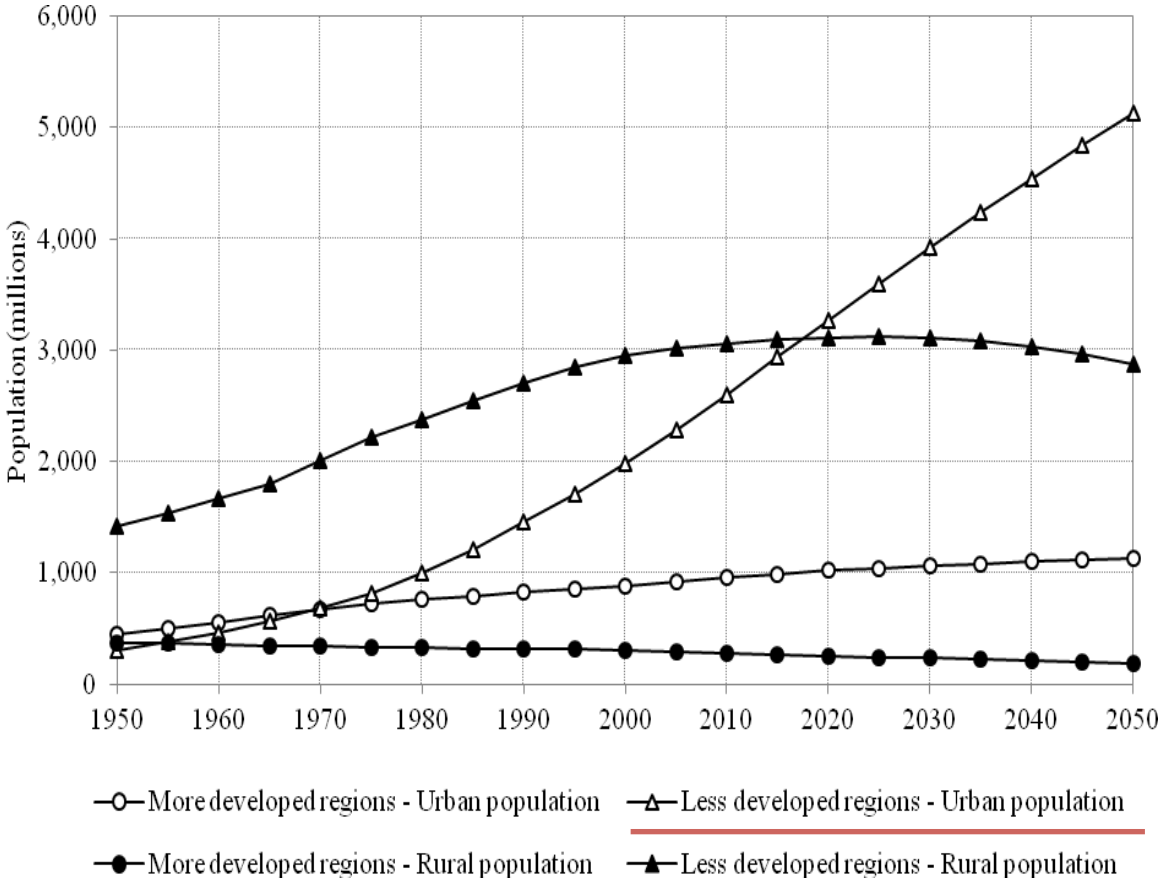
Why cities are becoming more important in the developing world?

Urban and rural populations by development group, 1950 - 2050



- All of the expected growth in the world population will be concentrated in the urban areas of the less developed regions (UN ESA, 2011)
- The size of urban population often serves as a convenient proxy for agglomeration economies. This in turn can help to stimulate growth and development (Bruelhart & Sbergami, 2009)

Source: (UN ESA, 2011)

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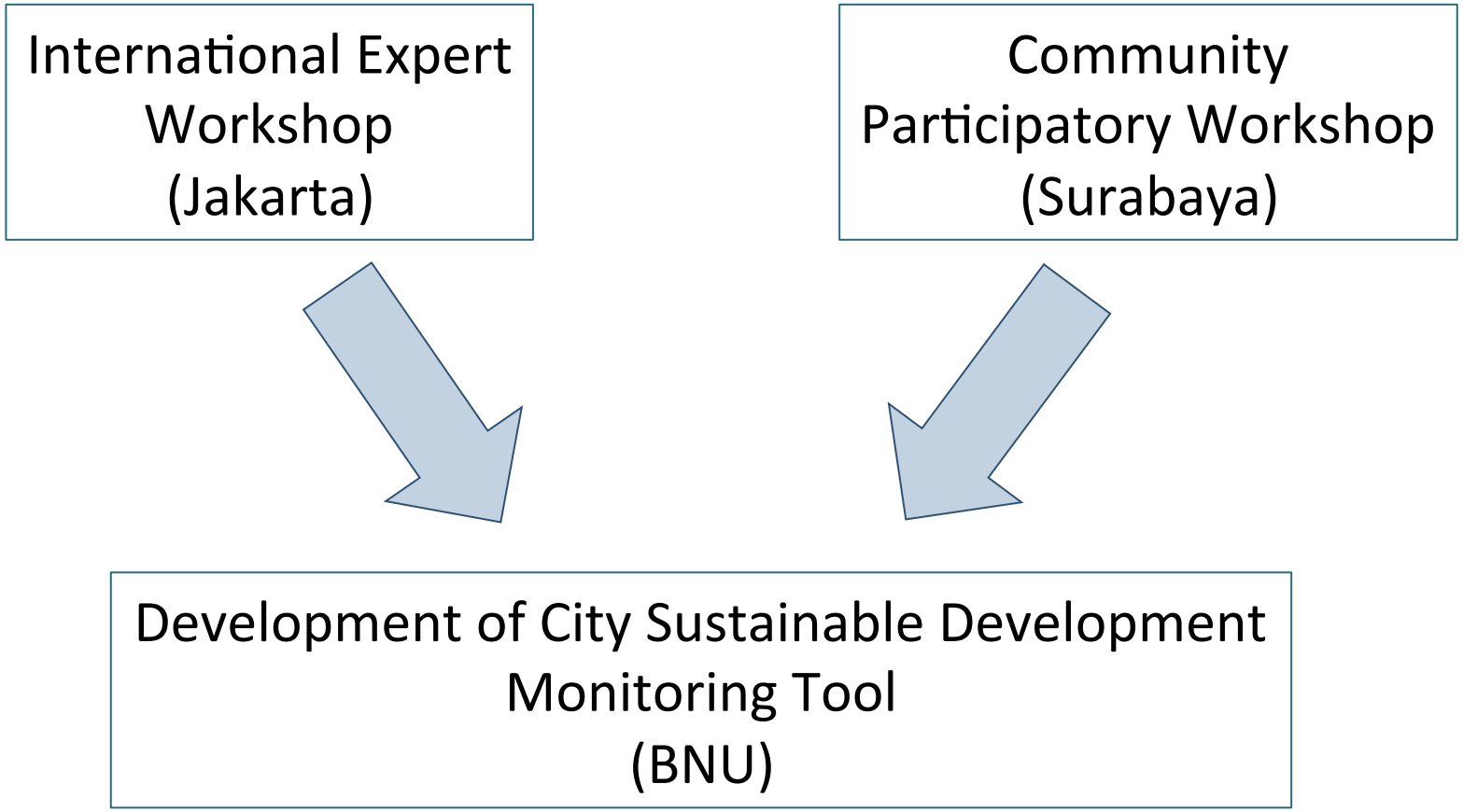
Research Outline



