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Systemic design for territorial development: Ecosystem to support autopoietic local economies

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**POLITECNICO
DI TORINO**

Department of
ARCHITECTURE AND DESIGN

**RS
D7**
2018

SYSTEMIC DESIGN FOR TERRITORIAL DEVELOPMENT: ECOSYSTEM TO SUPPORT AUTOPOIETIC LOCAL ECONOMIES

TRACK 4: TERRITORIAL METABOLISM AND FLOURISHING ECONOMIES

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Department of Architecture and Design

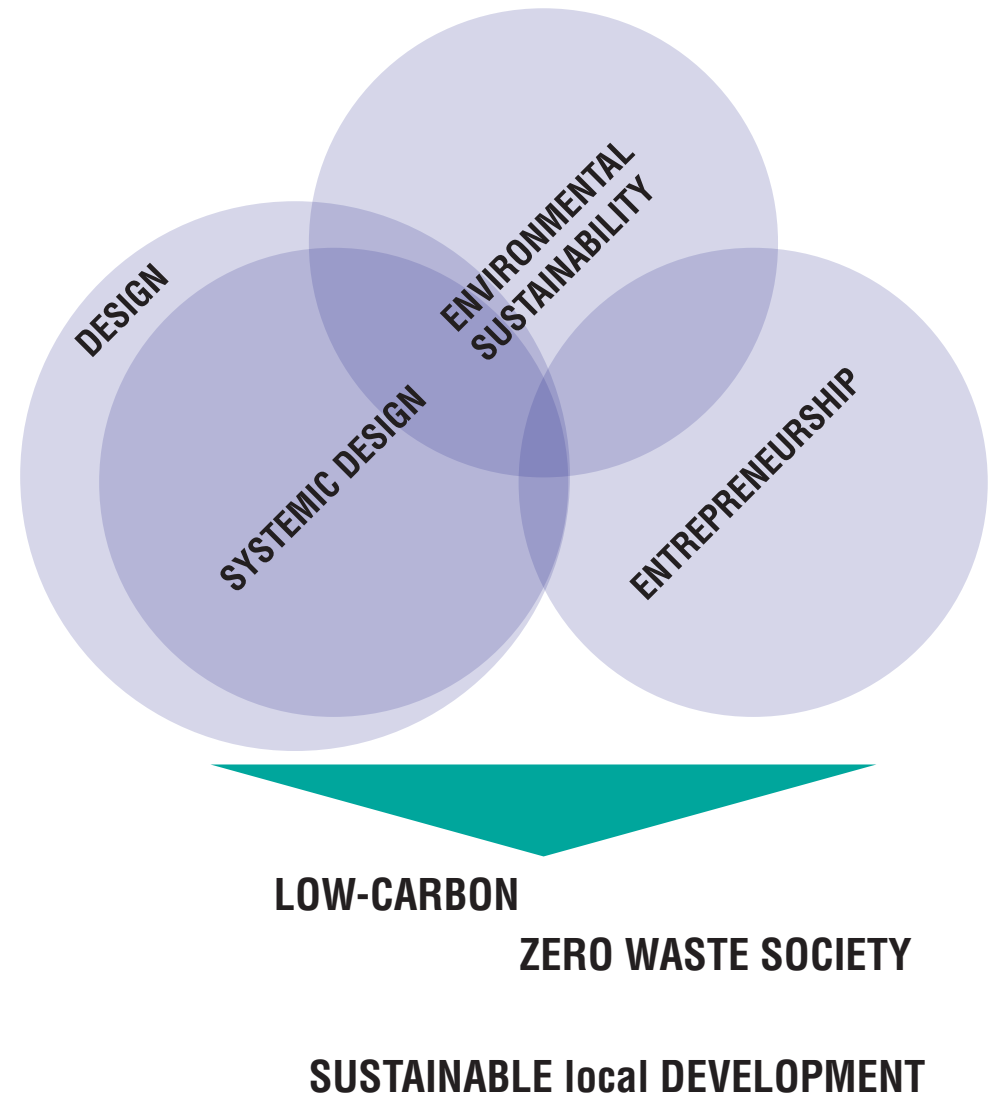
Politecnico di Torino

Turin, Italy

RSD7 Conference, 24-26 October 2018, Turin

***This research
wants to demonstrates the
need and importance of:***

- systemic design projects for the
manufacturing sectors;***
- their implementation;***
- SDecosystem to obtain a
sustainable local development***



Preliminary research

It wants to demonstrate the need and importance of:

design an

ECOSYSTEM TO SUPPORT

AUTOPOIETIC LOCAL ECONOMIES

- *systemic design projects for the manufacturing sector;*
- *their implementation;*
- *SD to obtain a sustainable local development*



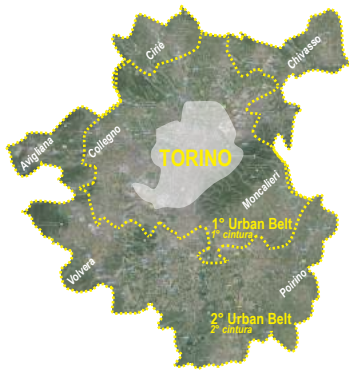
LOW-CARBON

ZERO WASTE SOCIETY

SUSTAINABLE local DEVELOPMENT

STATE-OF-THE-ART *territory*

*from past analysis of
different territories (geographical areas)
and economic and productive realities*



all these graphic representations are made by authors or by students in 'Systemic Design' course at Politecnico di Torino in various years



STATE-OF-THE-ART territory

Holistic Diagnosis (geography, economy, demography, culture, ..)

