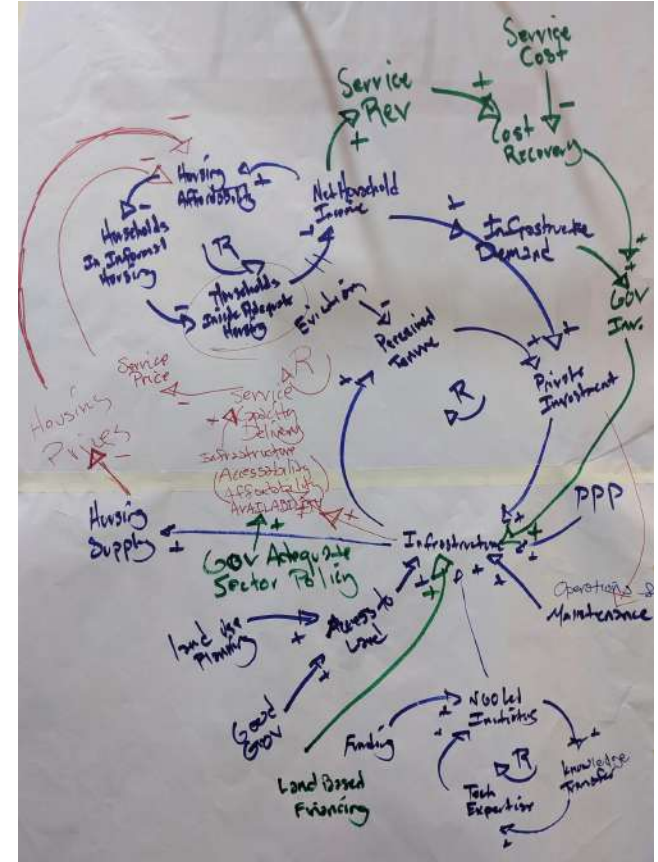
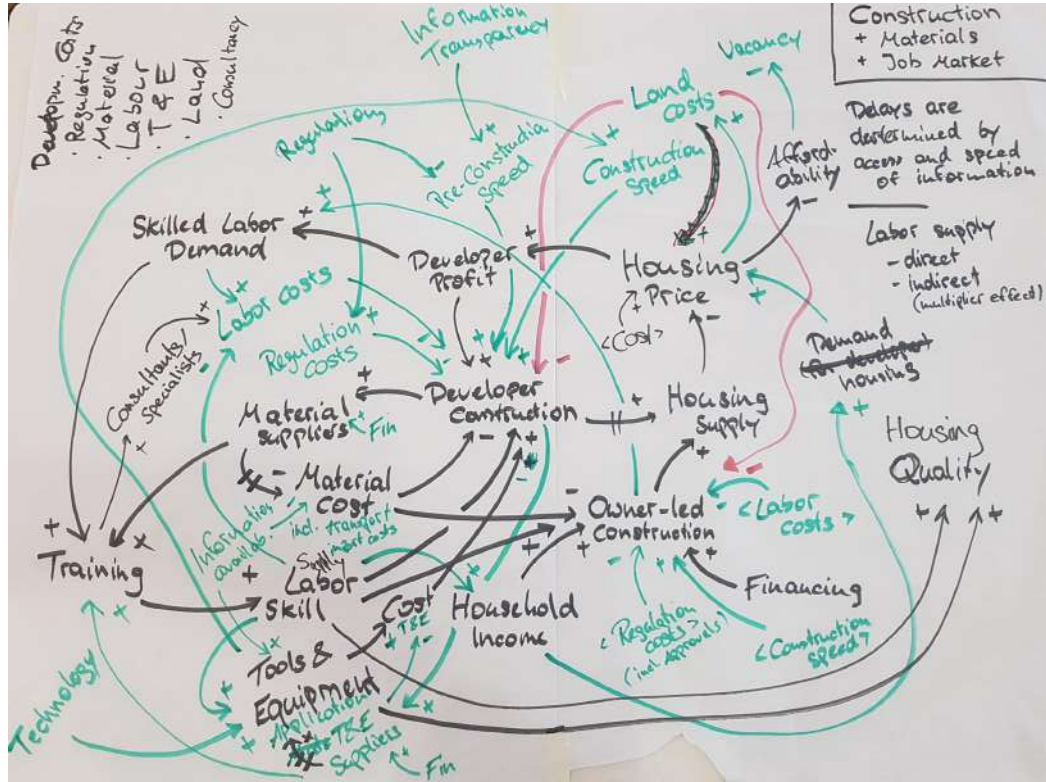
derived from the *Four Quadrant Model*
by Di Pasquale & Wheaton (1996)