International Expert Workshop, Jakarta

- **Sharing and discussing the latest researches on urban sustainable development**

urban is not a mere state or product or location, but **process**, in other word; urbanization.

Within the process, it is important that activities contributing to the economic development should not go beyond **the planetary boundary**

Appropriate technological innovation and capacities would be required. Appropriate also means that it meets the diverse characteristics and values across cultures

Monitoring and financing are two important aspects for the sustainability of an urban development, which could be supporter by partnerships

There were also discussions about the urban area should be **self-sufficient**, even in activities with high ecological footprints such as energy providing and improved water supply

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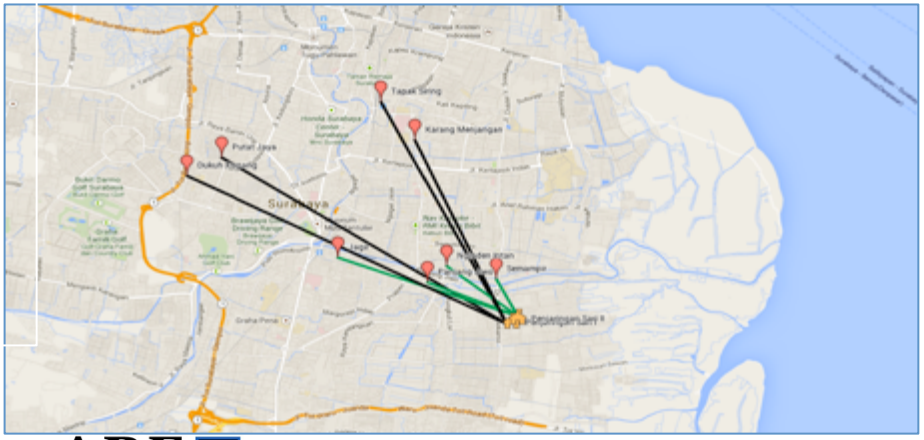
Surabaya community Workshop: geographical location

Target area

- Sixteen women and sixteen men from an urban government housing in Surabaya
- Four days participatory workshop
- Participant age between 30 to 50 years old

- Targeted community was evicted people from various areas in Surabaya city, including riverbanks and city centers



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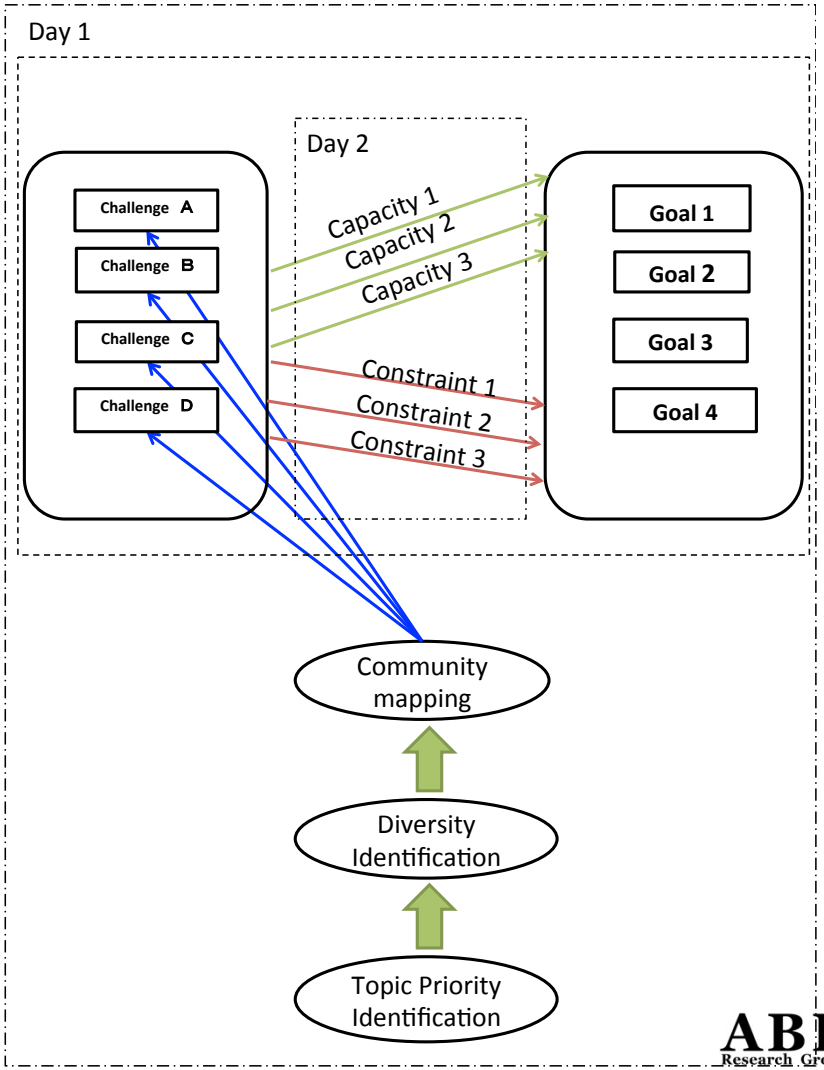
Surabaya community Workshop: Participatory Workshop Flowchart