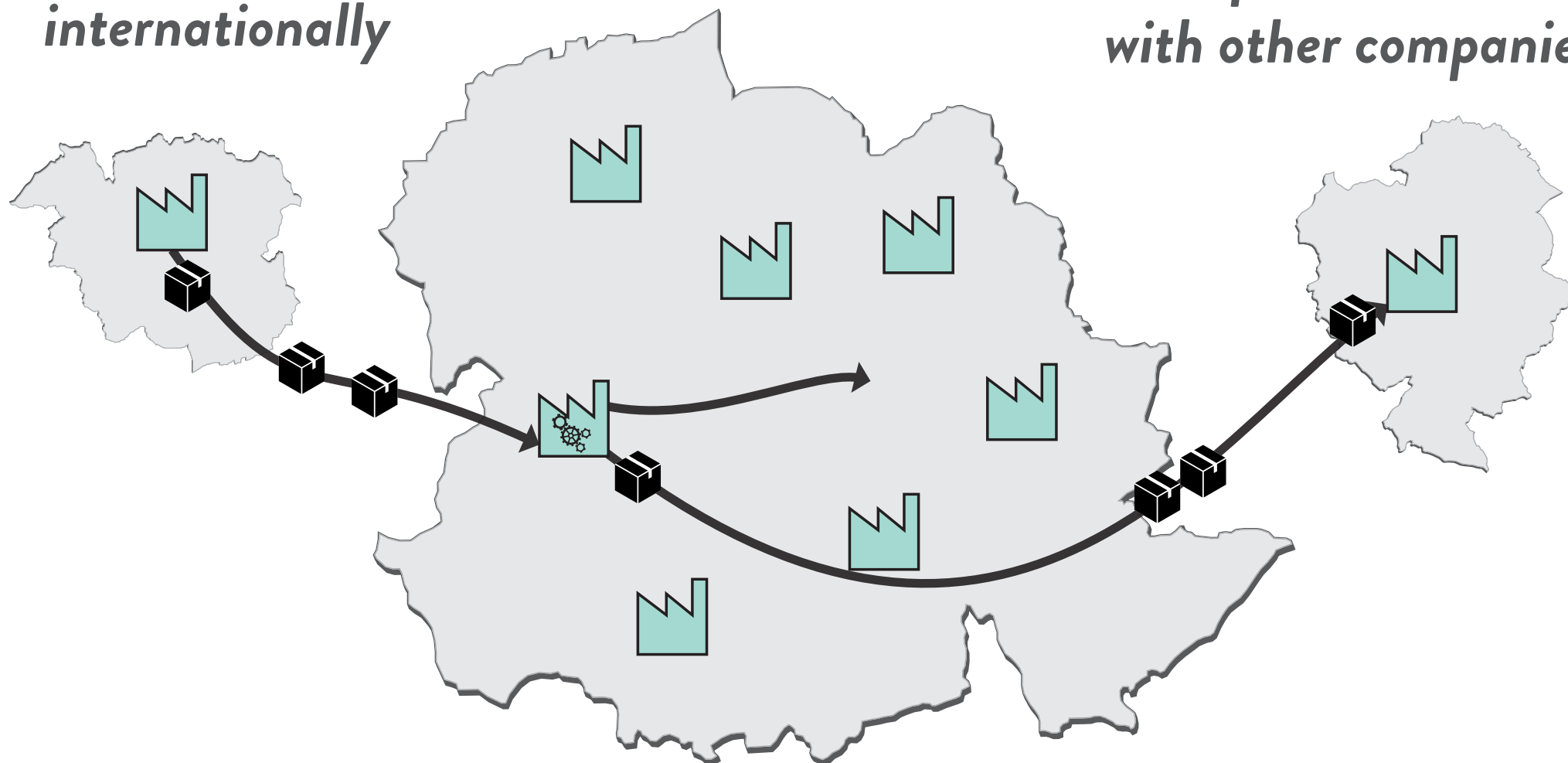


example of Holistic Diagnosis made by students in 'Systemic Design' course at Politecnico di Torino in a.y. 2015/2016 just published in Battistoni, C., Barbero S. (2017). Systemic Design, from the content to the structure of education: new educational model. In: 12th EAD Conference - Sapienza University of Rome (IT), 12-14 April 2017

