Faculty of Design

2015

Systemic Design for food sustainability: Interpretation of real cases and reflection on theories

Barbero, Silvia

Silvia Barbero, PhD

SYSTEMIC DESIGN FOR FOOD SUSTAINABILITY

interpretation of real cases and reflection on theories

POLITECNICO DI TORINO

Department of Architecture and Design

Relating Systems Thinking and Design 4 | Banff Centre, Banff, Canada | September 2nd, 2015

WHO *I am*

\ researcher in ***systemic design*** at Politecnico di Torino

\ author of scientific articles and books on international spread as ***ecodesign*** (HF Ullmann, 2009) and ***systemic energy networks*** (Lulu Enterprises, 2012)

\ adjunct professor in ***environmental requirements of industrial products*** at Design and Visual communication graduation course

\ responsible for the ***design university curriculum counseling***

\ co-founder of no-profit association ***plug***

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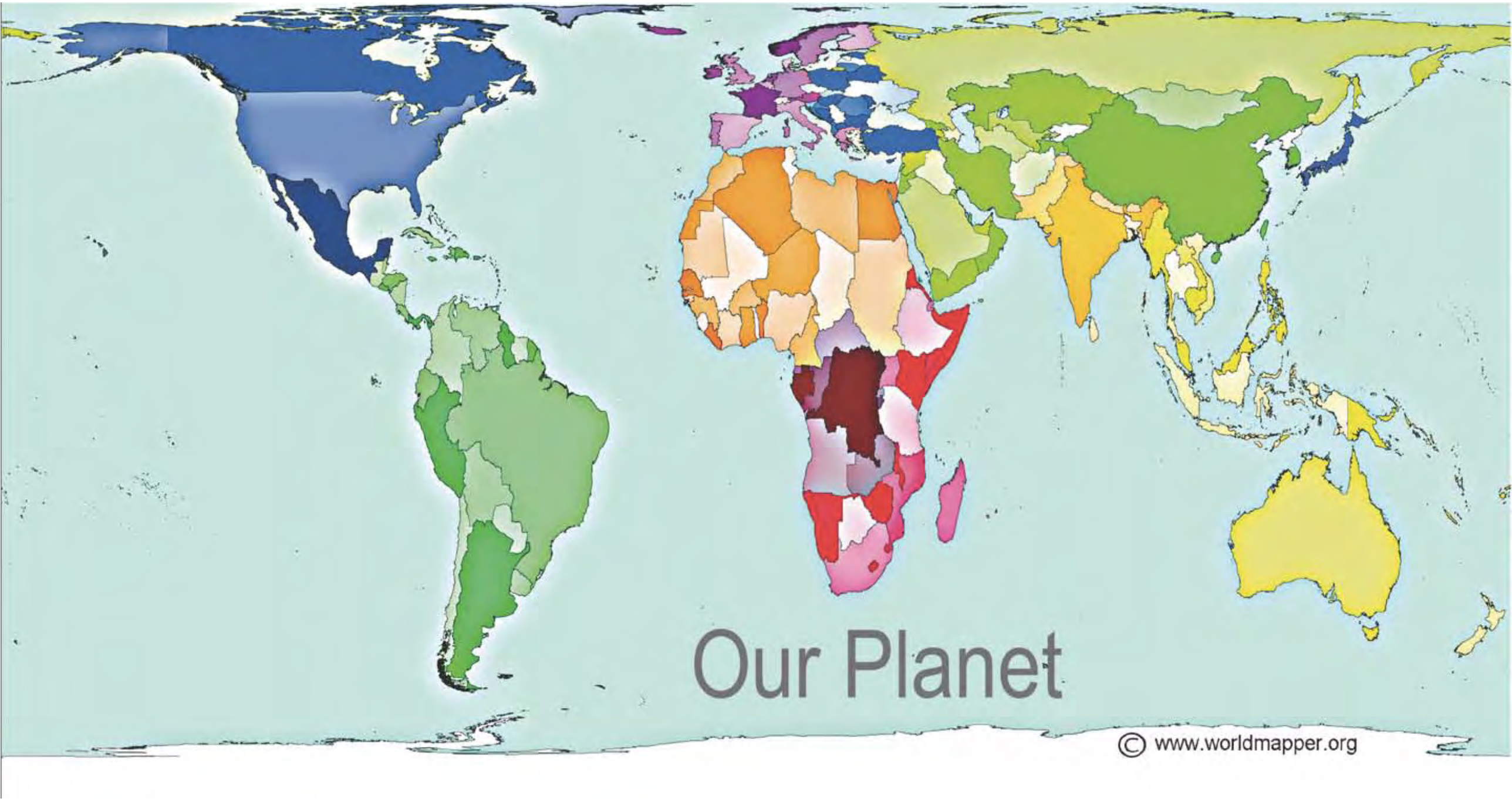
MOTIVATION *& challenges*

food

\ everyone have daily experience on it
\ individual low level of awarness
\ geo-political unballance
\ “index” for the sustainability of a community