- Brainstorming the utilities and systems of their neighborhood to identify challenges
- Suggestions on ideas of the possible constraints and necessary capacities in achieving their goals

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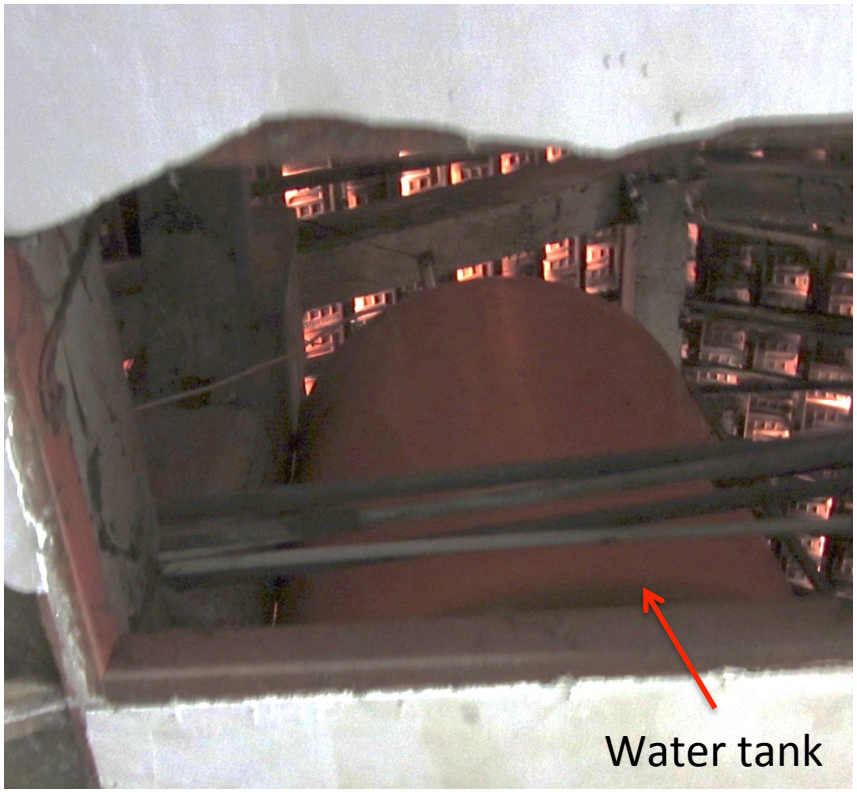
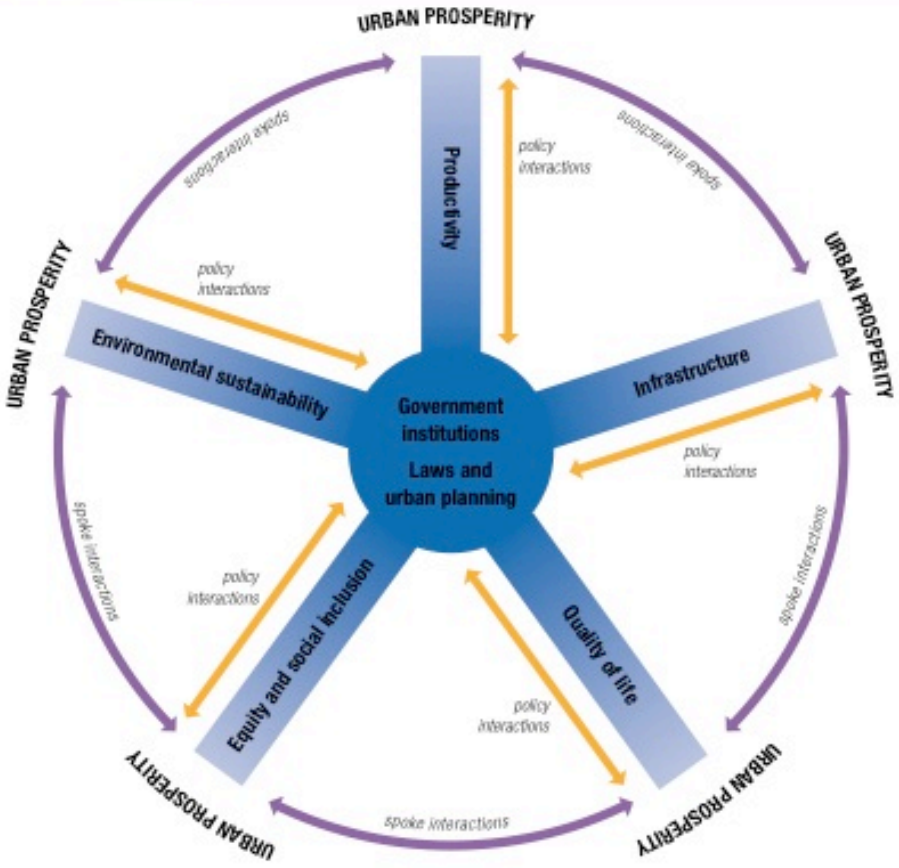
Nexus between Water and Energy

Pumping water needs electricity → Because water storage tank is just below the roof!



