



Klimapolis – Inaugural Lecture

Science for Accountable Urban Governance

Dr. Cathrin Zengerling
HafenCity University Hamburg
USP/IAG, São Paulo, 24 May 2019

HCU

HafenCity University
Hamburg
Dr. Cathrin Zengerling, LL.M.

Why Cities?

Why Cities?

Factual
Responsibility

75% of global
energy and
material flows
are consumed
in cities

Why Cities?

Factual
Responsibility

Political
Mandates

75% of global
energy and
material flows
are consumed
in cities

SDGs
UN Habitat III
EU
City networks

11 SUSTAINABLE CITIES
AND COMMUNITIES



16 PEACE, JUSTICE
AND STRONG
INSTITUTIONS



Why Cities?

Factual
Responsibility

Political
Mandates

Potential
Effect

75% of global
energy and
material flows
are consumed
in cities

SDGs
UN Habitat III
EU
City networks

75% of the
global urban
population
live in only 25
states

Why Cities?

Factual
Responsibility

Political
Mandates

Potential
Effect

New Role in
Int. Politics

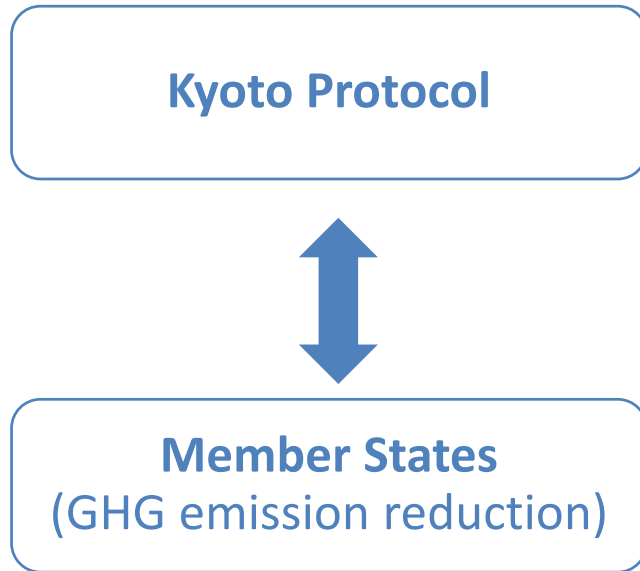
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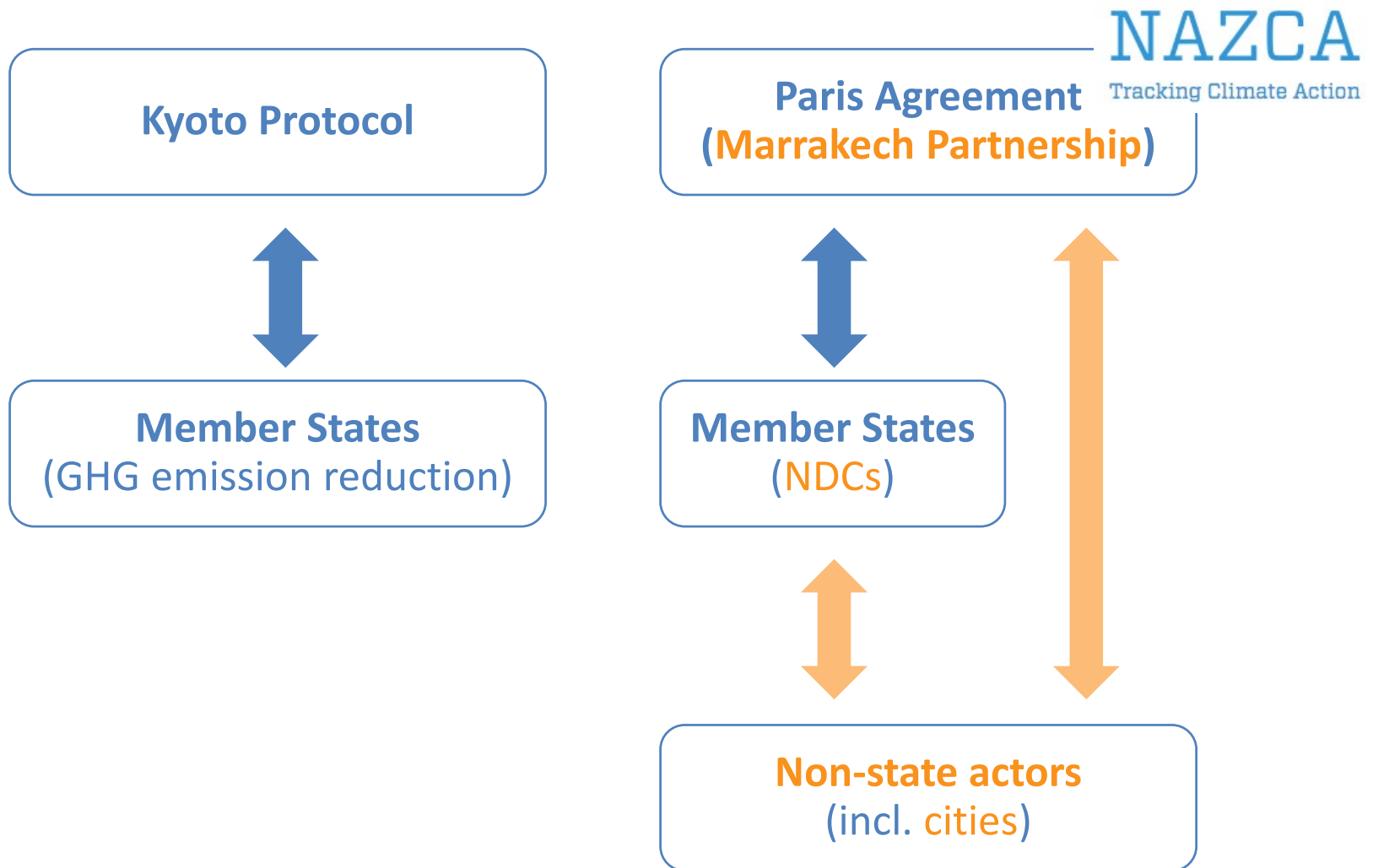
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UNFCCC
Marrakech
Partnership

Cities in the Climate Regime

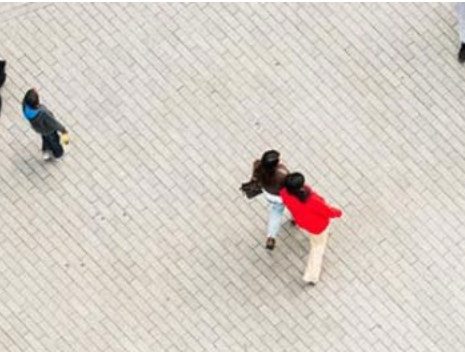


Cities in the Climate Regime



NAZCA

Tracking Climate Action



CITIES (1)


