

**CRITICAL GEOGRAPHIES OF URBAN INFRASTRUCTURE**  
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Pecha Kucha Session

***Unfolding the linkages between adaptive capacity  
and infrastructure systems: exploring water supply  
in Sub-Saharan cities***

Liana Ricci  
SAPIENZA University of Rome  
Department of Civil, Building and Environmental Engineering (DICEA)  
[liana.ricci@uniroma1.it](mailto:liana.ricci@uniroma1.it)

# Debating Infrastructure and Resilience

- Building **resilient infrastructure** to
  - address **development challenges** and
  - **adapt to climate change** related stresses and extreme events in sub-Saharan cities.

## Developmentalist Approach VS Ordinary City

**Ordinary city** refocuses on **diversity** and the **creation of diverse forms of urbanism**

# Debating Infrastructure and Resilience

Lack of attention to the role of design, and operation of infrastructure in shaping a socio-technical environment, which plays a key role in the definition of **how to access, use and dispose resources**.



How this transition can be oriented to **reduce vulnerabilities**, and to investigate dynamics of access and exclusion in infrastructure provisioning.

Focus on **physical and economic aspects of resilient infrastructure** systems or on **increasing capacities** of people, groups and institutions in defining and implementing adaptation strategies.



**Integrating** these two perspectives to analyse the different modalities of producing water infrastructure in Dar es Salaam, Tanzania

# Adaptation and Resilience in Urban Policy

## Agenda

### Opportunity

Analyse the city reinterpreting complex urban systems of infrastructure, human-nature relation, ecosystem services, etc., widening sustainable options and adaptive capacity

### Risk

- Adaptation supports “**business as usual**” distracting from radical **policy changes** and mitigation reforms. Infrastructure production for **securisation** bypasses and **excludes** groups of people exacerbating vulnerability instead of reducing it

# Building the Analytical Framework

- Investigate interdependencies, synergies and reciprocal impacts between **infrastructure system**, and **residents' adaptation practices** and modalities of accessing and managing resources.
- identify "**enabling**" and "**preventing**" factors for adaptation to EC and environmental management relevant to residents' livelihood.