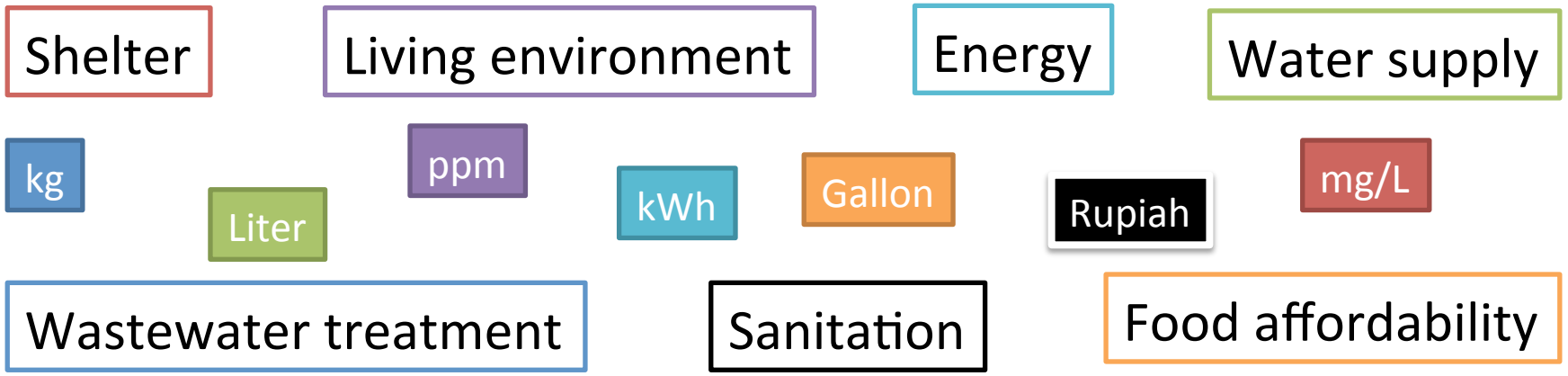
City prosperity index (CPI)



Source: UN Habitat, 2012

Types of index	Definition and variables
Productivity index	The total output of goods and services produced by a city's population during a specific year (capital investment, formal and informal employment, inflation, trade savings, export/ import, household income and consumption)
Quality of life index	A combination of three sub-indices: education, health and public space
Infrastructure development index	A combination of two sub-indices: infrastructure proper and housing
Environmental sustainability index	Air quality (PM10), CO2, emissions and indoor pollution
Equity and social inclusion index	Inequality of income/consumption (Gini coefficient) and inequality of access to services and infrastructure

Summary of findings



- Need to consider and address other intersections among basic needs in urban life.
- Different challenges have different units and measurements. How can we comprehensively evaluate all?

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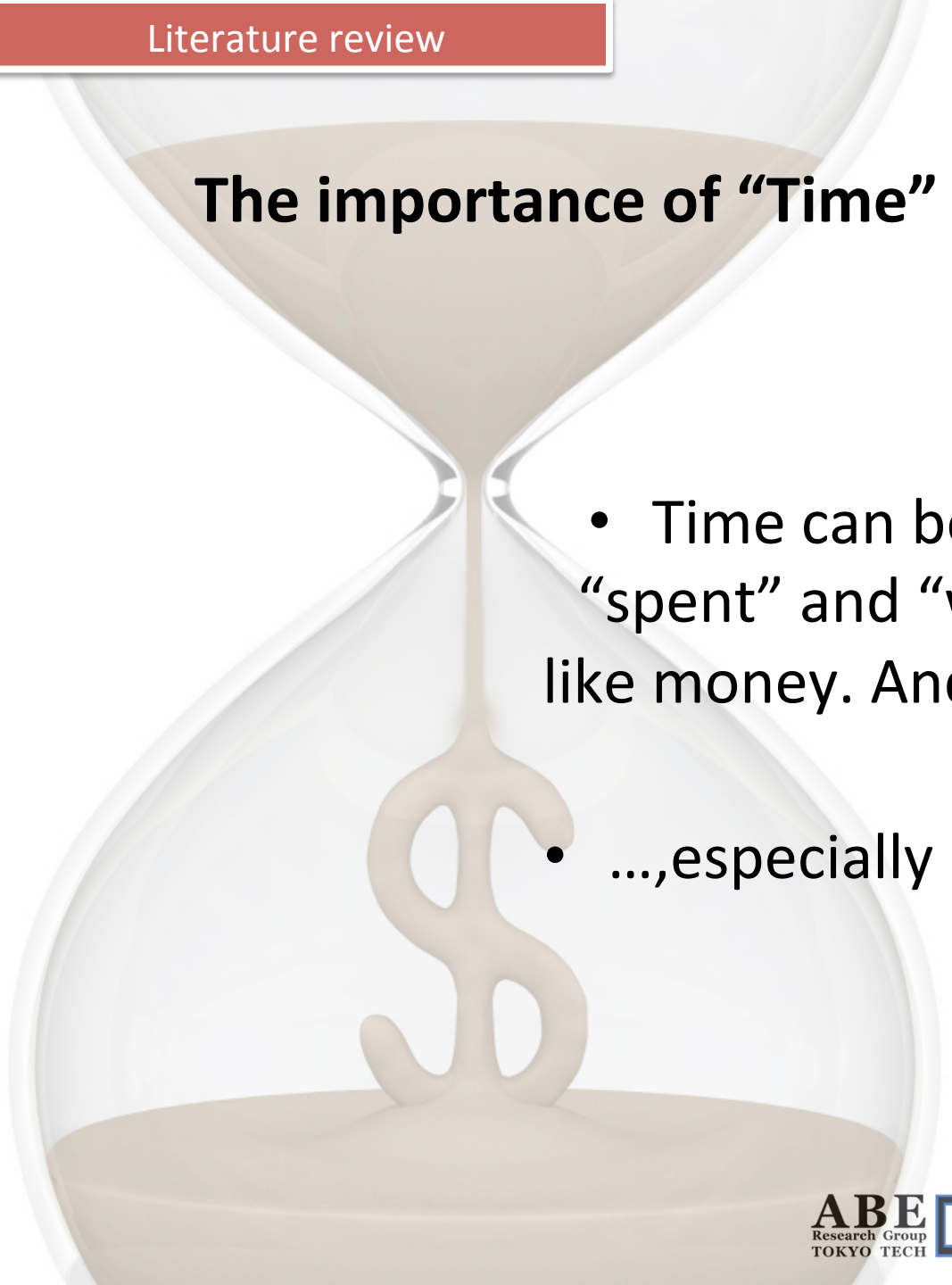
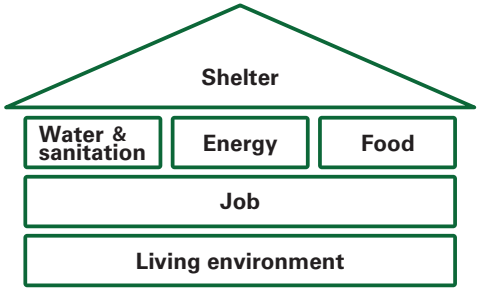