São Paulo
Brazil

REGIONS (1)

São Paulo (State)
Brazil


INDIVIDUAL ACTIONS (3)


Reduce CO2e emissions from the community by 30% by 2020 based on 2005 levels

 EMISSIONS REDUCTION




Launched a program aimed at powering the entire public transport system with renewable fuels by 2018


 RENEWABLE ENERGY

 TRANSPORT



Passed mandatory legislation for solar hot water systems to cover at least 40% of energy needs for all new buildings

 RENEWABLE ENERGY

 BUILDING



Search

See who's taking action



Browse

2,508
CITIES

209
REGIONS

2,138
COMPANIES

479
INVESTORS

238
CSOs

COOPERATIVE
INITIATIVES

12,549 TOTAL COMMITMENTS

Join

2018 IPCC Cities and Climate Change Conference

COMMENT

NEUROSCIENCE A gripping personal journey to slumberland **p.26**



FILM Bollywood biopic lauds inventor of affordable sanitary towels **p.27**

CULTURE An appreciation of Ursula K. Le Guin, titan of science fiction **p.28**

POLICY Too many studies conflate risk and resilience – they are very different **p.30**



DENNIS M. RIVERA/PHOTO/THE WASHINGTON POST/GETTY

The coastal city of San Juan in Puerto Rico was flooded after Hurricane Maria hit in September 2017.

Six research priorities for cities and climate change

Xuemei Bai and colleagues call for long-term, cross-disciplinary studies to reduce carbon emissions and urban risks from global warming.

Bai, X., Dawson, R. J., Üрге-Vorsatz, D., Delgado, G. C., Barau, A. S., Dhakal, S., ... & Schultz, S. (2018). Six research priorities for cities and climate change. *Nature* 555, 23-25.

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1. Expanding observations

- Quantity and quality of urban data collected
- Reliable GHG inventories

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1. Expanding observations

- Quantity and quality of urban data collected
- Reliable GHG inventories

“It is crucial to track the origins and types of **air pollution with climate effects** — including methane, ozone, black carbon and aerosols — because reducing these is of benefit to **public health** as well as to **climate mitigation**.”

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1. Expanding observations
2. **Understanding climate interactions**



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“We need to know how **urban morphologies, building materials and human activities** affect **atmospheric circulation, heat and light radiation, urban energy and water budgets.**”

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1. Expanding observations
2. Understanding climate interactions
3. **Study informal settlements**



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2. Understanding climate interactions
3. **Study informal settlements**

“Models and analytical tools tailored to these communities need to be developed, because the approaches used in cities in the global north cannot be transplanted. **Data scarcity, informal socio-economic processes and limited local capacities** must be considered.”

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1. Expanding observations
2. Understanding climate interactions
3. Study informal settlements
4. **Harness disruptive technologies**
 - Digital revolution
 - Materials
 - Green infrastructure

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1. Expanding observations
2. Understanding climate interactions
3. Study informal settlements
4. Harness disruptive technologies
5. **Support transformation**

“Research and policy frameworks need to be developed to translate successful local innovations across cities.”

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1. Expanding observations
2. Understanding climate interactions
3. Study informal settlements
4. Harness disruptive technologies
5. Support transformation
6. **Recognize global sustainability context**

“A **systems approach** is needed to deliver on global climate change as well as the UN’s New Urban Agenda and Sustainable Development Goals. More needs to be known about interactions, trade-offs and synergies between urban processes and their impacts elsewhere. This **entails working across disciplines and governance silos.**”

Urban Metabolism and Accountable Governance

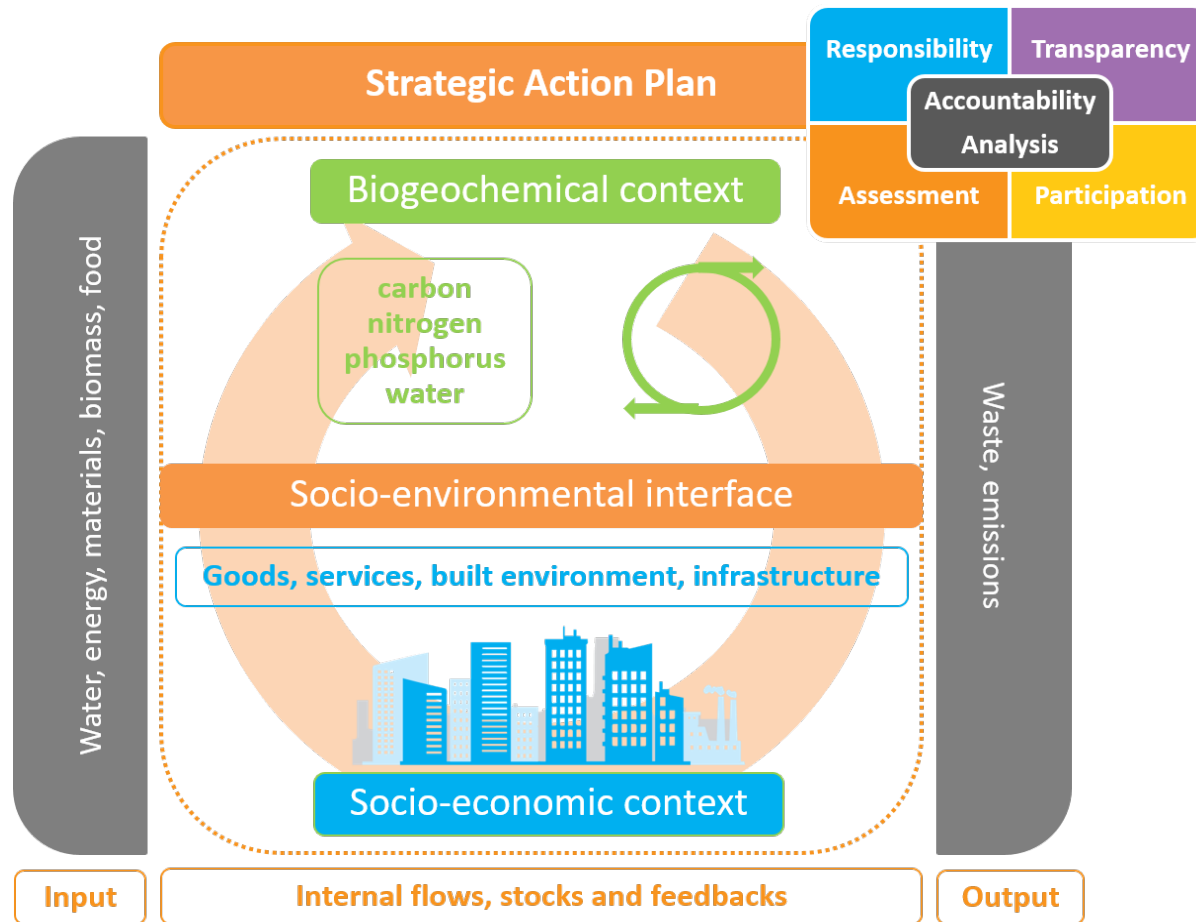


Figure 2: Urban metabolism framework and accountable strategic planning (Zengerling/Vignola) drawing on Ferrao & Fernandez (2013) and Musango et al. (2017).