# Building the Analytical Framework

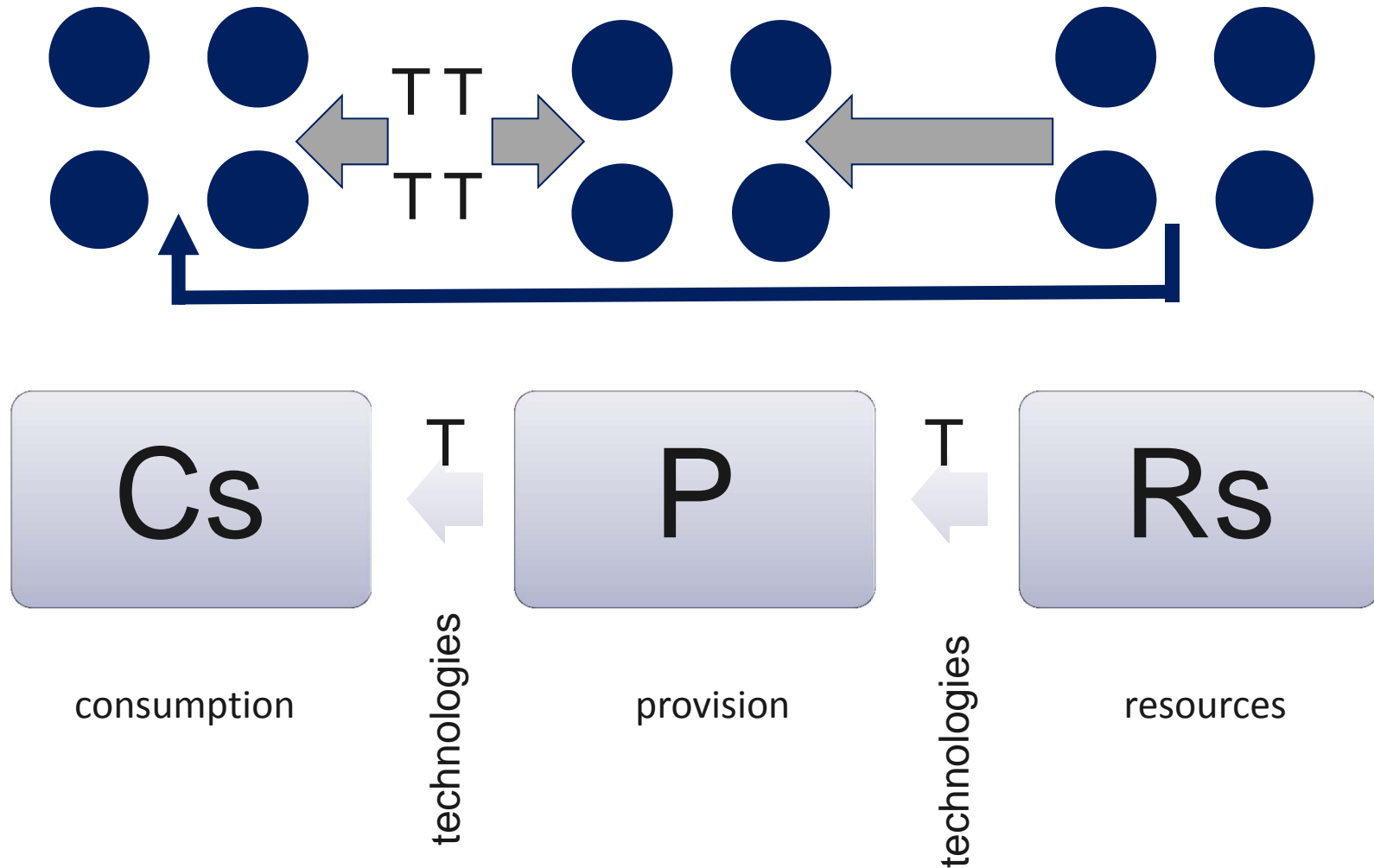
- Positive approaches and everyday practices
- “People as infrastructure”- “platforms of action” for adaptive capacity