The importance of “Time” measurement in the Urban Life

- Time can be “saved”; it can also be “spent” and “wasted”. It is very much like money. And indeed, time is money – so people say.
- …,especially in industry and in urban life, time is ‘managed’

Source: Szalai, 1966

BNU Index
(Basic Needs of Urban-life)



Time use study

$$Daily_j = \sum_{i=1}^{n} i = \frac{\min(T_j, A_j)}{\max(T_j, A_j)} \quad (1)$$

$$Dimension\ value = Daily_j \times W_j \quad (2)$$

$$Dimension\ index = \left(\frac{Individual\ or\ Community\ Dimension\ value - Minimum\ Dimension\ value}{Maximum\ Dimension\ value - Minimum\ Dimension\ value}\right) \quad (3)$$

$$BNU\ index = \sqrt[6]{I_{Shelter} \cdot I_{Water\&sanitation} \cdot I_{Energy} \cdot I_{Food} \cdot I_{Job} \cdot I_{living\ environment}} \quad (4)$$

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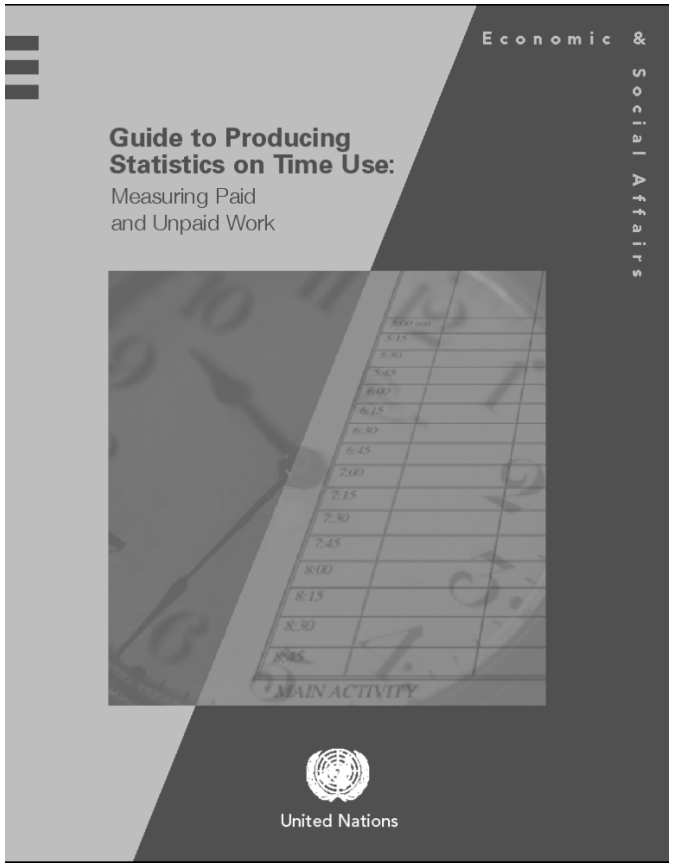
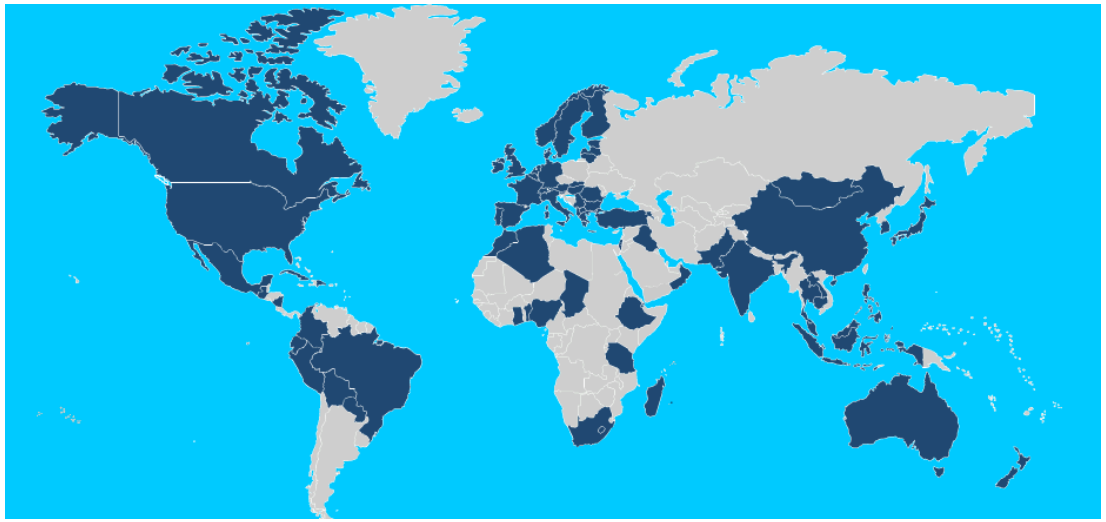
UNSTATS Allocation of time and time use

By leave behind diary, interview, or the combination of the two – depending on level of literacy of respondents





- About 24 developing countries have conducted data collection of time use (full scale and pilot)