MOTIVATION *& challenges*



MOTIVATION *& challenges*

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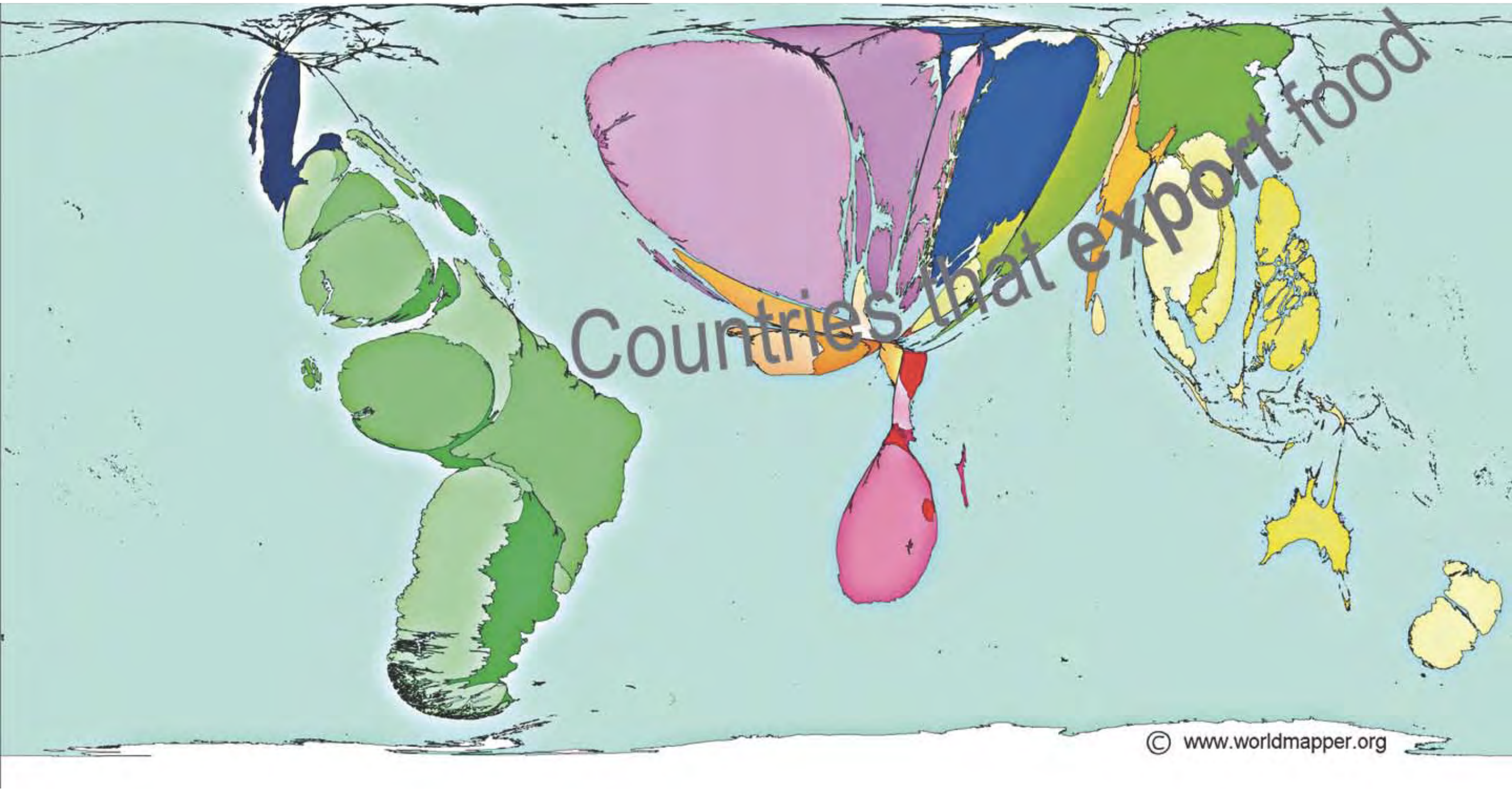


MOTIVATION *& challenges*

production

\ intensive farming
\ use of pesticides and chemicals
\ food security
\ genetically modified organisms (GMOs)

MOTIVATION *& challenges*

production

transformation

\ long-lasting meals
\ sanification
\ sophistication and food fraud
\ loss of food culture
\ food losses