- Contextual Vulnerability vs Outcome Vulnerability



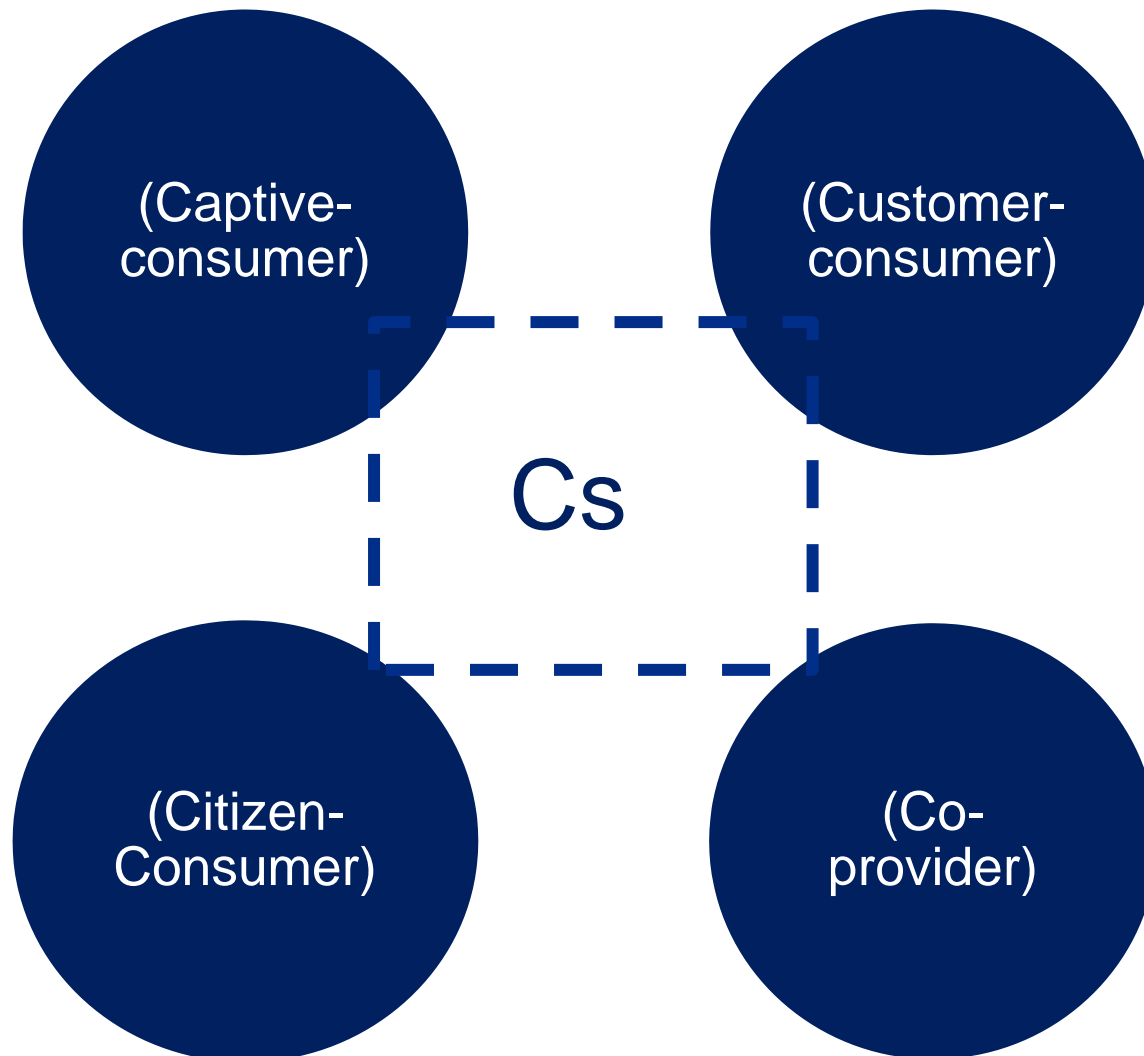
## ***Combining infrastructure provision and livelihoods***