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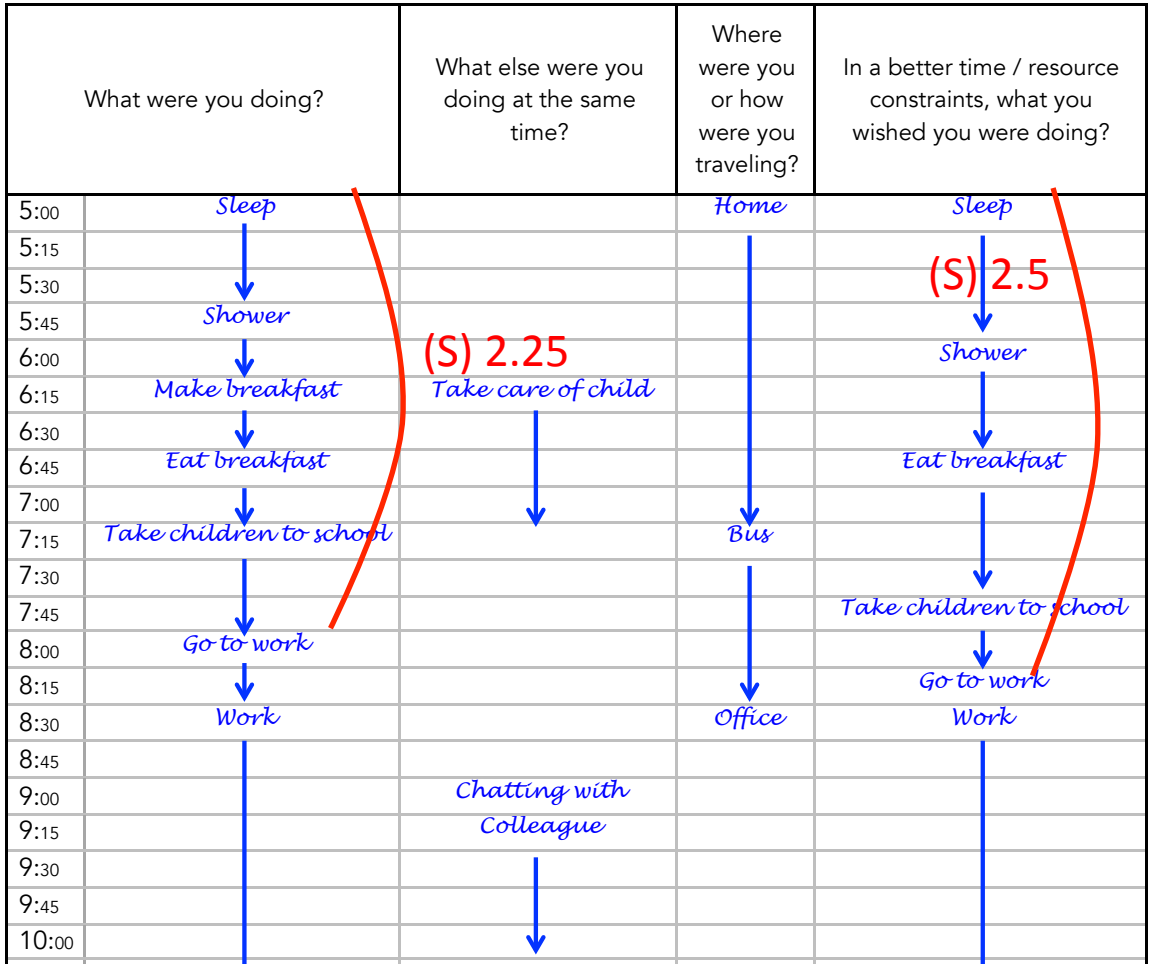
Time Use Diary

- Each activity in a day would require access to water and sanitation, energy, shelter, living environment, or is a form of job.
- Time required and desired of each dimensions are recorded.

Example

Morning



Facilitator use only

Water and sanitation (W)	Energy (E)	Food (F)	Job (J)	Shelter (S)	Environment (Env)	Remarks
				2.25/2.5		

Weighting

	Quality (non-time qualities) checklist		
BNU Dimension	Standards	Available? Yes (✔) No (✗)	Weighting values (A/B/C)
Shelter	Has renewable energy technology installed for self electricity supply		
	Has proper insulation or airflow, allowing minimum consumption of energy for cooling or heating		
	Clean and do not become host of disease carrier animals (rats, cockroach, mosquito, etc)		

Valuing weight:

A = 100% weight = 3 Yes (✔)

B = 66.67% weight = 2 Yes (✔) 1 No (✗)

C = 33.34% weight = 1 Yes (✔) 2 No (✗) or 0 Yes (✔) 3 No (✗)

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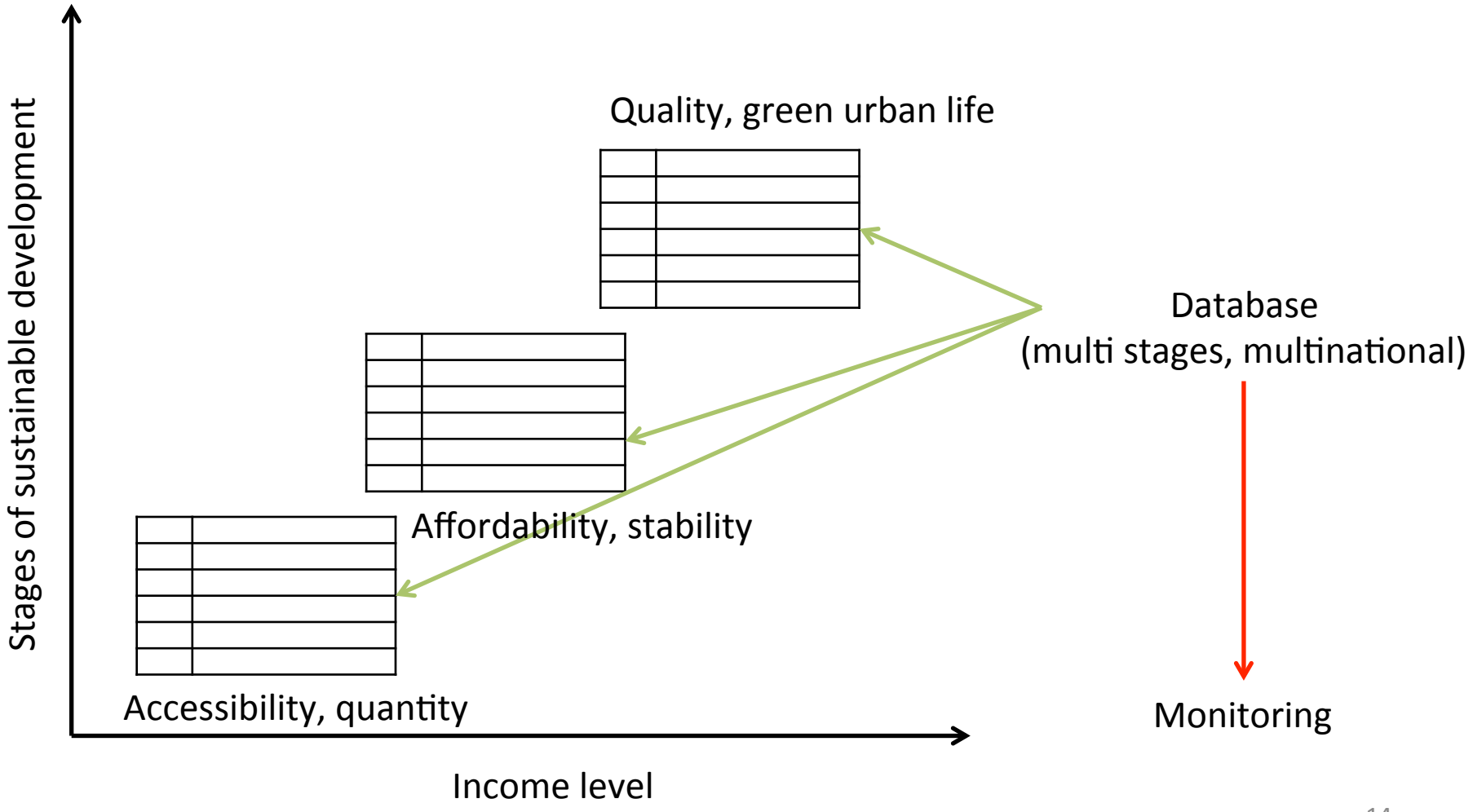
Future development of BNU for monitoring of SDGs progress