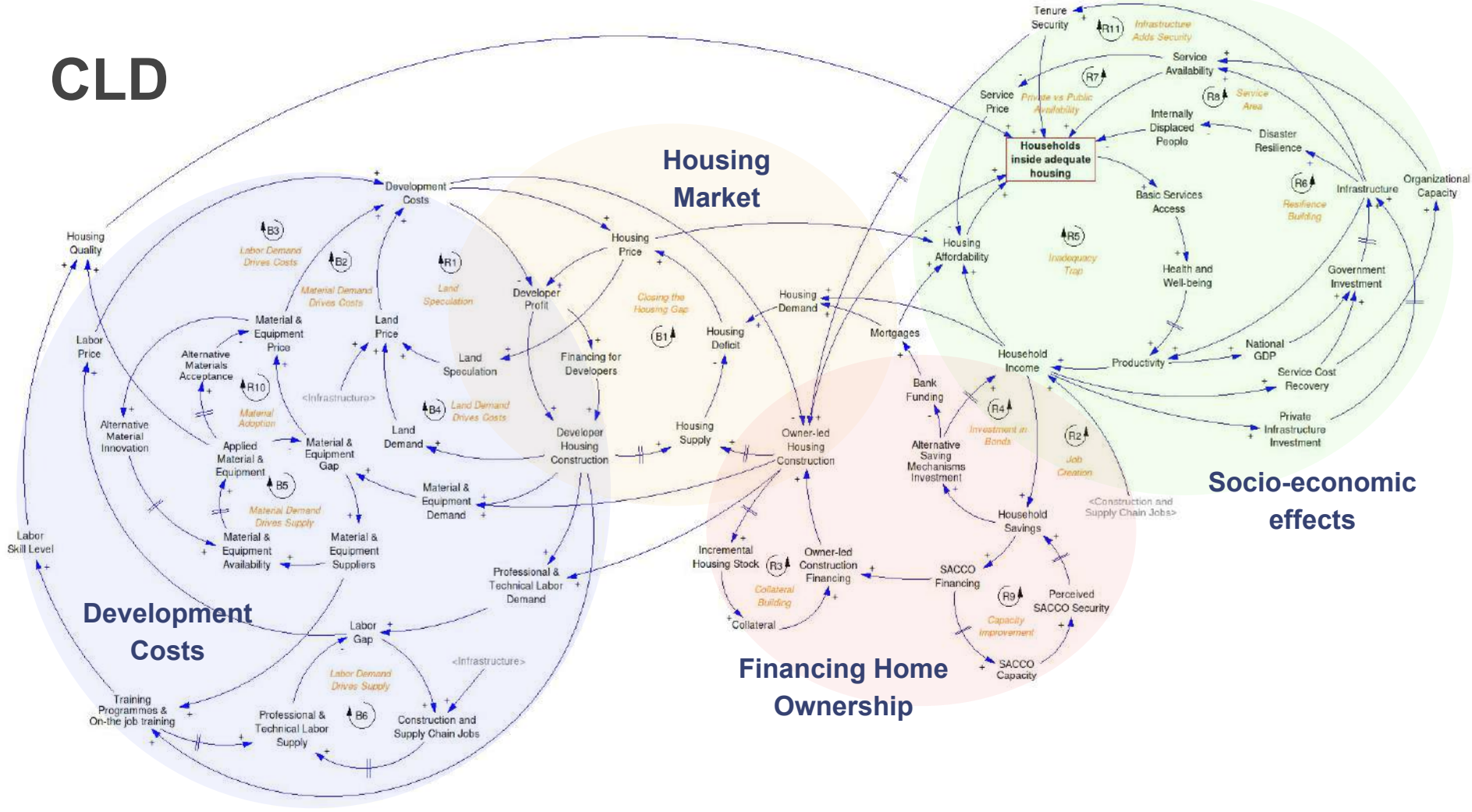
CLD



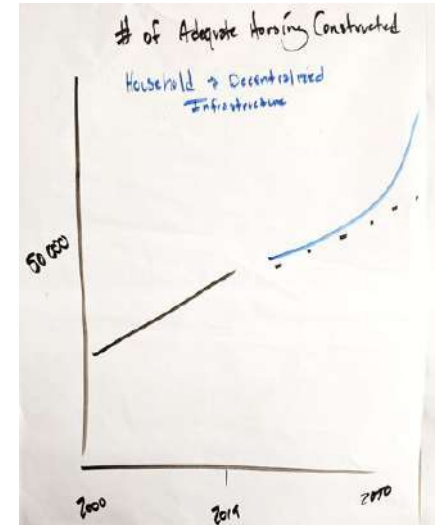
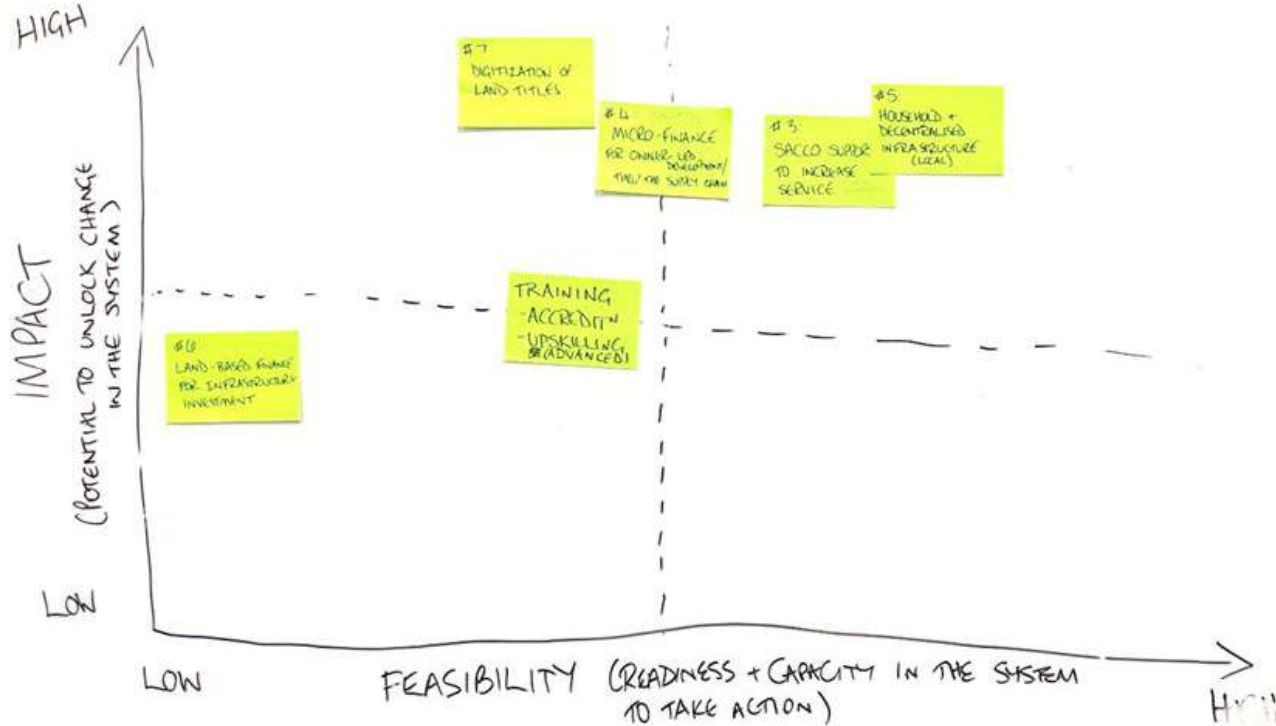
CLD



CLD



Analysis of Leverage Points



Reflection

Evaluation Criteria for Group Model Building (derived from Rouwette et al., 2002)

Individual	Group	Organization	Method
<ul style="list-style-type: none">• positive reaction of participants• insights into other sectors• dynamic learning was limited	<ul style="list-style-type: none">• safe space for communication• structure perspectives into a shared model• improved communication through system language	<ul style="list-style-type: none">• first systemic inquiry within the organization• impact analysis of interventions is