Zengerling, C. (2019). Governing the city of flows: How urban metabolism approaches may strengthen accountability in strategic planning. *Urban Planning*, 4(1), 187-189.

Governance =

“... is the sum of the many ways **individuals and institutions, public and private**, manage their **common affairs**. It is a continuing **process** through which conflicting or diverse interests may be accommodated and co-operative action may be taken. It includes **formal institutions** and regimes empowered to enforce compliance, as well as **informal arrangements** that people and institutions either have agreed to or perceive to be in their interest.”

Carlsson, Ramphal, Alatas, & Dahlgren, Our Global Neighborhood, 1995

Accountability =



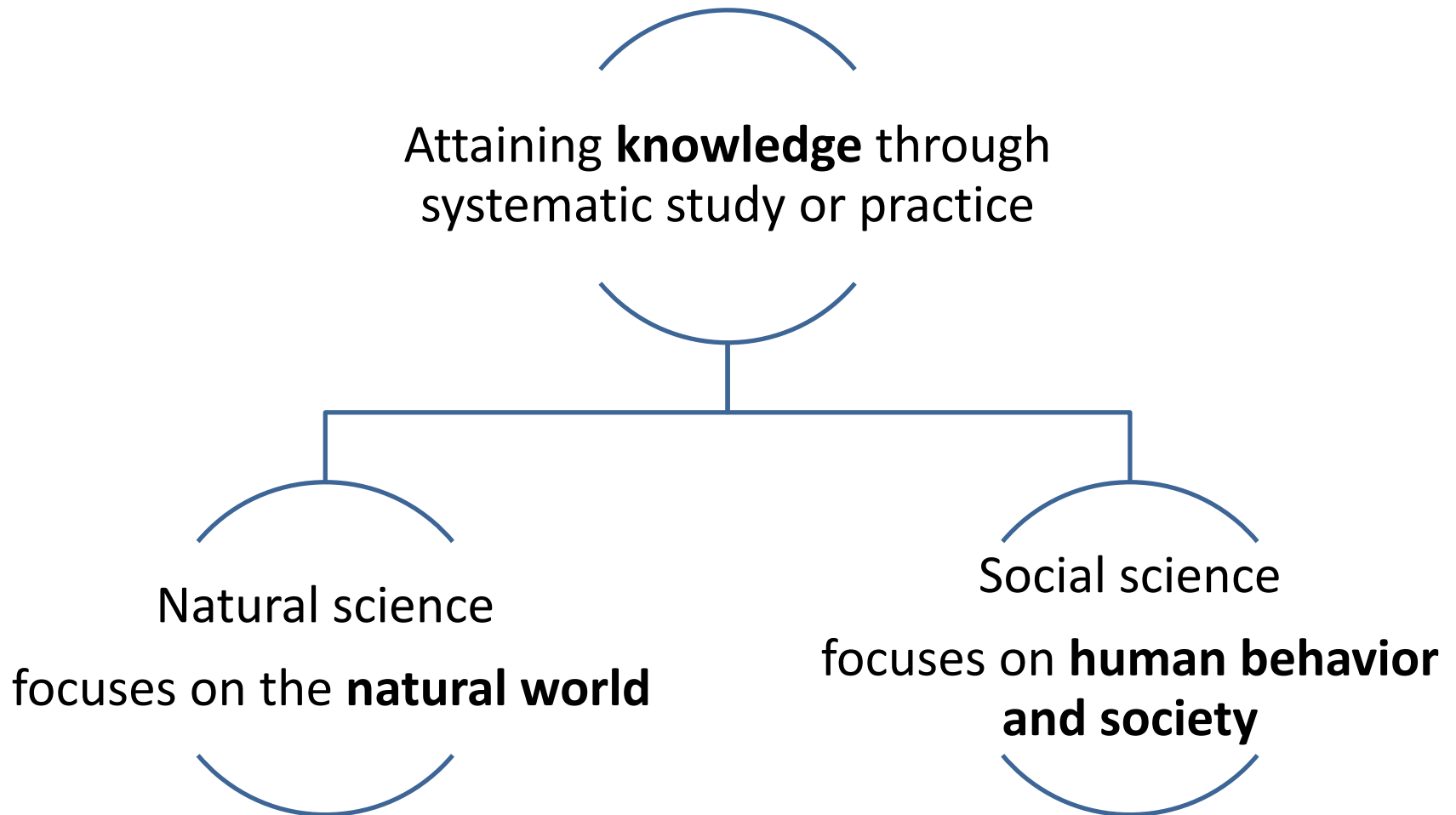
“the quality or state of being accountable; especially : an obligation or willingness to accept responsibility or to account for one's actions; being answerable, explainable”