MOTIVATION *& challenges*

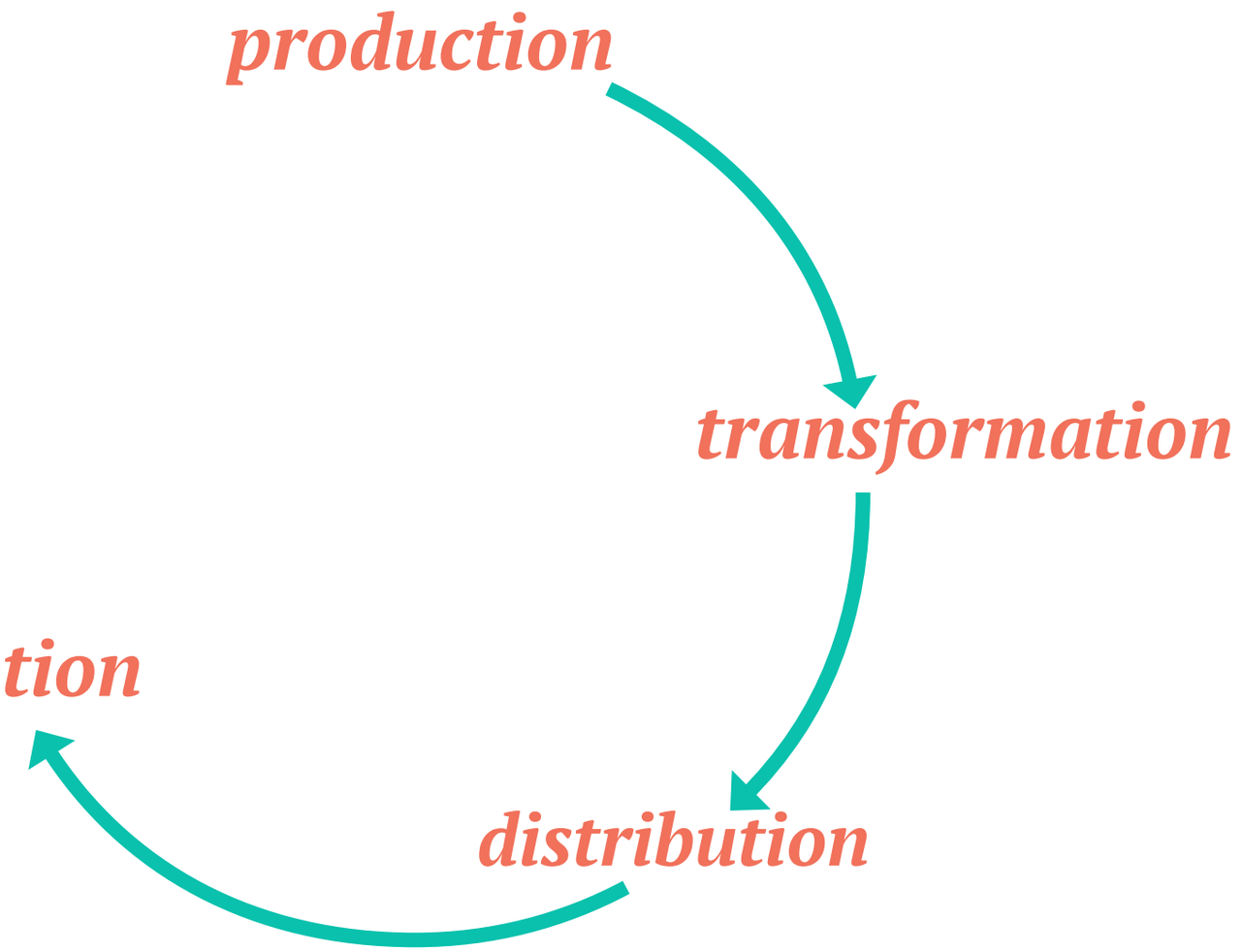
production

transformation

distribution

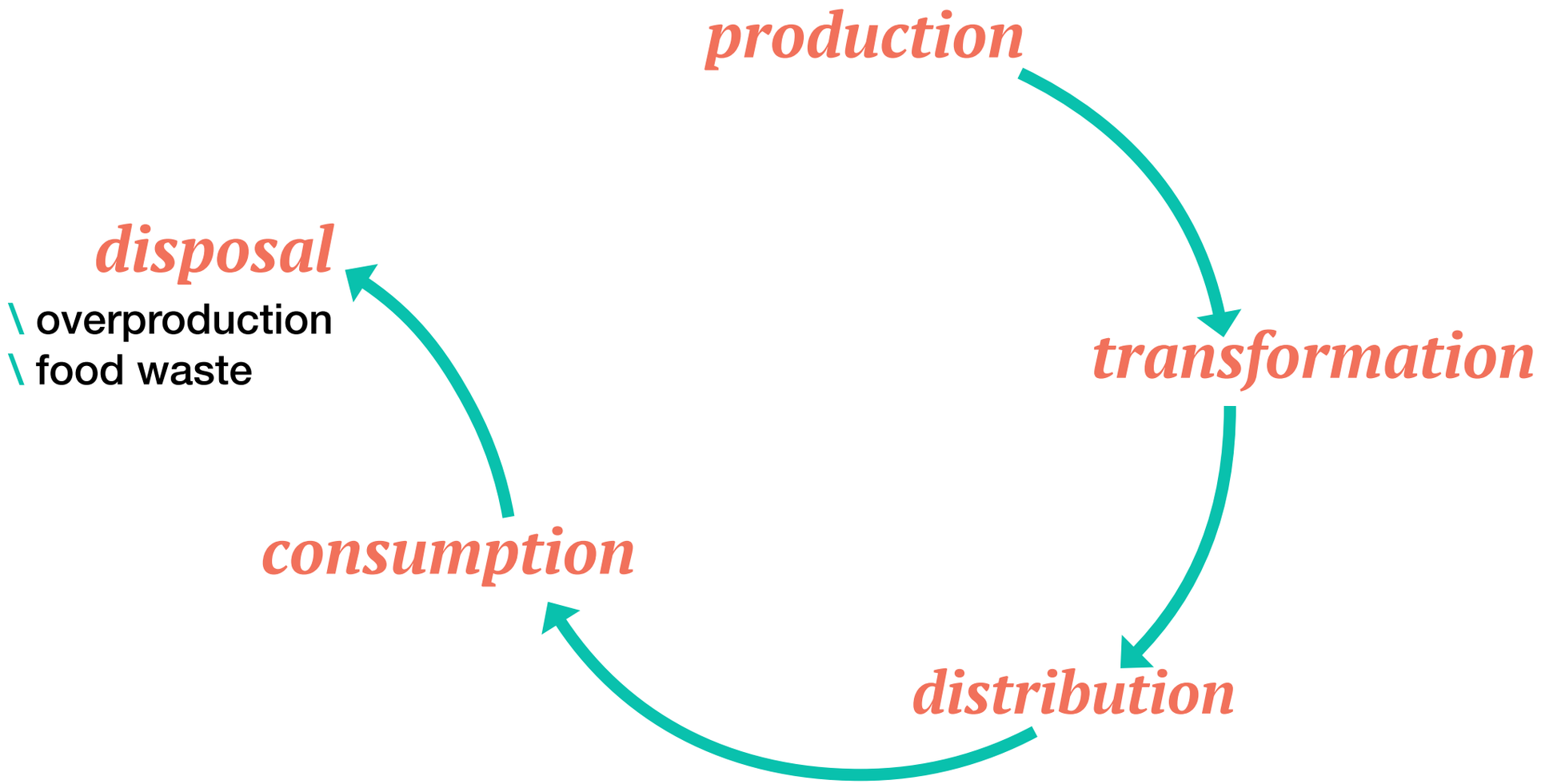
\ global scale
\ vertical distribution system
\ cold chain
\ loss of seasonal food

MOTIVATION *& challenges*



\ loss of culinary traditions
\ demand for low-cost food
\ unawareness
\ obesity vs malnutrition

MOTIVATION *& challenges*



MOTIVATION *& challenges*

how systems and complex theories
applied to food sector
can contribute to wellbeing for all?