- Differentiation in utility systems - co-existing modes
- Livelihood strategies and coping capacity

# Co-existing Modes of Infrastructure Provision



# Co-existing Modes of Infrastructure Provision





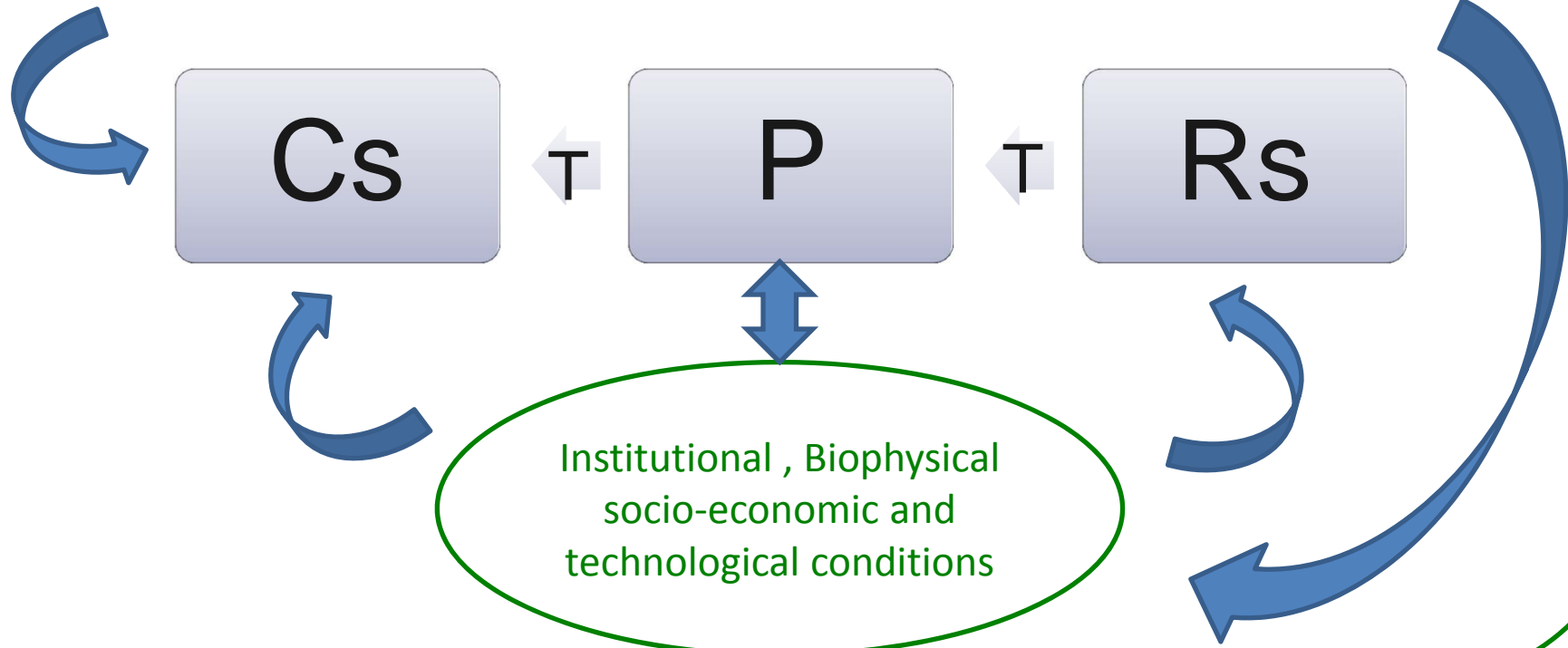
# Contextual vulnerability

## External processes

Political and institutional structures and changes

Environmental change and variability