STATE-OF-THE-ART *territory*

products are bought and sold internationally

competitive relation with other companies



LINEAR ECONOMY

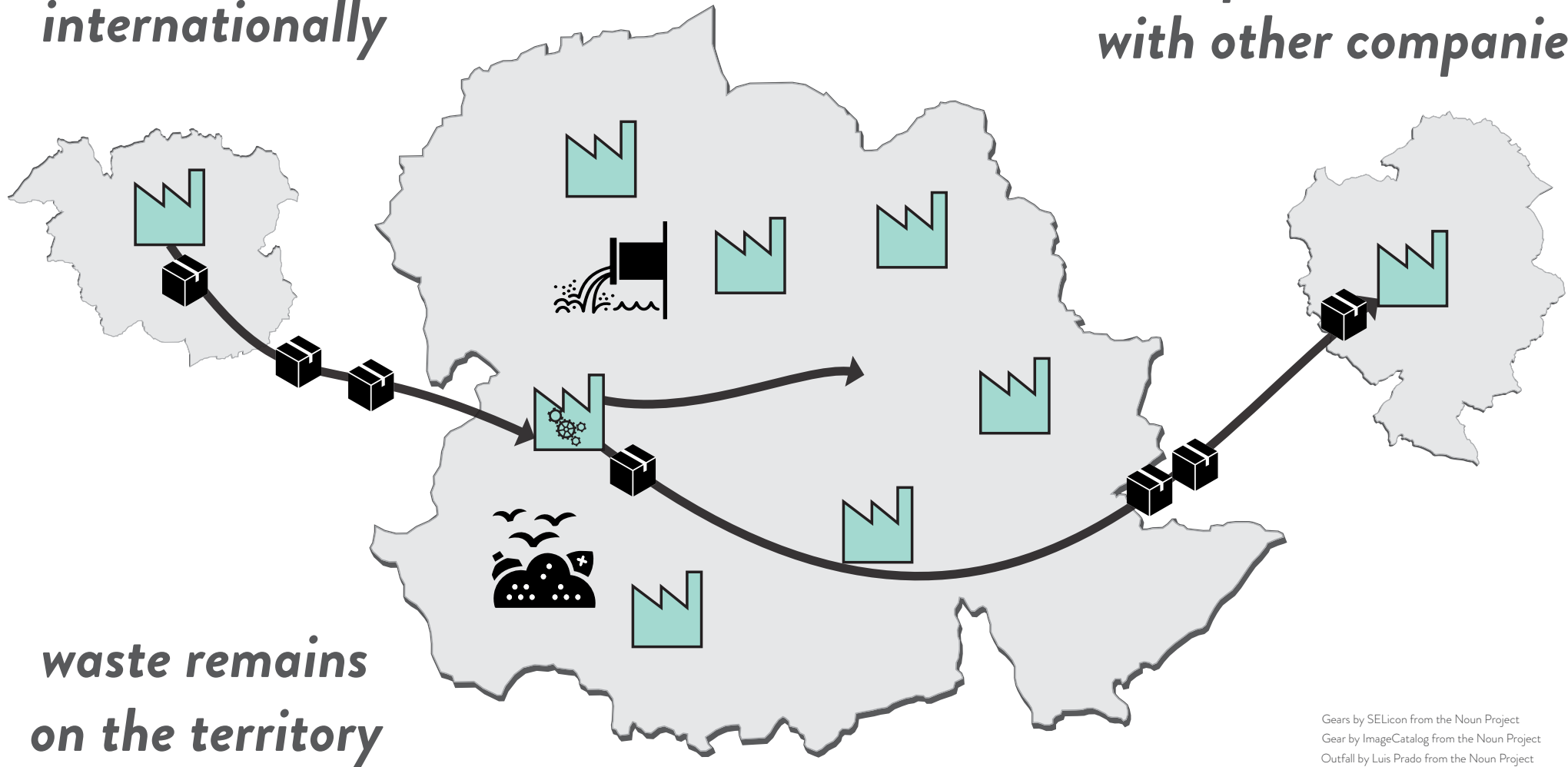
Gears by SELicon from the Noun Project
Gear by ImageCatalog from the Noun Project
Box by AliWijaya from the Noun Project

STATE-OF-THE-ART *territory*

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2018

products are bought and sold internationally

competitive relation with other companies



waste remains on the territory

LINEAR ECONOMY

Gears by SELicon from the Noun Project
Gear by ImageCatalog from the Noun Project
Outfall by Luis Prado from the Noun Project
Landfill by Yu luck from the Noun Project
Box by AliWijaya from the Noun Project