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BACKGROUND *& methodolgy*

complexity theories

\ **living systems continually draw upon external sources of energy and mantain a stable state of low entropy** (Schrödinger, 1946)
\ **general systems theory** (von Bertalanffy, 1968)
\ **artificial systems can imitate the natural ones** (Pisek & Wilson, 2001)
\ **cluster theory** (Porter, 1990)
\ **industrial ecology** (Frosh & Gallopolous, 1989)
\ **industrial symbiosis** (Chertow, 2000)

BACKGROUND *& methodolgy*

complexity theories **HELP THE MANAGEMENT OF THE ENTIRELY FOOD SYSTEM**

BACKGROUND *& methodolgy*

complexity theories **HELP THE MANAGEMENT OF THE ENTIRELY FOOD SYSTEM**

the lenses to analyse different complex situations of the presented case studies

BACKGROUND *& methodolgy*

design approaches

\ creative reconfiguration of a design concept on a situation with systemic integration (Buchanan, 1992)
\ inter- and trans-disciplinarity (Chertow, Ashton, & Kuppali, 2004)

BACKGROUND *& methodolgy*

design approaches **HELP THE PLANNING OF DIFFERENT DIVERGENT ELEMENTS**

BACKGROUND *& methodolgy*

design approaches

HELP THE PLANNING OF DIFFERENT DIVERGENT ELEMENTS

the ways to formulate the new projects presented

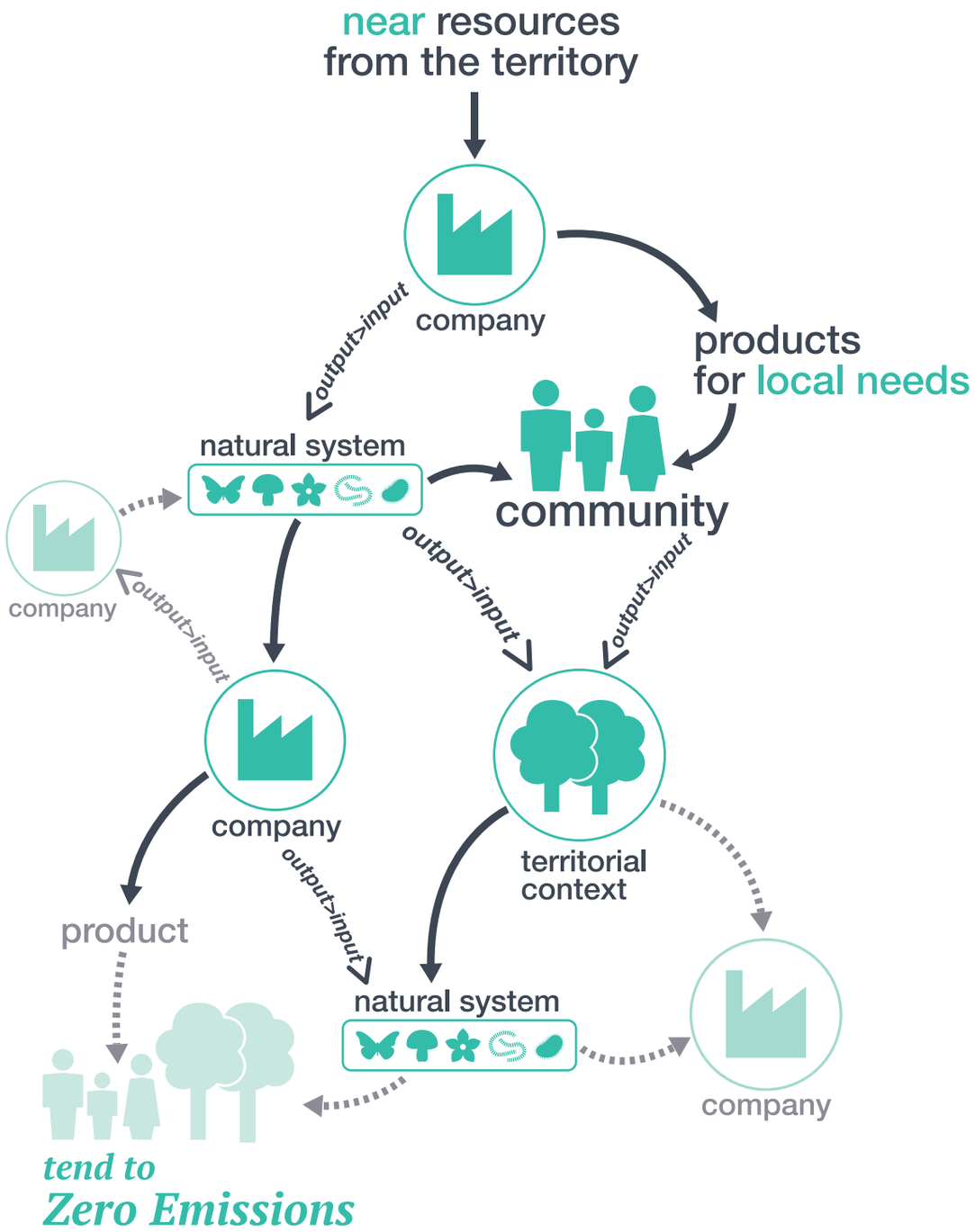
BACKGROUND *& methodolgy*

complexity theories
MANAGEMENT

design approaches
PLANNING

Systemic Design

SYSTEMIC DESIGN *theory*



Balanced involvement of all stakeholders

Local networks

Wastes are resources

MODEL *innovation*

LINEAR PRODUCTION MODEL

vs

SYSTEMIC PRODUCTION MODEL

Competition **Collaboration**

evolution

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EXPERIMENT *design*

Last ten years of research projects:

\ **EN.FA.SI.** (2012-2014)
\ **Agrindustria** (2006-2015)
\ **Lavazza** (2006-2014)
\ **Poult** (2014-2018)