Economic and social structure and changes



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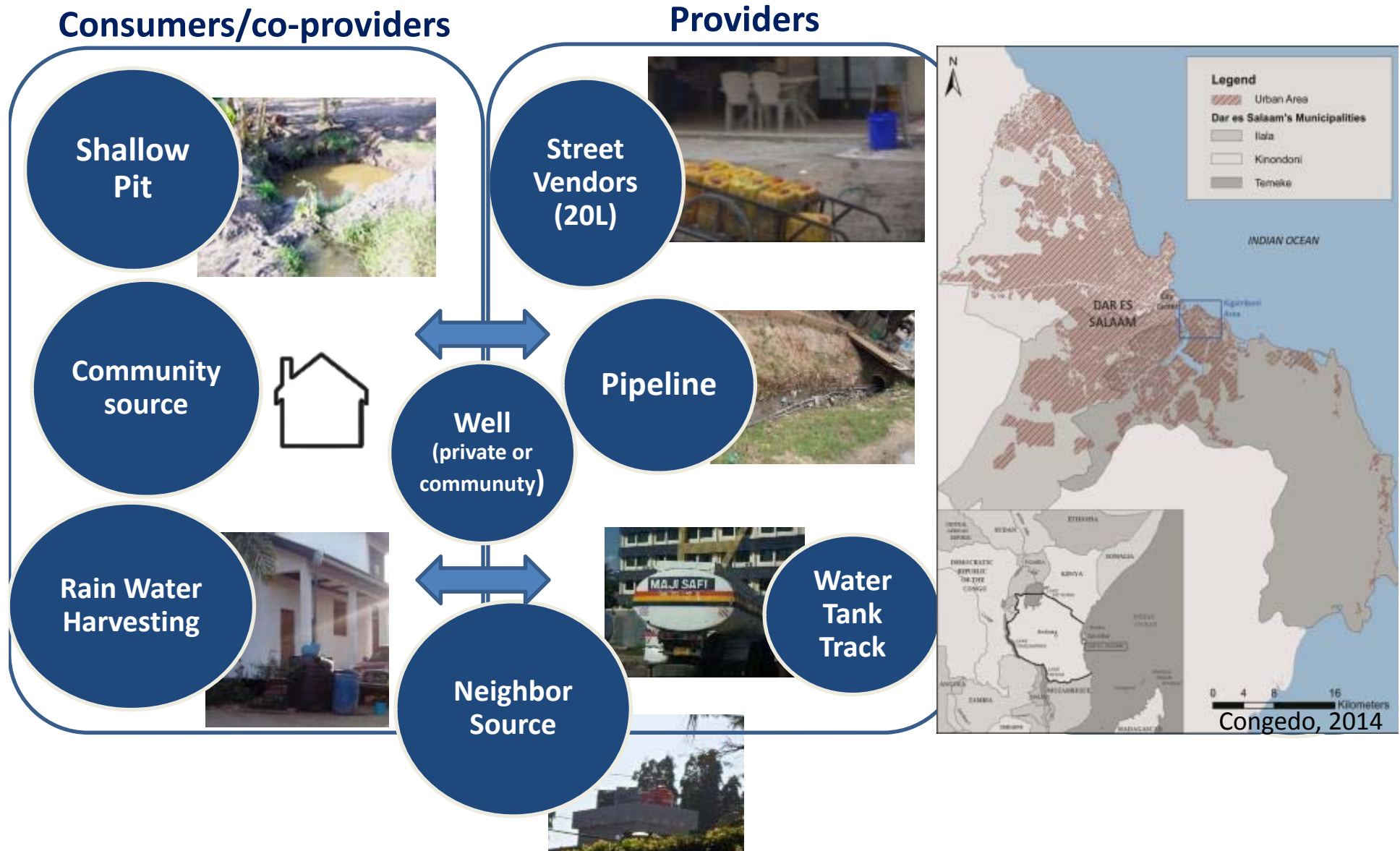
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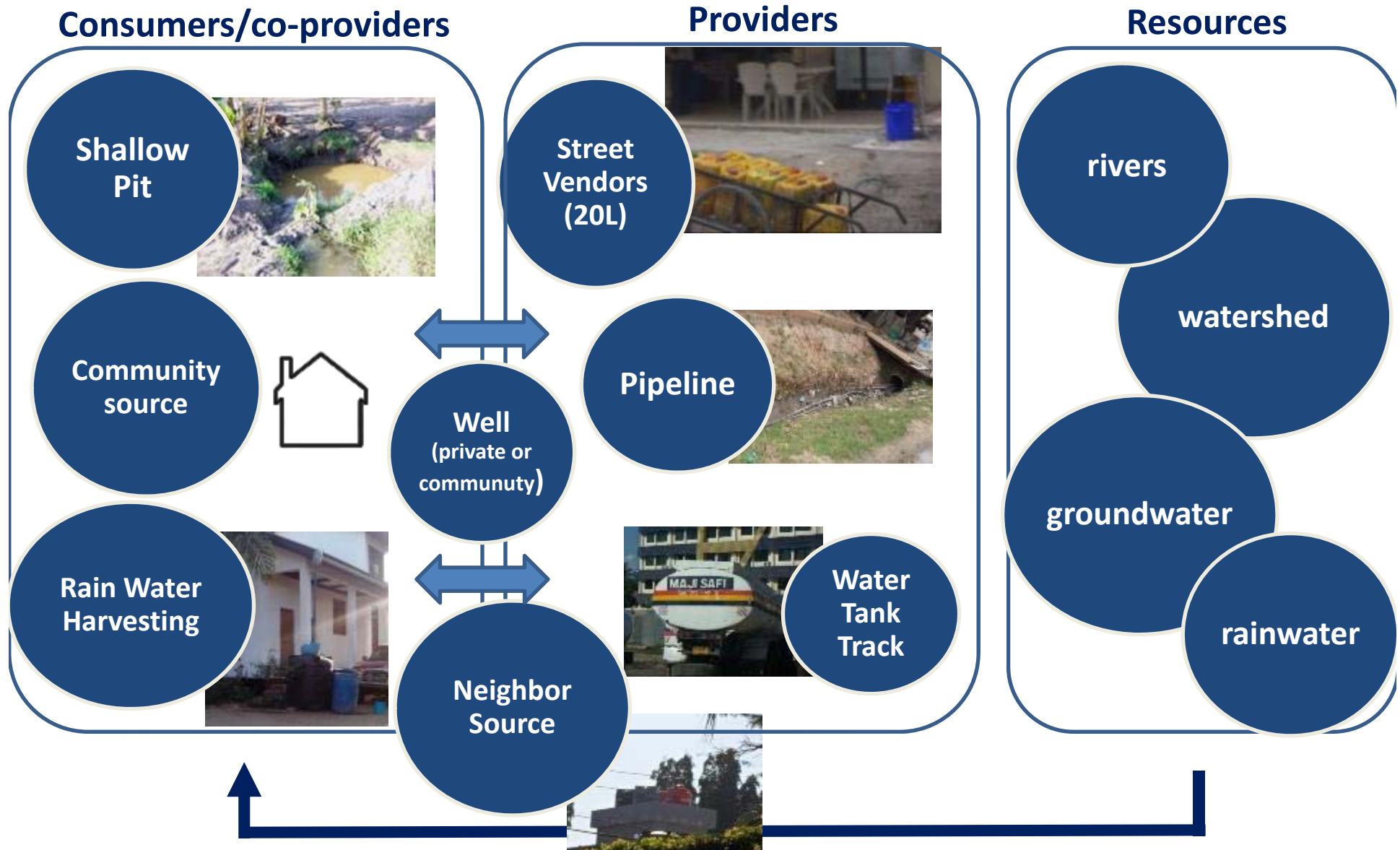
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Institutional , Biophysical  
socio-economic and  
technological conditions