Thank you!

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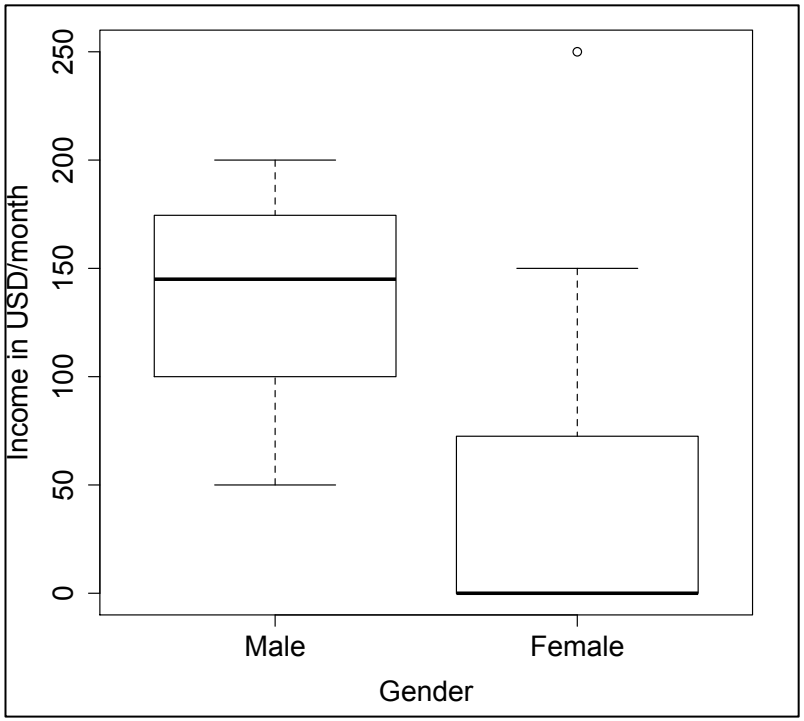
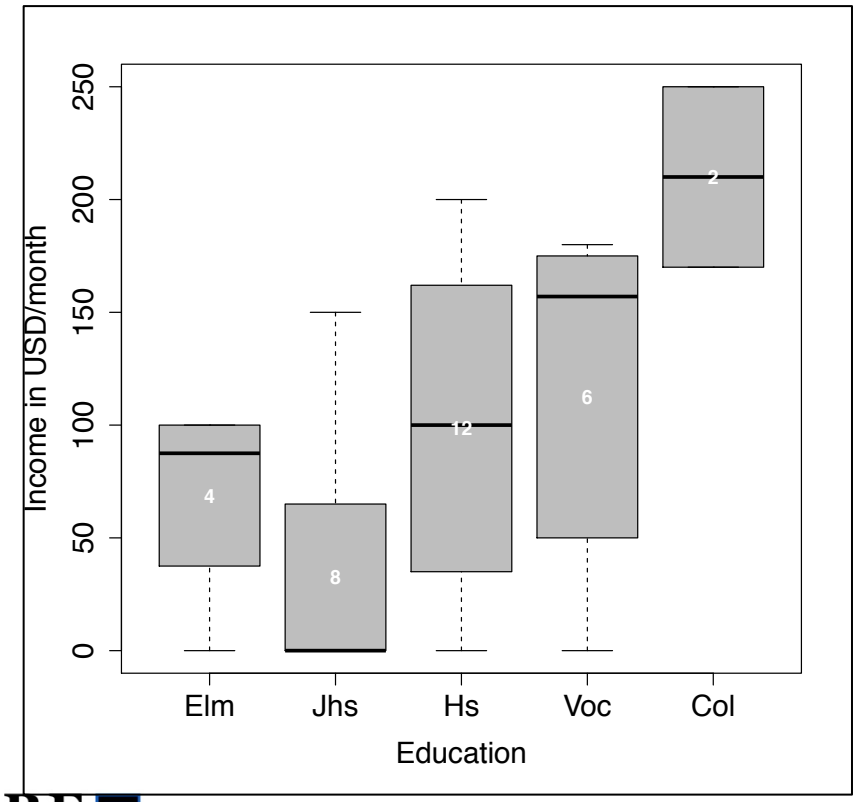
Surabaya community Workshop: Participants Socio-economic attributes



- Female participants have lower economic income. Majority is family labor
- Female who financially earns, owns a small shop in her home
- Outliers are; a women who completed college, she earns more than the average men participants