\ **Fa bene.** (2012-2015)
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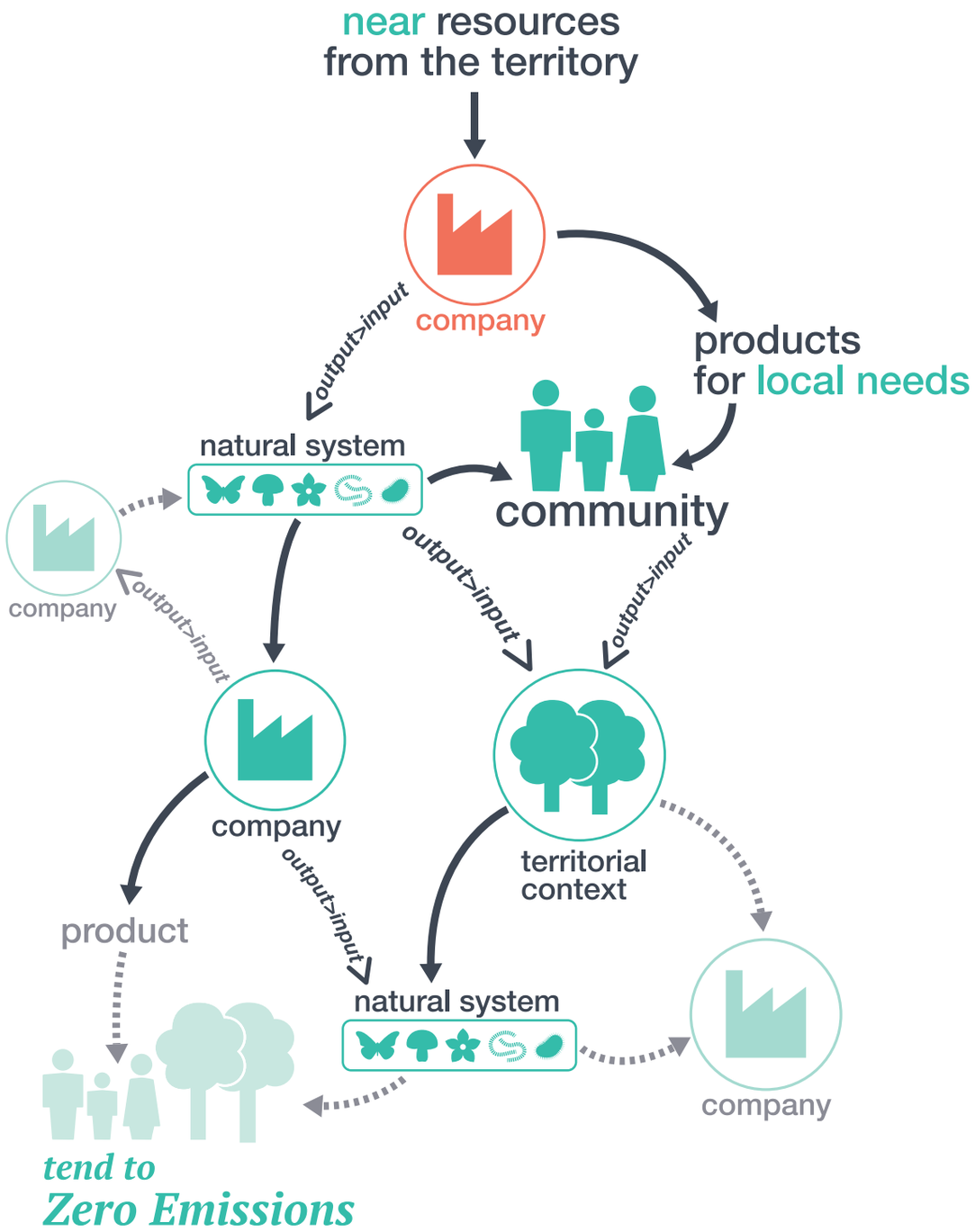
map of *problems*/OPPORTUNITIES faced directly in the design and implementation phases

EXPERIMENT *design*



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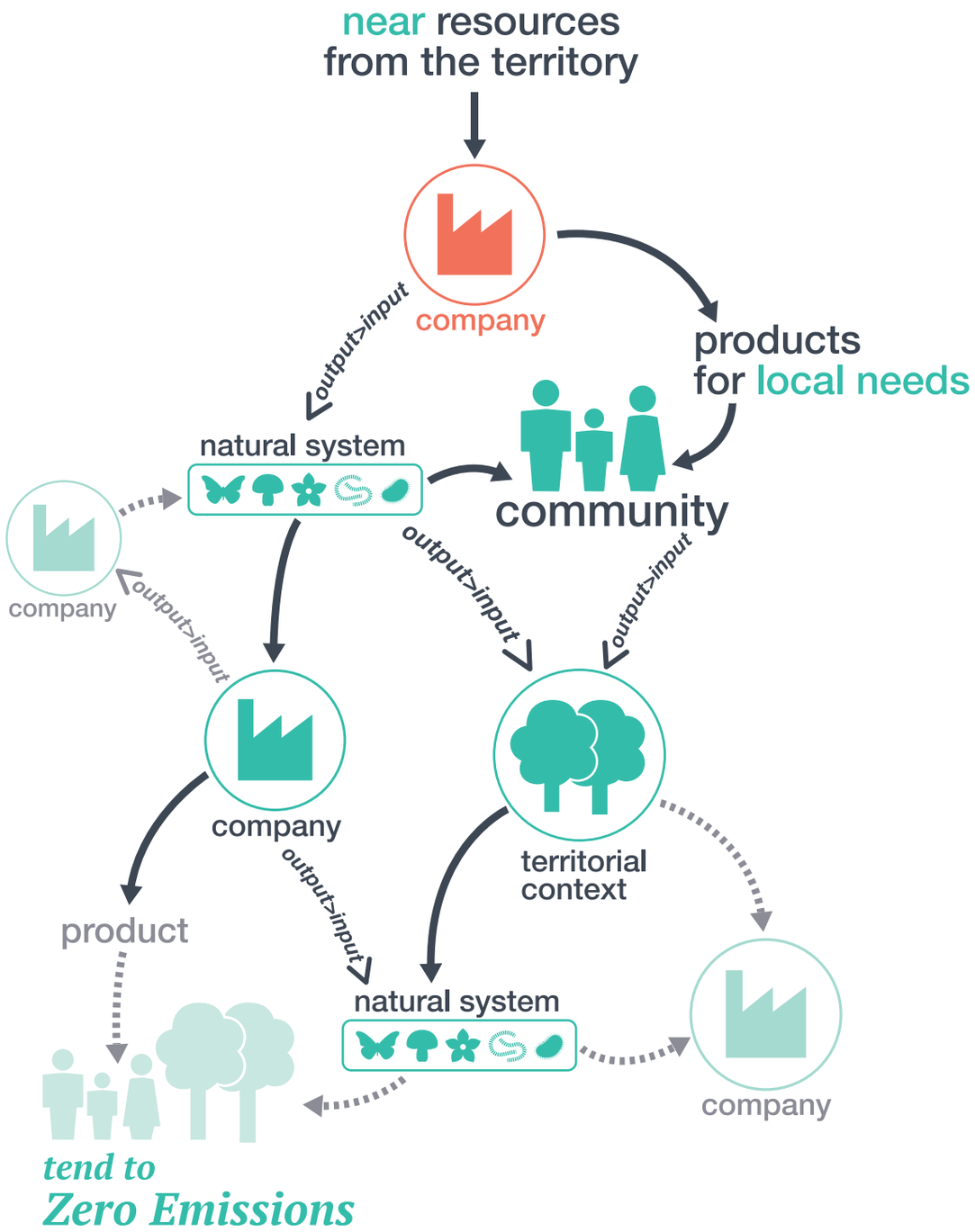