# Water Provision in Dar es Salaam



# Water Provision in Dar es Salaam



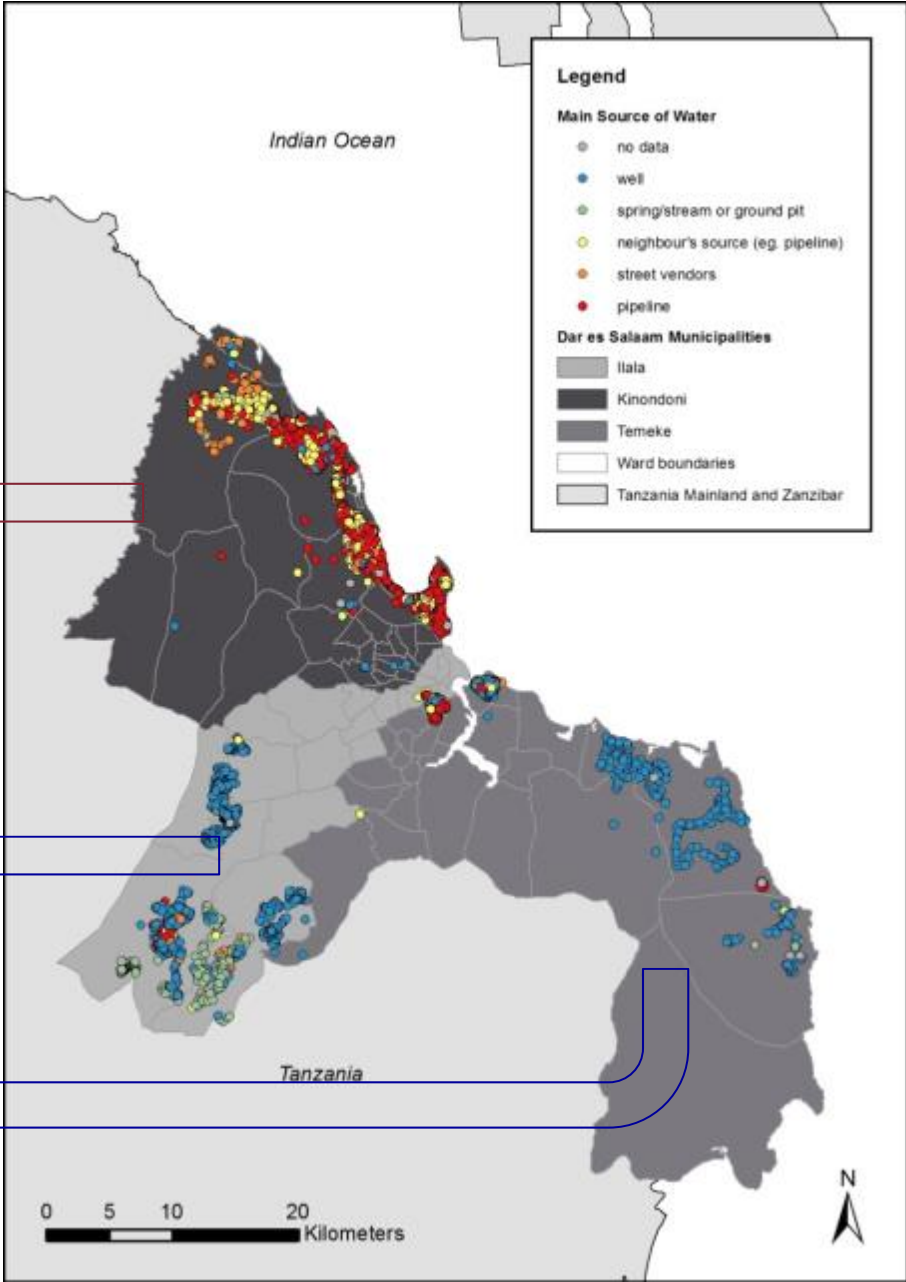
# Adaptation Profiles, Infrastructure and Resources