- Among participants, those who completed more than primary education, earn more



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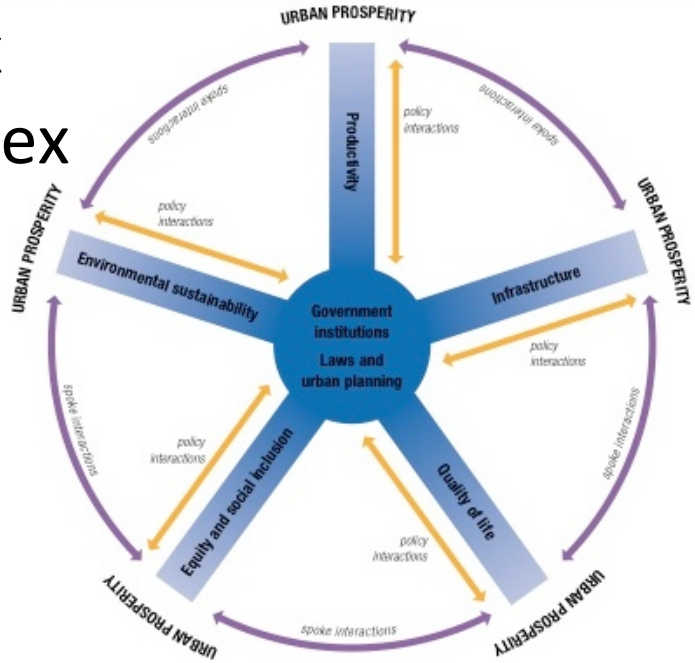
Source: UN Habitat, 2012

BNU in City Prosperity Index (CPI)

Where BNU fits in the City's Wheel of Prosperity and how it complies with the recommended principals of a good city measuring tool

BNU is related to the following dimensions in CPI:

- Quality of life index
- Infrastructure development index
- Equity and social inclusion index
- Environmental sustainability index



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Advantages of BNU

- BNU has the potential to comply with the following principals of a city's prosperity measuring tool:
  - Use soft indicators and qualitative information
  - A communicative and learning framework
  - Tracking progress and change
  - Benchmarking and cross-comparison
  - Exploring co-variations and interactive effects

(as recommended by Wong, 2014)

Time Use diary

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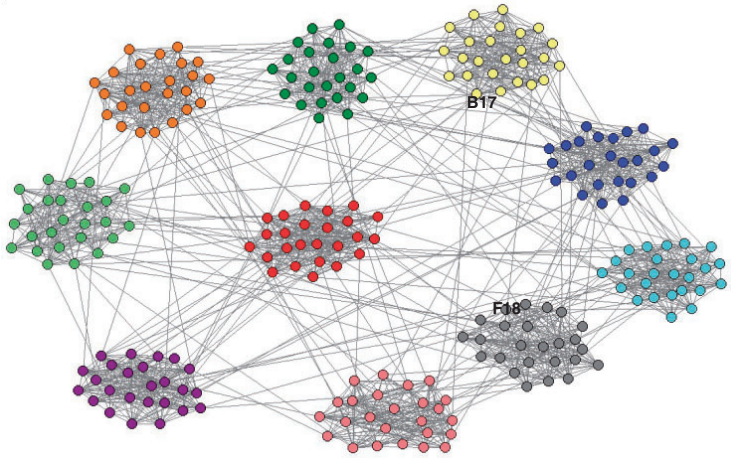
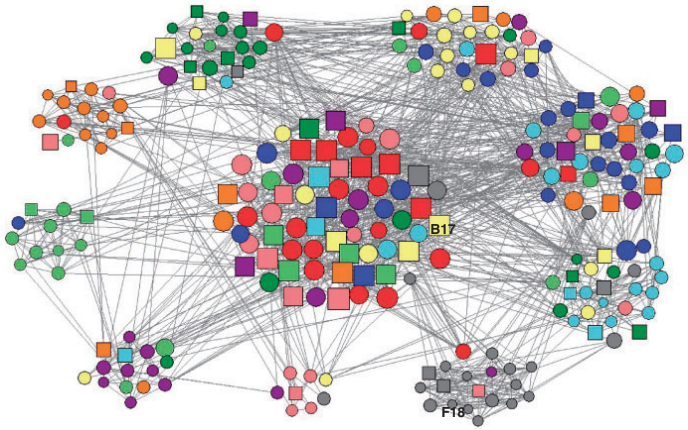
Room for input and suggestions

Welcoming suggestions from experts

- Weighting approach / methodology for measuring quality (clean energy, clean technology use, energy efficiency)
- Data collection from various cities
- Continuous data collection and bank of database
- Grading levels of development
- Categorizing the diverse activities into comparable and meaningful groups

The role of Cities in economic development





Source: Spencer, 2011

Agglomeration economies :

- Cost advantages to producers and consumers from location in cities and towns, which take the forms of urbanization economies and localization economies

Urbanization economies

- Agglomeration effects associated with the general growth of concentrated geographic region

Source: Harris-Todaro and Smith,2012

- The relative or absolute size of urban population often serves as a convenient proxy for agglomeration economies. This in turn, can help to stimulate growth and development

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Source: Bruelhart and Sbergami, 2009

What kind of principles should a good city monitoring/measuring tool have?

Principles	Definition
Consistency and comparability	Data have to be collected on a common spatial and temporal basis, under a clearly identified set of definitions
Tracking progress and change	Indices are constructed in a way that will allow policy makers and stakeholders to track changes
Benchmarking and cross-comparison	Meaningful interpretation of a city's indicator values can be enhanced by making reference to performance of other cities that share similar socio-economic and political conditions
Multi-units of analysis	Due to the complexity of urban change, it is important to develop a multi-spatial framework to provide flexible analytical structure for assessing city performance
Exploration of co-variations and interactive effects	There is a need to provide sufficient details across different aspects of urban prosperity to facilitate analysis of co-variations and interactive effects across different dimensions of prosperity. (recommended: PCA and cluster analysis)
Use soft indicators and qualitative information	Analysis of indicator and index values will require the use of qualitative data to assess progress or to enrich interpretations. (recommended: systematic commentaries/pictures)
A communicative and learning framework	To embed the tool into urban planning and policy making processes, it will require the participation of a wide range of urban partners and stakeholders.

(Source: Wong, 2014)