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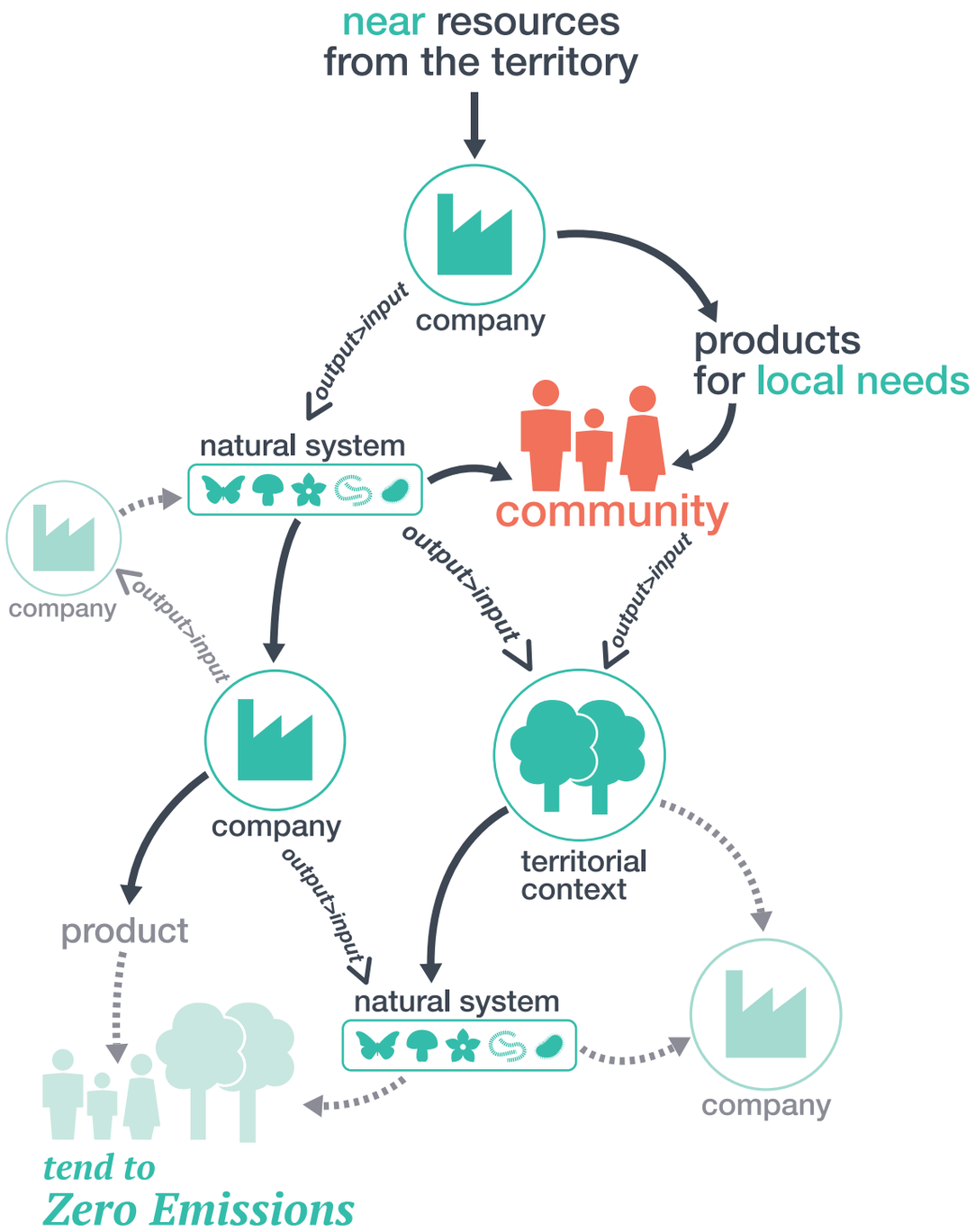
problems/OPPORTUNITIES

\\ many partners equally important (different priorioties and timing)
\\ small companies without R&D department are strictly focus on economic feasibility in short terms
\\ big companies with strong core business and long history are reluctand to change
\\ the interest of the system overcomes the single interests of partners
\\ many disciplines to coordinate and to push together
\\ long process of implementation