SUSTAINABLE DEVELOPMENT GOAL 16

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

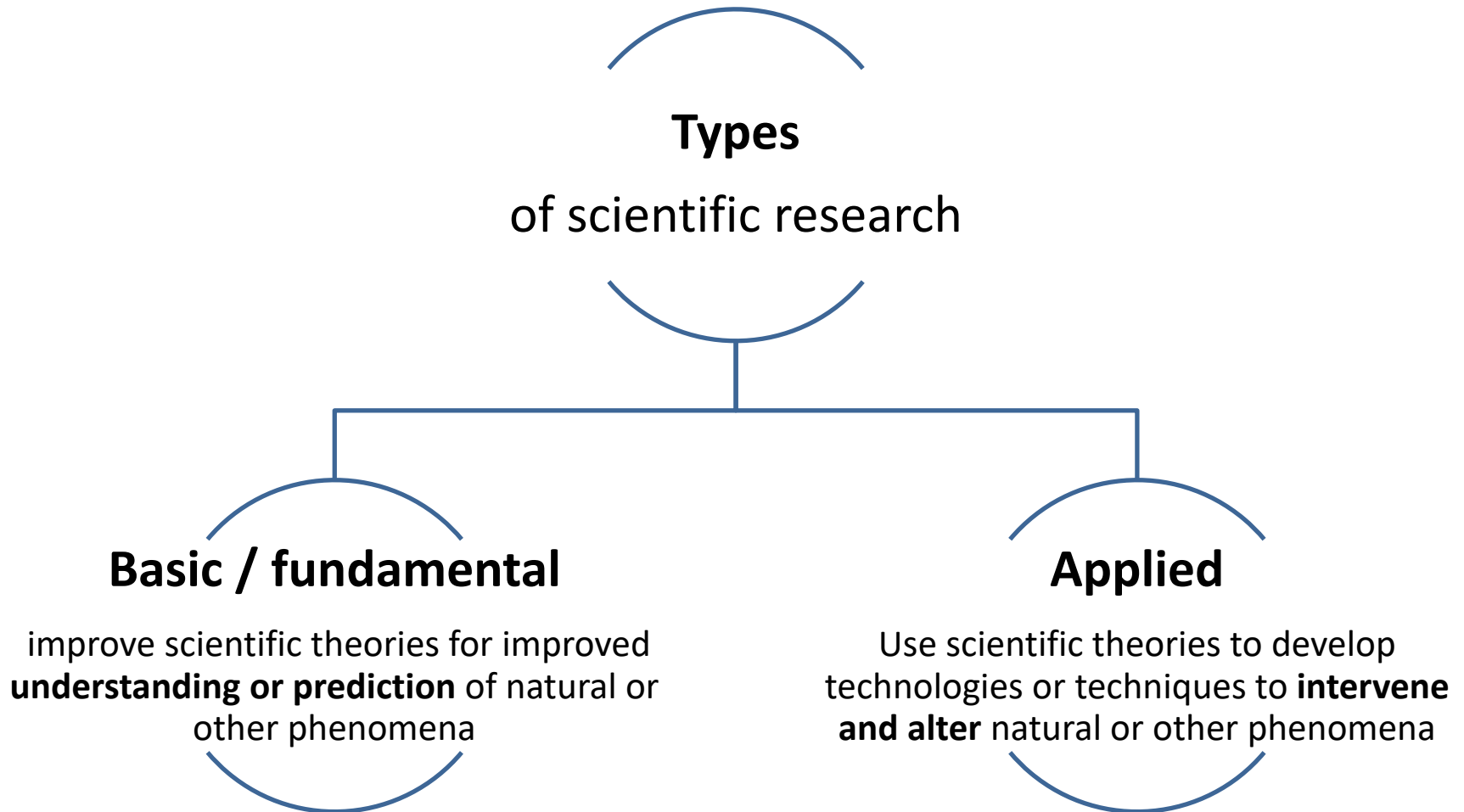


What is Science?

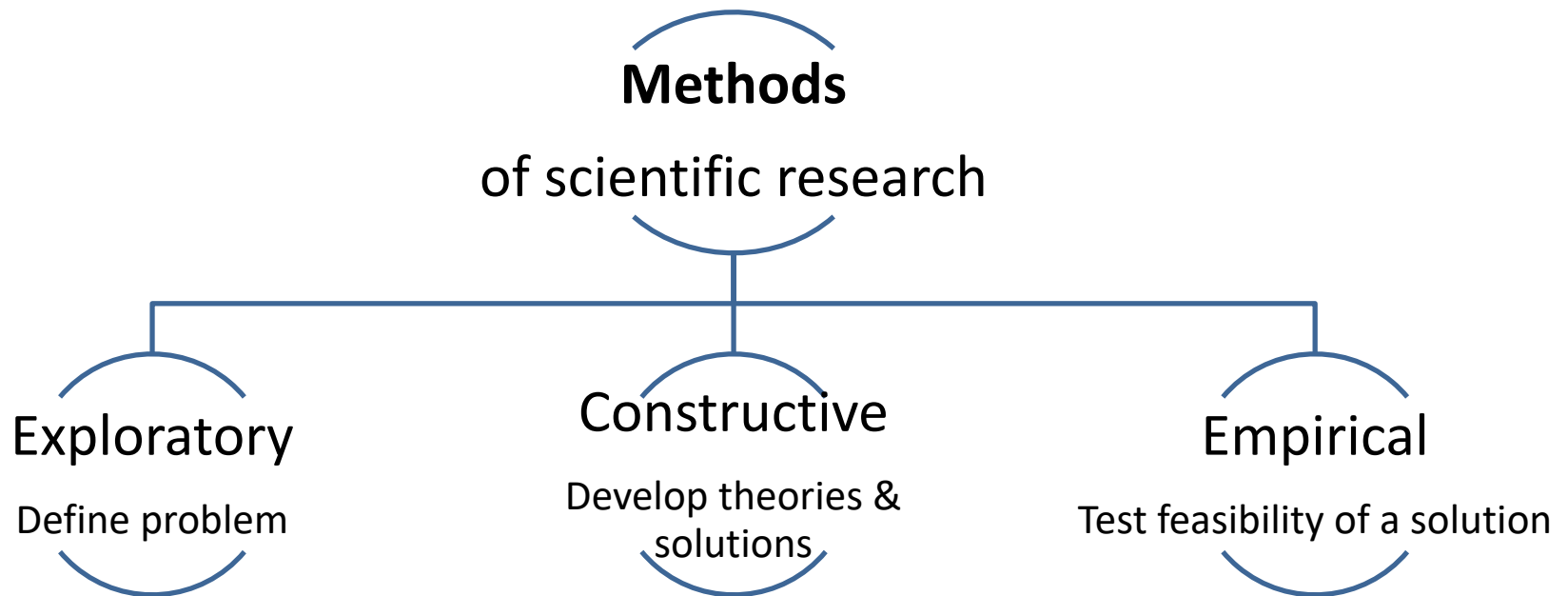


Webster's New Collegiate Dictionary

What is Science?



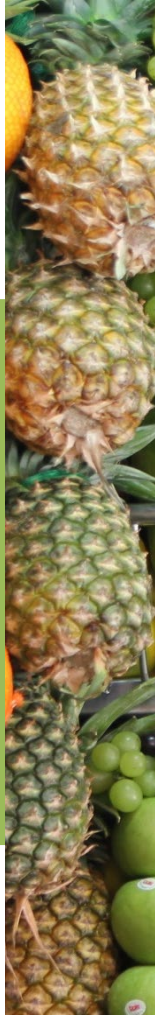
What is Science?