limited	<ul style="list-style-type: none">• highly efficient project approach• intention to continue the system approach

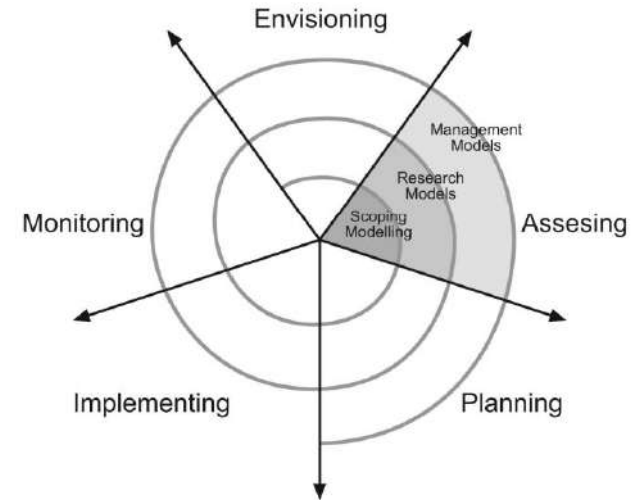
Summary

Qualitative modelling as the first step of system inquiry

- low entry barrier
- problem structuring & insights
- stakeholder engagement & understanding
- introduces systemic perspectives
- develop a more systemic theory of change
- provides framework for monitoring and data collection

Need for subsequent quantitative modelling

- validating assumptions
- learning about dynamics
- simulation of policies



Example: Integrated Modelling for Sustainable Adaptive Systems (van den Belt, 2004)

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