Low dependence on natural water source (pipeline + street vendors + neighborhood source)

Flexible adaptation strategies

High dependence on rural activity (agriculture, livestock, charcoal making and fishing as main source of income)

Resistant adaptation strategies (improve the situation)



# Defining Adaptation Profiles

## Adaptation as Resistance



Rural activities (agriculture and livestock)

Land title/ownership

Dependance on natural resources

Water availability and soil fertility decreasing observed

Low income

## Adaptation as Flexibility



Urban activities

Dependence on urban activity/services (frequent travel to the city centre)

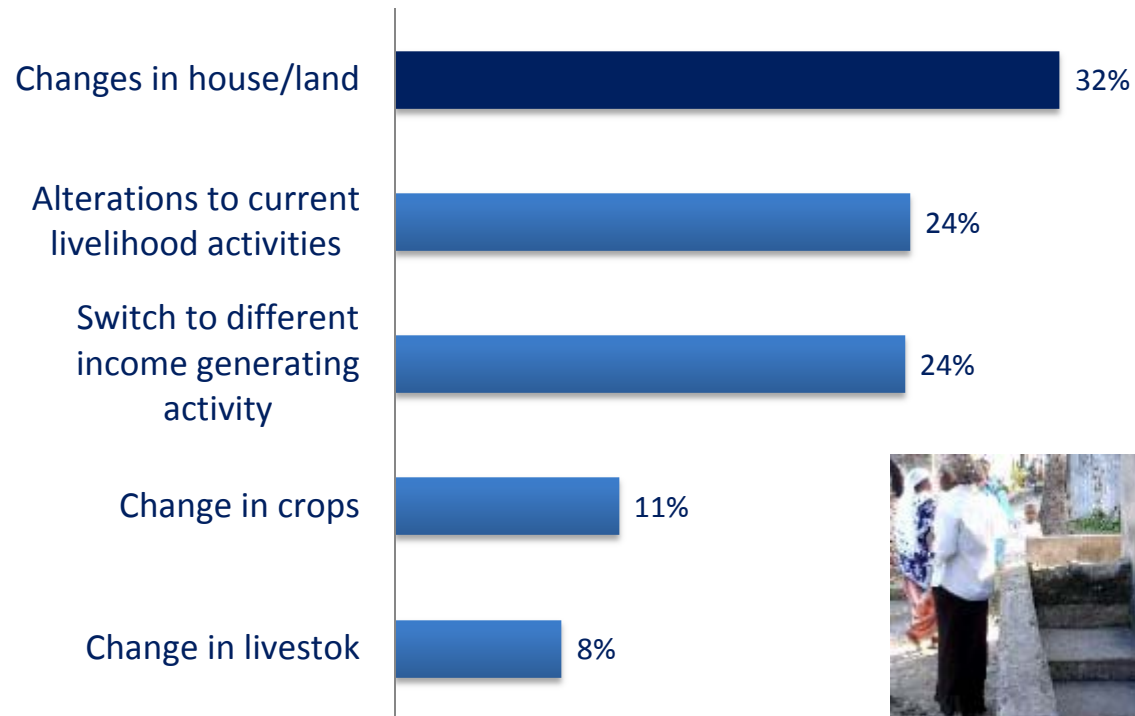
Changes in rain patterns observed

High income



# Water System of Provision and Vulnerability

## Current Autonomous Adaptation Strategies



Flood protection wall (Dodman 2009)