Forms of Research

Forms of Research

Disciplinary



Forms of Research



Disciplinary

Multidisciplinary

Forms of Research

Disciplinary

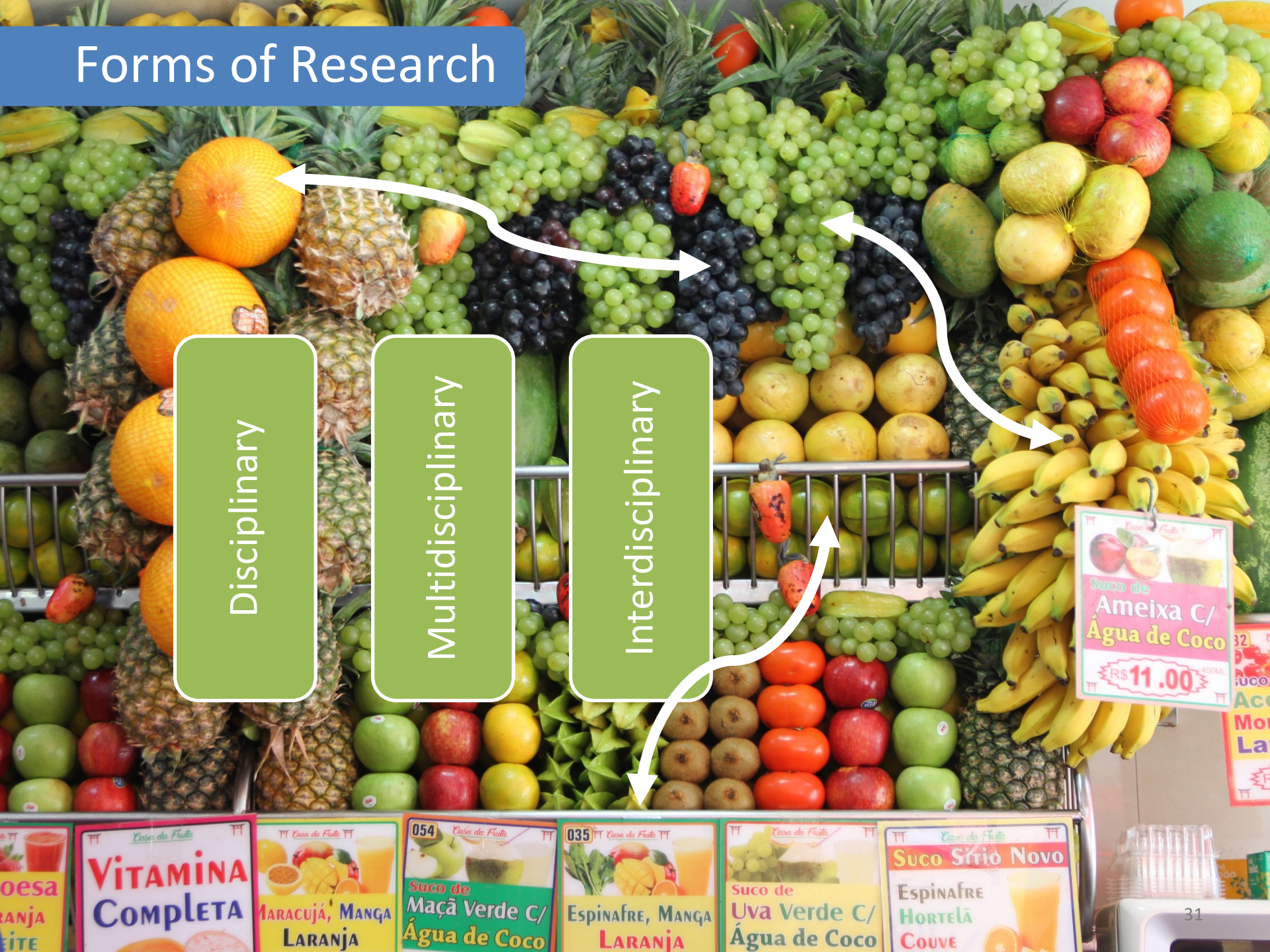
Multidisciplinary

Forms of Research

Disciplinary

Multidisciplinary

Interdisciplinary



oesa
LANJA
TEITE

VITAMINA COMPLETA

MARACUJÁ, MANÇA
LARANJA

054 Casa da Fruta
Suco de
Maçã Verde C/
Água de Coco

035 Casa da Fruta
Espinafre, MANÇA
LARANJA

Suco de
Uva Verde C/
Água de Coco

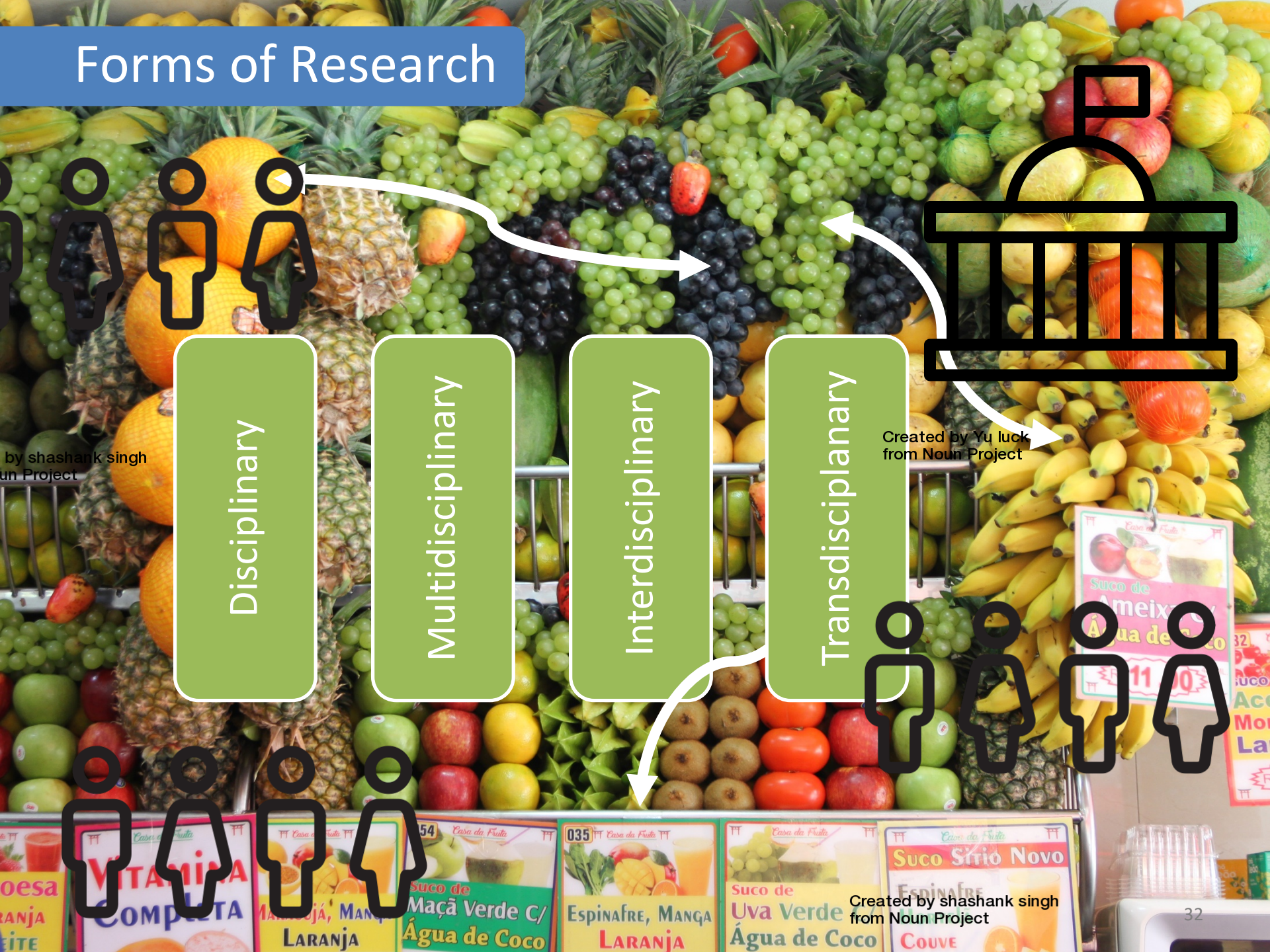
Suco Sírio Novo
Espinafre
HORTELÃ
COUVE

R\$ 11.00

32
Suco
Açaí
Morango
Laranja

31

Forms of Research



Disciplinary

Multidisciplinary

Interdisciplinary

Transdisciplinary



Created by Yu luck from Noun Project



Created by shashank singh from Noun Project

by shashank singh from Noun Project

Forms of Research

Disciplinary

Multidisciplinary

Interdisciplinary

Transdisciplinary

Transformative

Created by Made x Made
from Noun Project

Created by Made x Made
from Noun Project

Created by Made x Made