EXPERIMENT *design*



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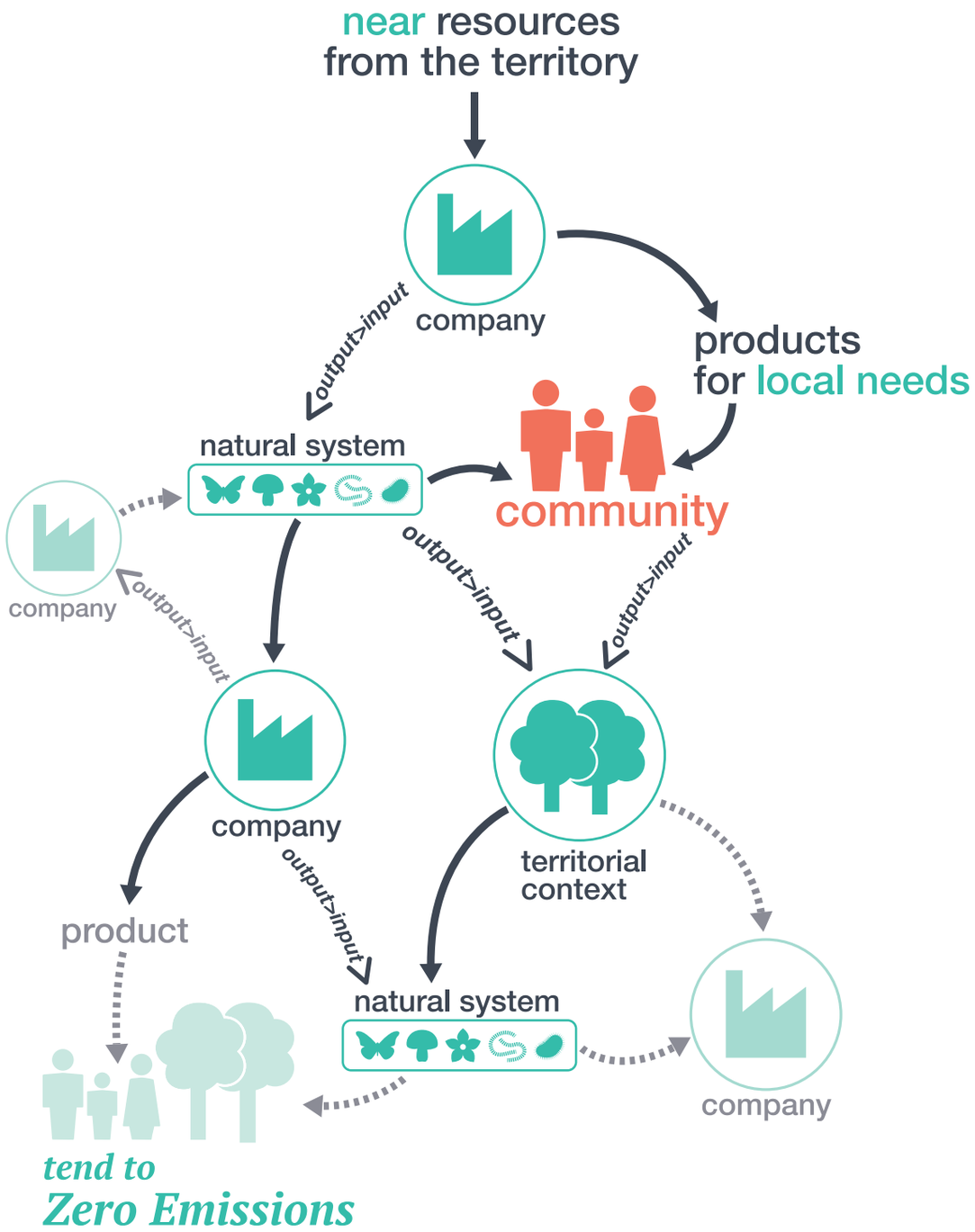

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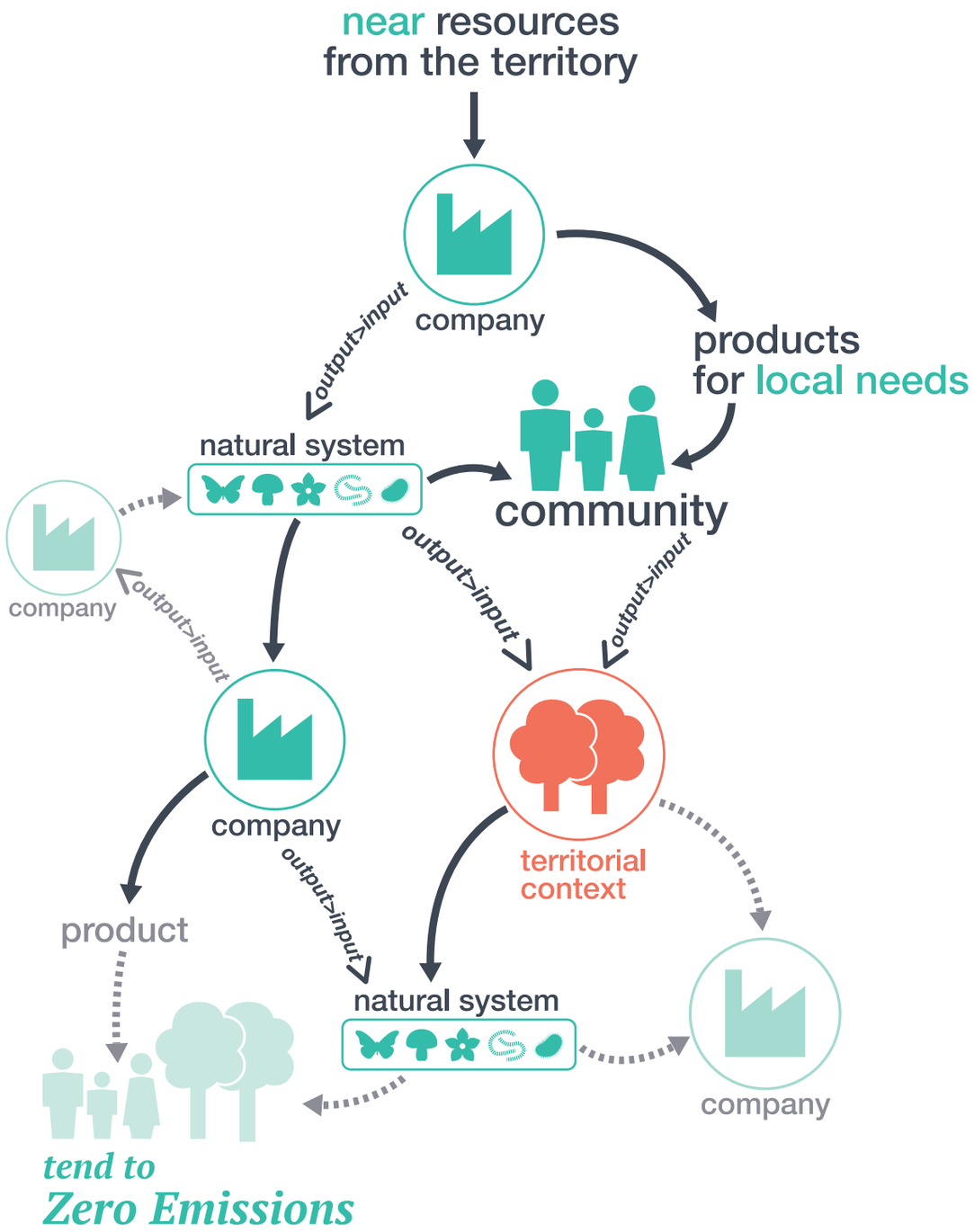
problems/OPPORTUNITIES