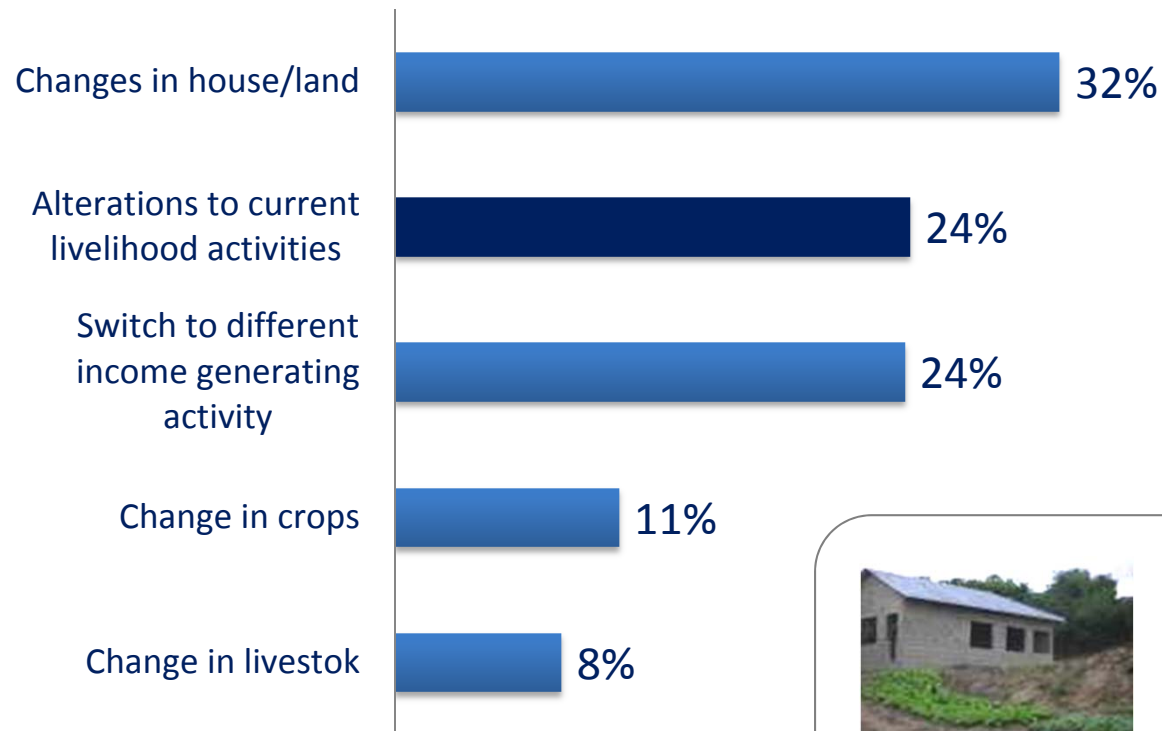


Shallow pit



# Water System of Provision and Vulnerability

## Current Autonomous Adaptation Strategies



Agriculture



# Conclusions

- **Standardized solutions** applied in context where people's livelihoods are highly dependent on access and management of natural resource, and infrastructure functions are complemented or replaced by social networks, risk to prevent access to resources and services may **increase vulnerability** and exacerbate exclusion.
- **Co-management** of resources and **co-provisioning** of services and infrastructure, is a determinative factor of adaptive capacity and vulnerability

## Key challenges:

- Consider co-management and co-provisioning an integral part of the **spatial production process**
- **Recognise a system of power and relational knowledge**, as well as the capacities
- Recognise different interests, **negotiation mechanisms** and “strategic” connections
- How urban policy and planning can be inspired by these “platforms of action”: *can they inform a project of infrastructural systems that substitute or integrate modern networks of steel and cement, or hybridize with them’*