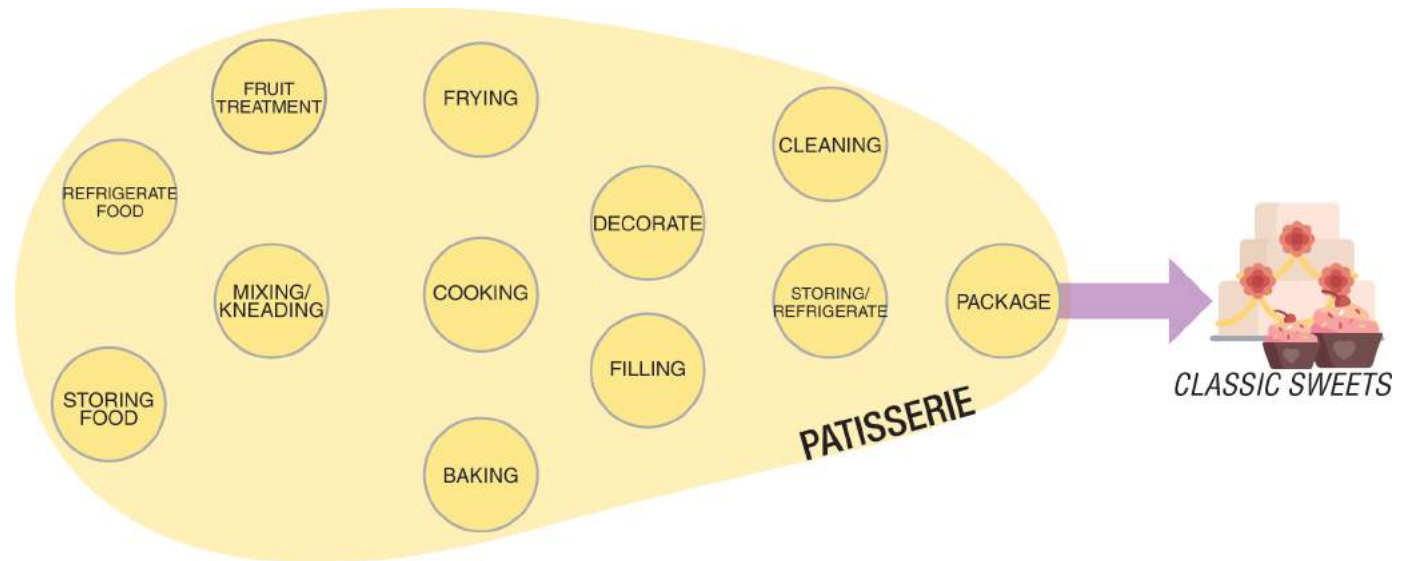
STATE-OF-THE-ART territory

*if we analyze their current production model
with input-output analysis (energy and matter flow)
with quantitative and qualitative approach*



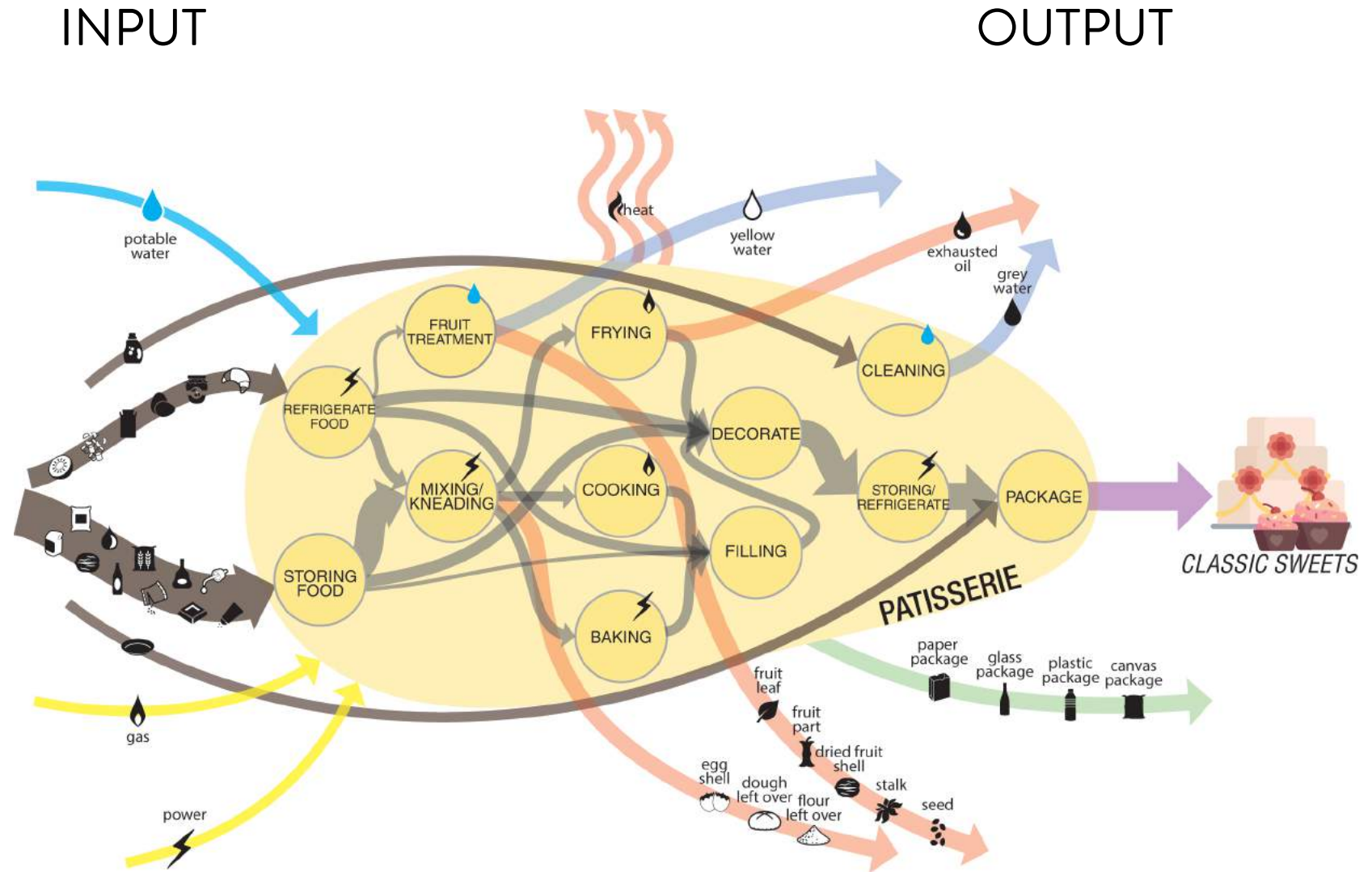
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STATE-OF-THE-ART - single activity analysis