from Noun Project

Created by Made x Made
from Noun Project

Created by Made x Made
from Noun Project

Created by Made x Made
from Noun Project

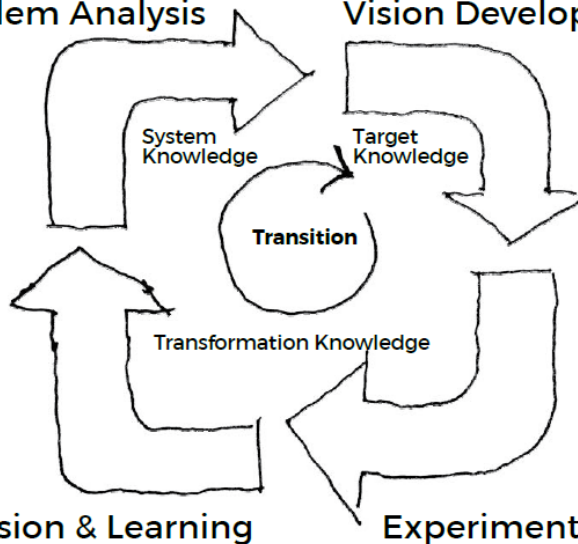
Forms of Research

„**Transformative science** characterizes a type of research that does not only observe and describe societal transformation processes, but that **actively initiates and catalyzes these processes.**

Therefore scientists are **actively involved in ongoing transformation processes in order to learn about them.**“

(Uwe Schneidewind 2015)

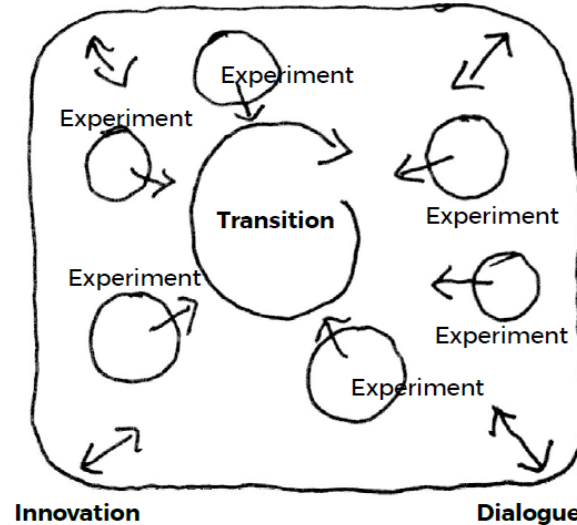
Problem Analysis Vision Development



Transition Cycle Approach

Source: Schneidewind/Singer-Brodowski 2013, p. 72

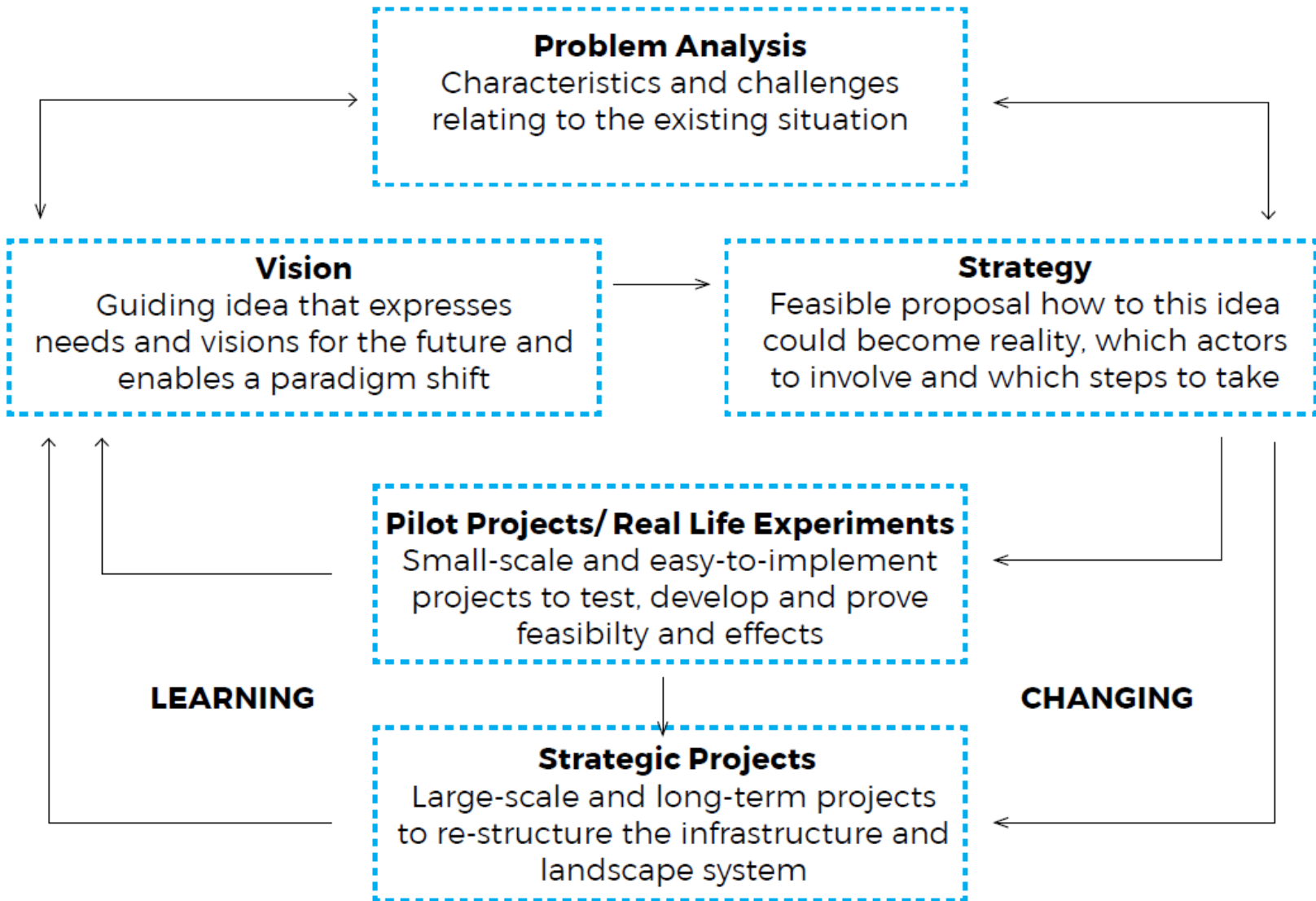
Participation Inspiration



(Felix Wagner, Armin Grunwald 2015)

Forms of Research

„Real Life Laboratory“ Approach in Design Research Practice



Example 1: The neighbourhood of short distances

HCU | HafenCity Universität
Hamburg

Komponier' Dir Dein Viertel!