\\ many partners equally important (different priorioties and timing)
\\ shift from subsidiarity to fair profit
\\ many legislations to take into account
\\ long process of implementation

EXPERIMENT *design*



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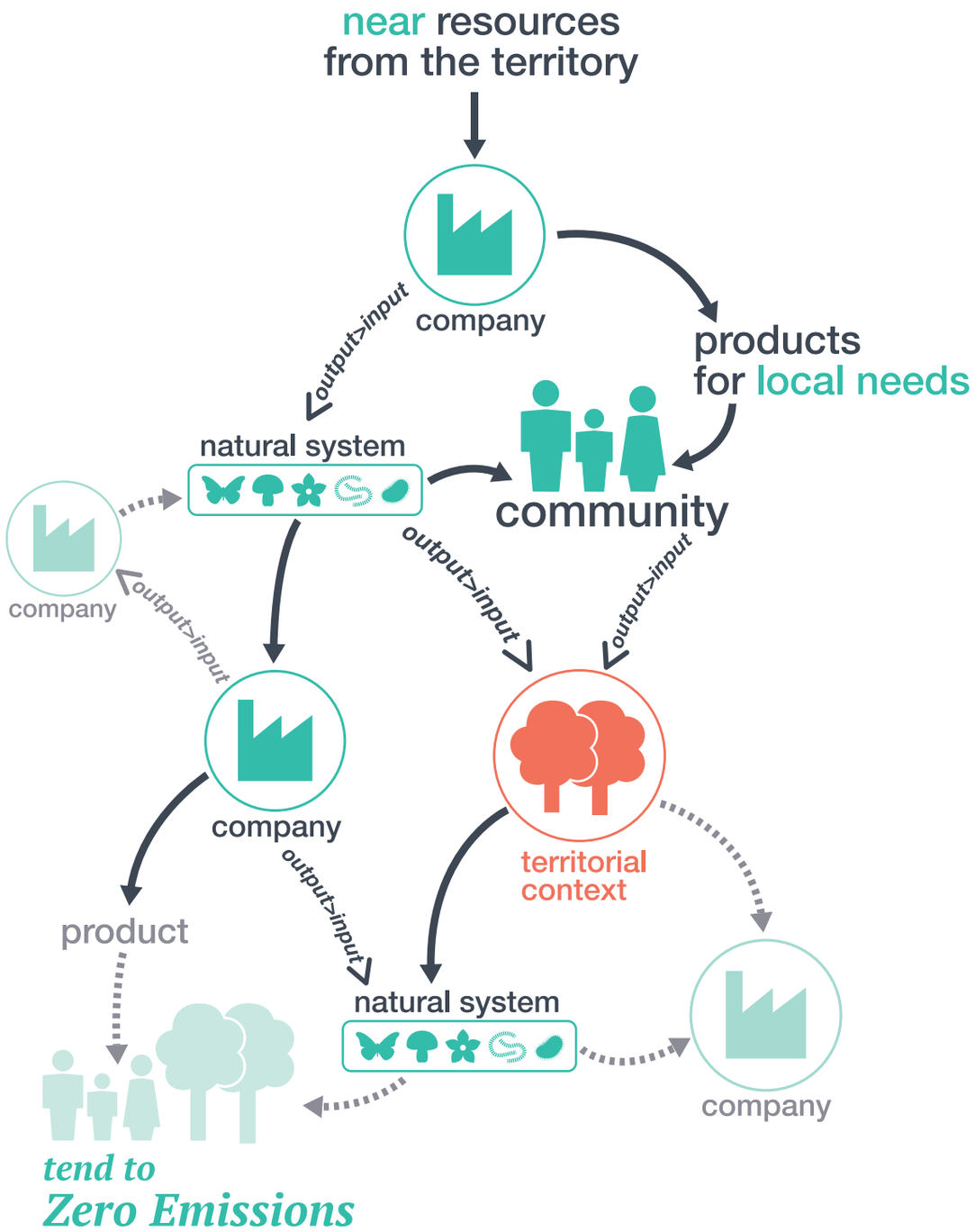

problems/OPPORTUNITIES

\\ many partners equally important (different priorioties and timing)
\\ primary interest and involvement of public administration
\\ many legislations to take into account
\\ long distance to coordinate the long process of the implementation phase
\\ many disciplines to coordinate and to push together

\ **Val Sangone, Italy** (2012-2014)
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RESULTS

keystone players

\\ many partners
equally important

\\ big companies
reluctand to change

\\ primary
interest of PA

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RESULTS

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keystone players

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design & implementation

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RESULTS

keystone players

many
small
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balanced

design & implementation

continuous
local
dialogic

economic feasibility

medium term
shared profit

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CONCLUSION

\ food local networks

\ shared responsabilities

\ increased relationships

\ conscious behaviours of all players

\ new food system can promote social and environmental development

“Uniformity and diversity are not just patterns of land use, they are ways of thinking and ways of living.”

Vandana Shiva, 1995

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***Silvia Barbero**, PhD*
Assistant Professor

POLITECNICO DI TORINO
Department of Architecture and Design
viale Mattioli 39
10125 Torino, Italy

t: +39 349 76 33 793
e: silvia.barbero@polito.it

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