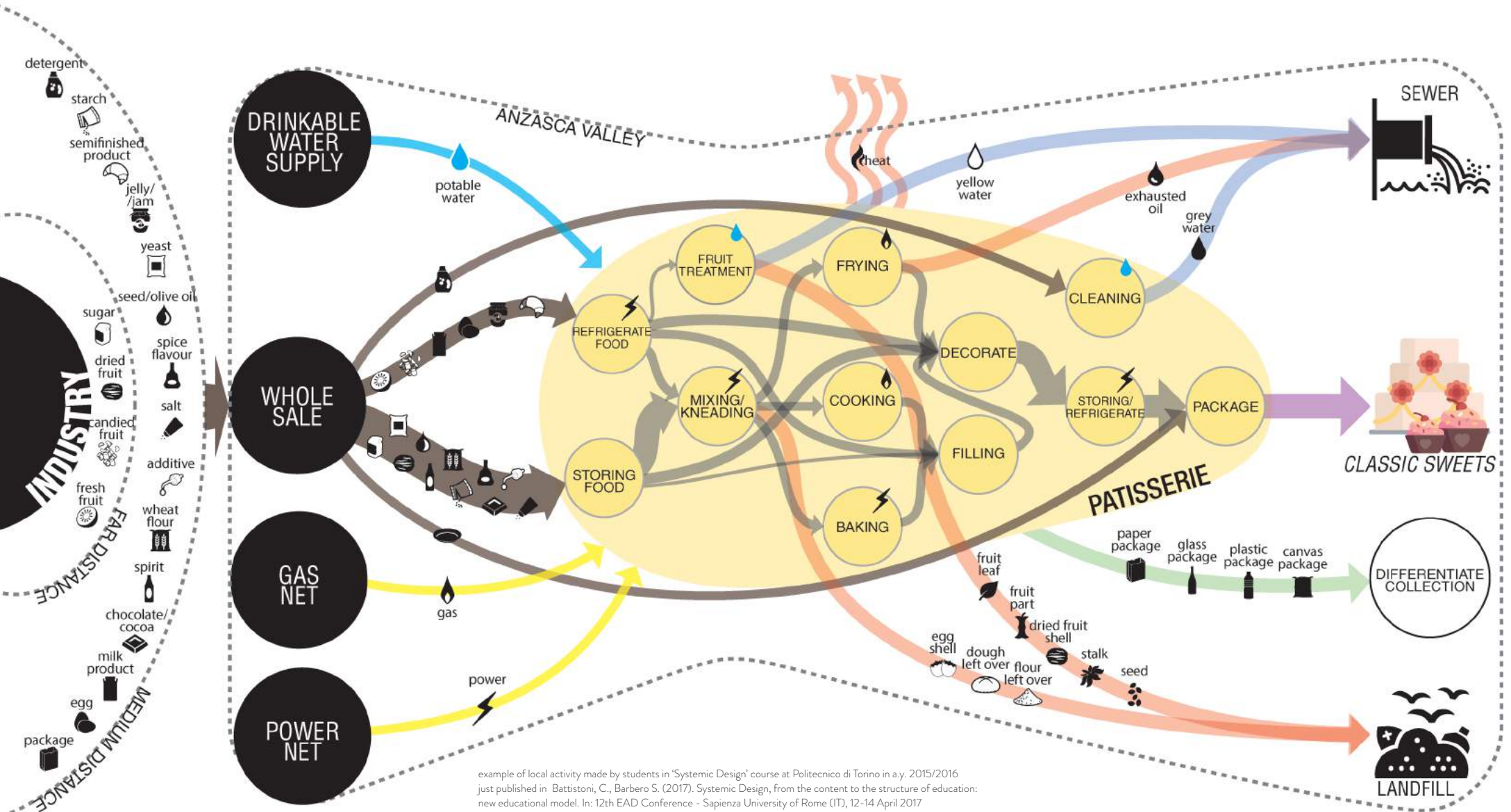
example of local activity made by students in Systemic Design course at Politecnico di Torino in a.y. 2015/2016
just published in: Battistoni, G.S. Barbero, S. (2017) *Systemic Design: from the content to the structure of education: a new educational model*, in: IAD Conference Sapienza University of Rome (IT), 12-14 April 2017