Wir möchten Sie einladen, gemeinsam ein Wege- und Freiraumkonzept für das **Komponistenviertel** in Barmbek-Süd zu erarbeiten, das Ihren Bedürfnissen gerecht wird!



**FREIE FAHRT FÜR FUß UND RAD!
EIN FUß-, FAHRRAD- UND FREIRAUMKONZEPT
FÜR DAS KOMPONISTENVIERTEL**

P2 - 4. Semester - B. Sc. Stadtplanung
HafenCity Universität Hamburg

VERFASSER*

Behn, Celina (6036388)
Breese, Iver (6041853)
Bröske, Jan (6036353)
Cohrs, Alena (6039964)
Domke, Paulina (6039654)
Fraser, Annika-Laura (6039492)
Gataiantu, Jasmin (6039921)
Gergs, Antonia (6040415)
Nowack, Maren (6040458)
Prilop, Marieke (6040512)
Thümer, Leon (6040946)

BETREUUNG

Dr. Cathrin Zengerling
Dipl.-Ing. Stefan Kreutz

TUTORIN

Inken Reimer

ABGABEDATUM

08.09.2017

SCHUTZ

SCHUTZ VOR VERKEHR UND UNFÄLLEN – SICHERHEITSGEFÜHL

- Schutz für Fußgänger
- die Angst vor dem Verkehr nehmen



SCHUTZ VOR VERBRECHEN – SICHERHEITSGEFÜHL

SCHUTZ VOR UNANGENEHMEN SINNES

KOMFORT

ANGEBOTE FÜR FUSSGÄNGER

- genug Platz zum Gehen
- keine Hindernisse
- gute Bodenbeläge
- für alle zugänglich
- interessante Fassaden



SEHENSWÜRDIGES

- vernünftige Betrachtungsabstände
- freie Sichtachsen
- interessante Ausblicke



Abb. 7.20: Platzsituation vorher

Abb. 7.21: Platzsituation nachher

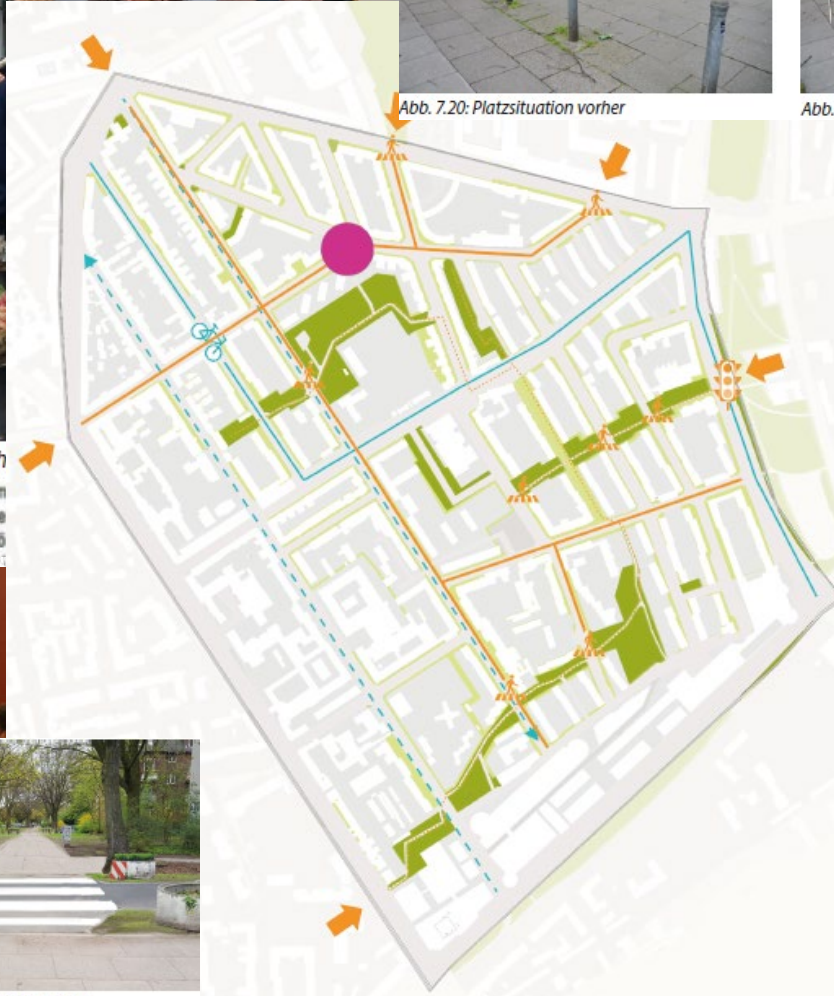


Abb. 5.2: Gespräch

- niedrige Lärm
- Straßenmöbe
- geschäftsfö

Neuer Blick auf alte Struktur

Angedachte Stadtplaner haben frische Ideen für ein Barmbek-Konzept



Das Urvich-Team
 GIBNET: Barmbeckerdekor...
 über das Urvich-Quartier...

...Gibnet...
 ...Urvich-Quartier...

...Urvich-Quartier...
 ...Gibnet...

Christoph Raftell im Gespräch mit Statistikerin...
 Offizier-Präsidenten...
 ...Gibnet...