STATE-OF-THE-ART - single activity analysis



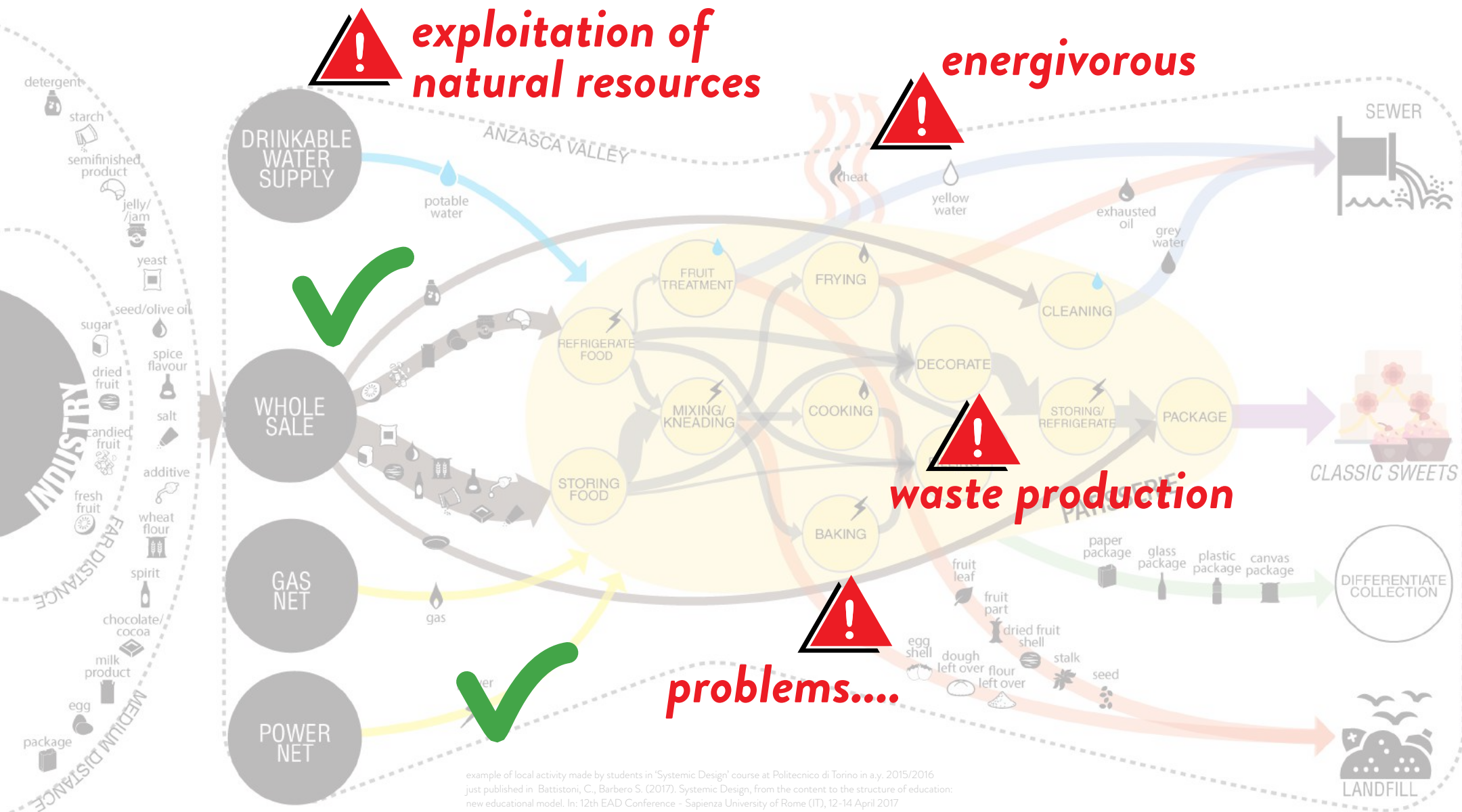
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STATE-OF-THE-ART - single activity analysis



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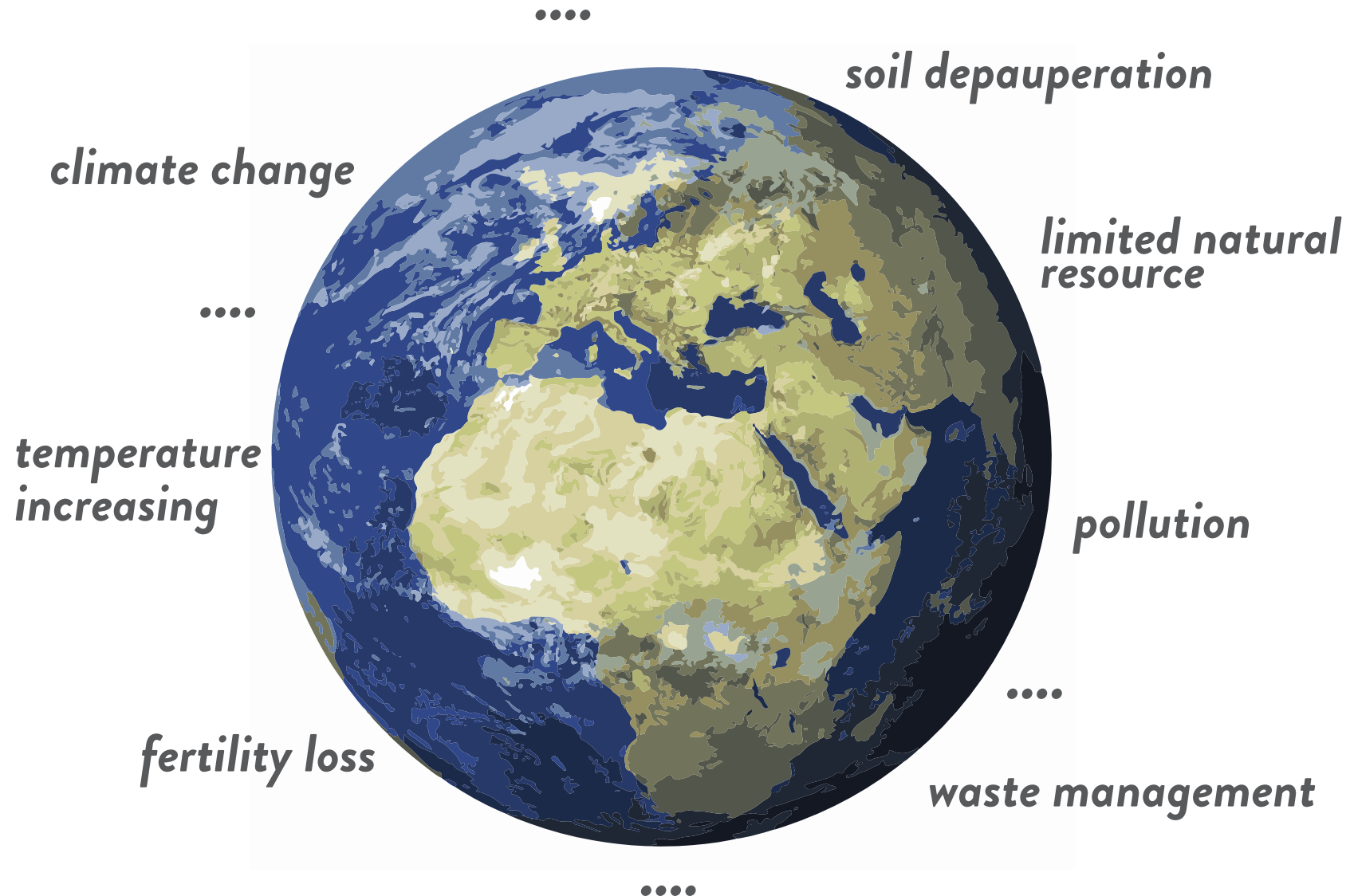
STATE-OF-THE-ART - single activity analysis



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STATE-OF-THE-ART

current major environmental problems



STATE-OF-THE-ART *territory*

*The design discipline with its methodology and approaches
can represent a solution for the valorisation
of the material culture of a specific territory*
(De Giorgi, 2008; Catania, 2011)

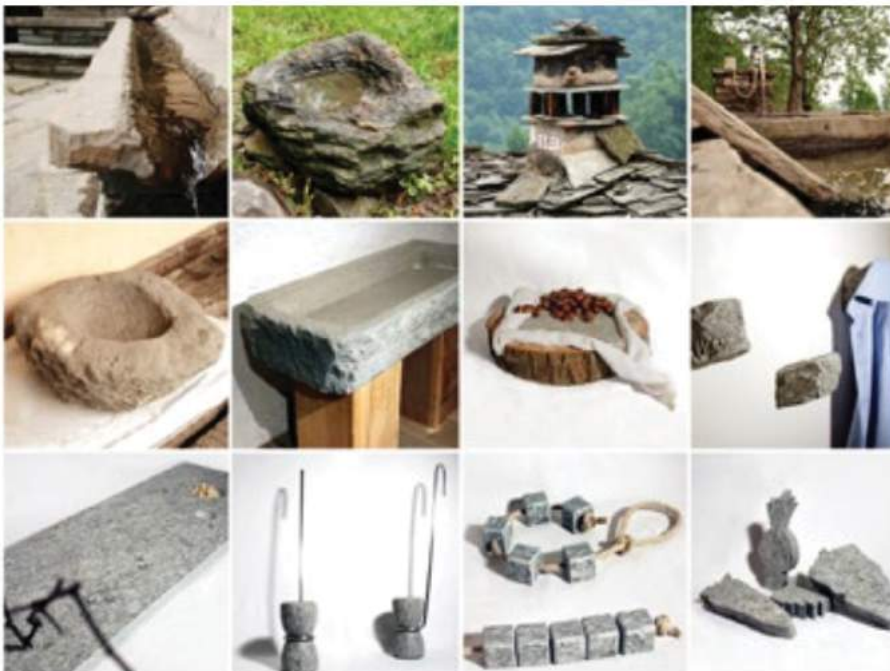


image retrieved from: De Giorgi (2017), design e territorio: reflexões e experiências do piemonte (italia)