Abb. 7.7: Straßenübergang vorher

Abb. 7.8: Straßenübergang nachher

Abb. 7.1: Das Gesamtkonzept im Überblick

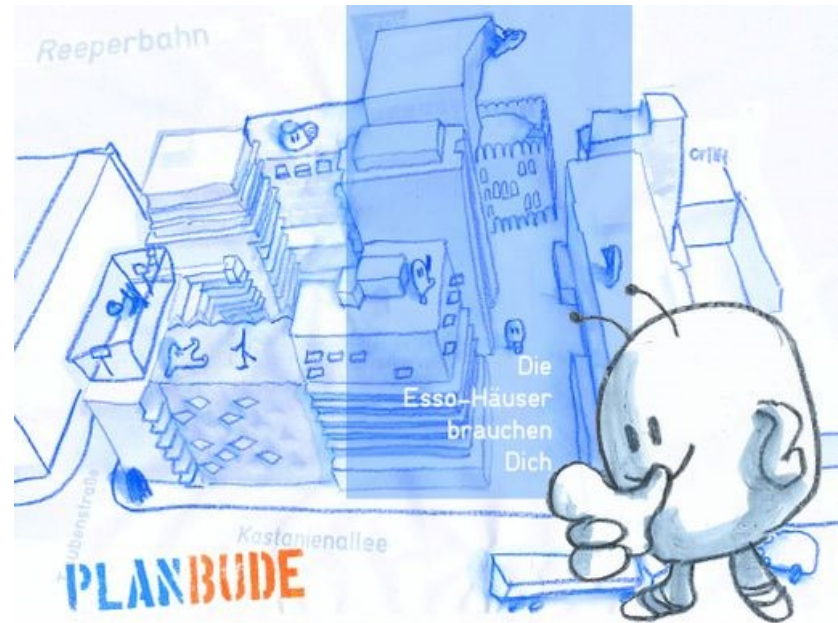


Abb. 4.2: Zentrale Orte im K

Example 2: PlanBude Hamburg St. Pauli



<https://planbude.de/>

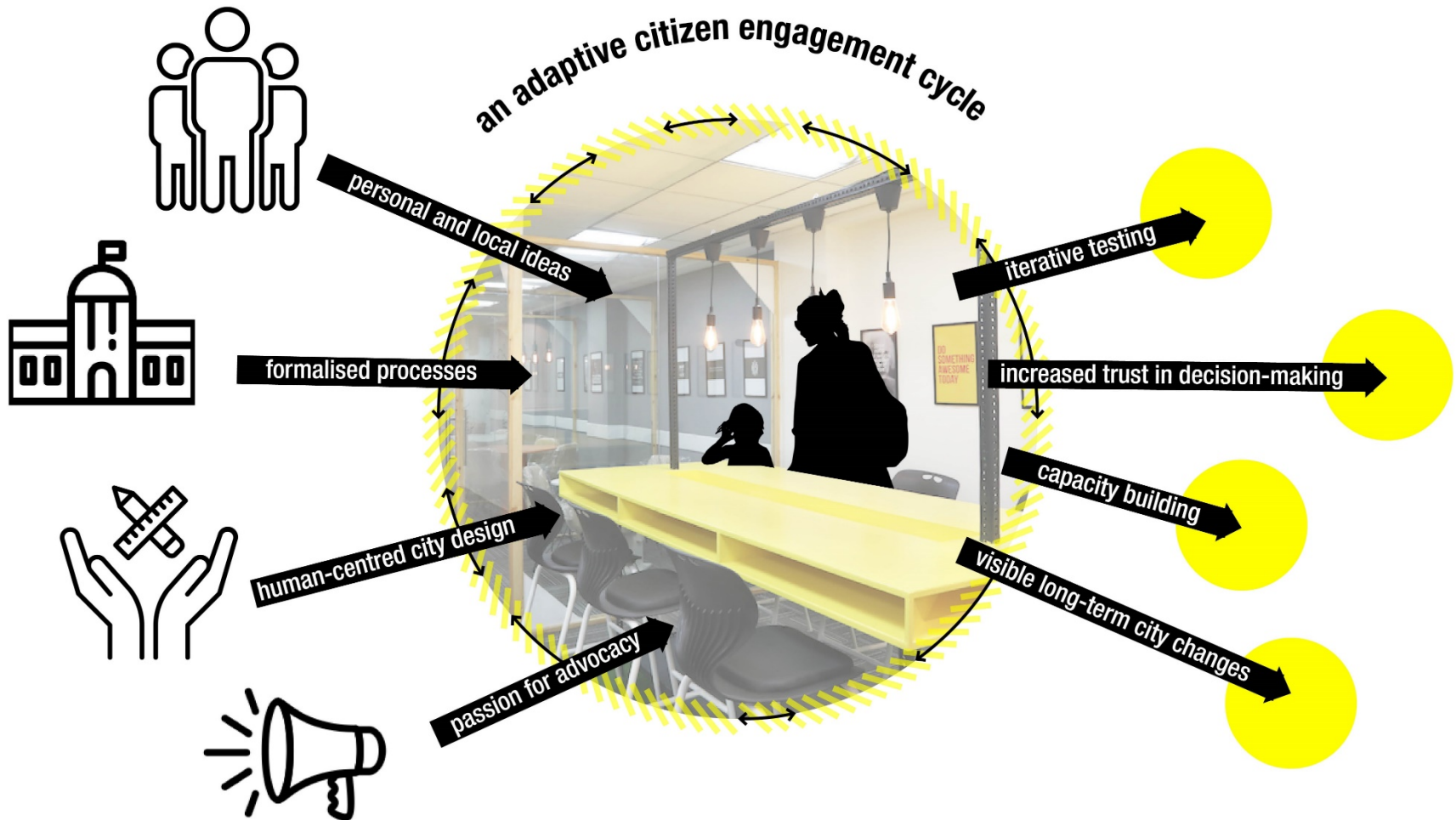


Example 3: ChangeMakerSpace



Bryony Simcox, Jan Carbonell, Mansi Parikh, Quan Nguyen Ha, Guillermo, Cathrin Zengerling, UNEASH SDG Innovation Lab, 2018

Example 3: ChangeMakerSpace



Bryony Simcox, Jan Carbonell, Mansi Parikh, Quan Nguyen Ha, Guillermo, Cathrin Zengerling, UNEASH SDG Innovation Lab, 2018

Science Caravan to Itaim Paulista







PREFEITURA DE SÃO PAULO

Prefeitura Regional
ITAIM PAULISTA





CHAMANDO A ATENÇÃO

SÁBADO, 04 DE MAIO.

8h30 às 11h30

Nós somos as crianças e funcionários da escola Dama Entre Rios Verdes e sua comunidade e hoje estamos unidos em uma ação de limpeza e protesto da Praça Mãe Preta e entorno. Se a “Cidade é Linda” que seja linda para todos nós, principalmente para os que trabalham nela e moram nos bairros de trabalhadores!

Queremos uma Praça linda e voltada para o lazer da comunidade, queremos um bairro bem cuidado, limpo, seguro e que atenda os interesses da nossa comunidade, por isso contamos com você para nos apoiar nesta ação, para cobrar do poder público seus deveres e para conscientizar a comunidade a não jogar lixo e entulho nos espaços públicos, bem como não deprestar o patrimônio público.

Juntos somos mais fortes!

Six main modes of urban governance

Self-governance

- Govern own activities

Provision

- Provision of certain services and resources

Regulation

- Local law-making and planning law / exerting local authority

Enabling

- Support, coordinate and incentivize activities with or of private businesses, NGOs, local communities and citizens

Partnership

- Cooperation with other stakeholders

Experiment

- Implement and test local (temporary) interventions



Thank you!