image retrieved from: <https://www.ibs.it/design-territorio-sostenibilita-ricerca-innovazione-libro-vari/e/9788856841145>
Catania, A. (2011). Design, territorio e sostenibilità: ricerca e innovazione per la valorizzazione delle risorse locali. Milano; Angeli.

IF
we look at
their production model
and the territory where they are located
with
a systemic approach

*shifting the attention from the single actors
to
the relationships that can be created among them,
is possible to obtain different results,
as the theory of system suggests:
“the whole is **GREATER** than the sum of its parts”
(Aristotle)*

*or better
“the whole is **OTHER** than the sum of its parts”
from **Gestalt**
(Koffka)*

systemic thinking applied to
- the project (design process)
- manufacturing sector (production process)

SYSTEMIC DESIGN

The borders of the traditional design discipline are enlarged by the Systemic Design (SD) (Bistagnino, 2011) which produce a step forward the eco-design

SYSTEMIC DESIGN (Bistagnino, 2011)

model production process

*output become input as
happen in nature
between the five natural
kingdoms*

goal: zero emissions

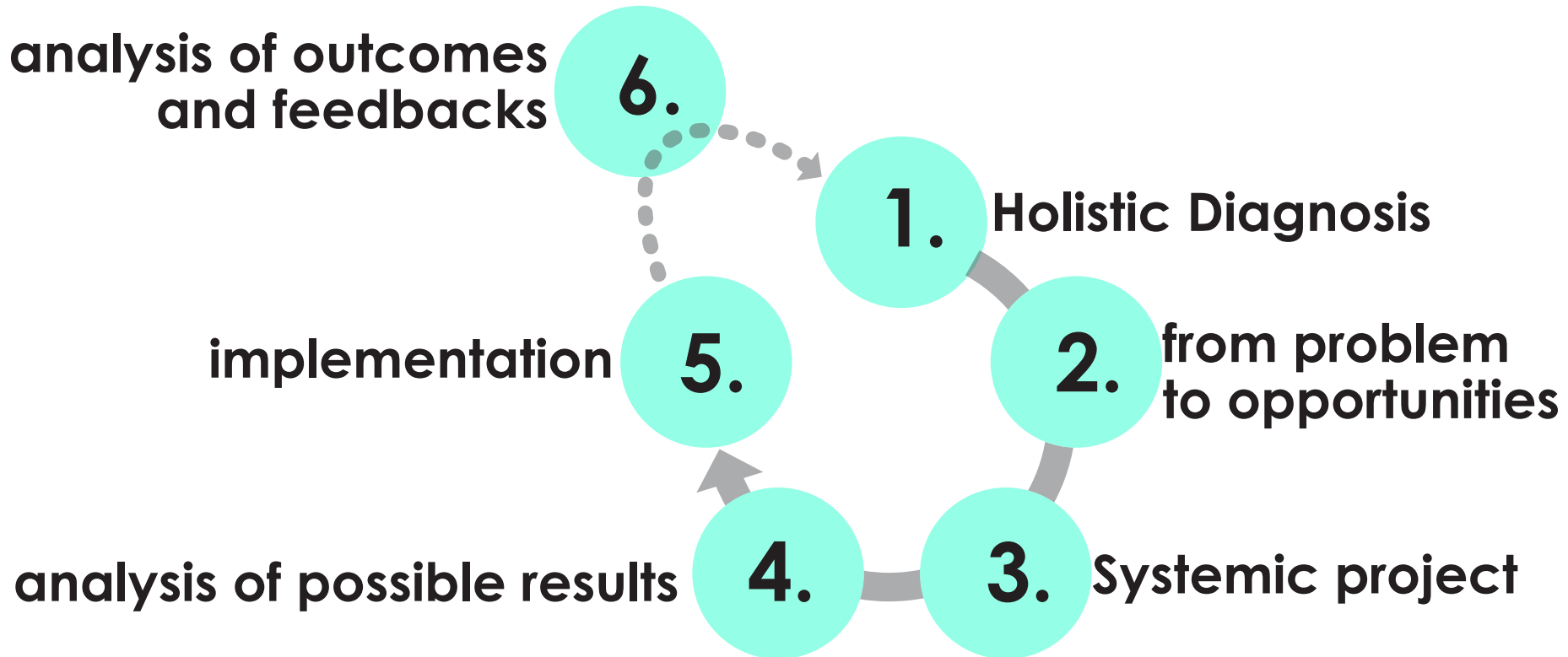
*environmental, social and
economic sustainability*

5 principal guide-lines:

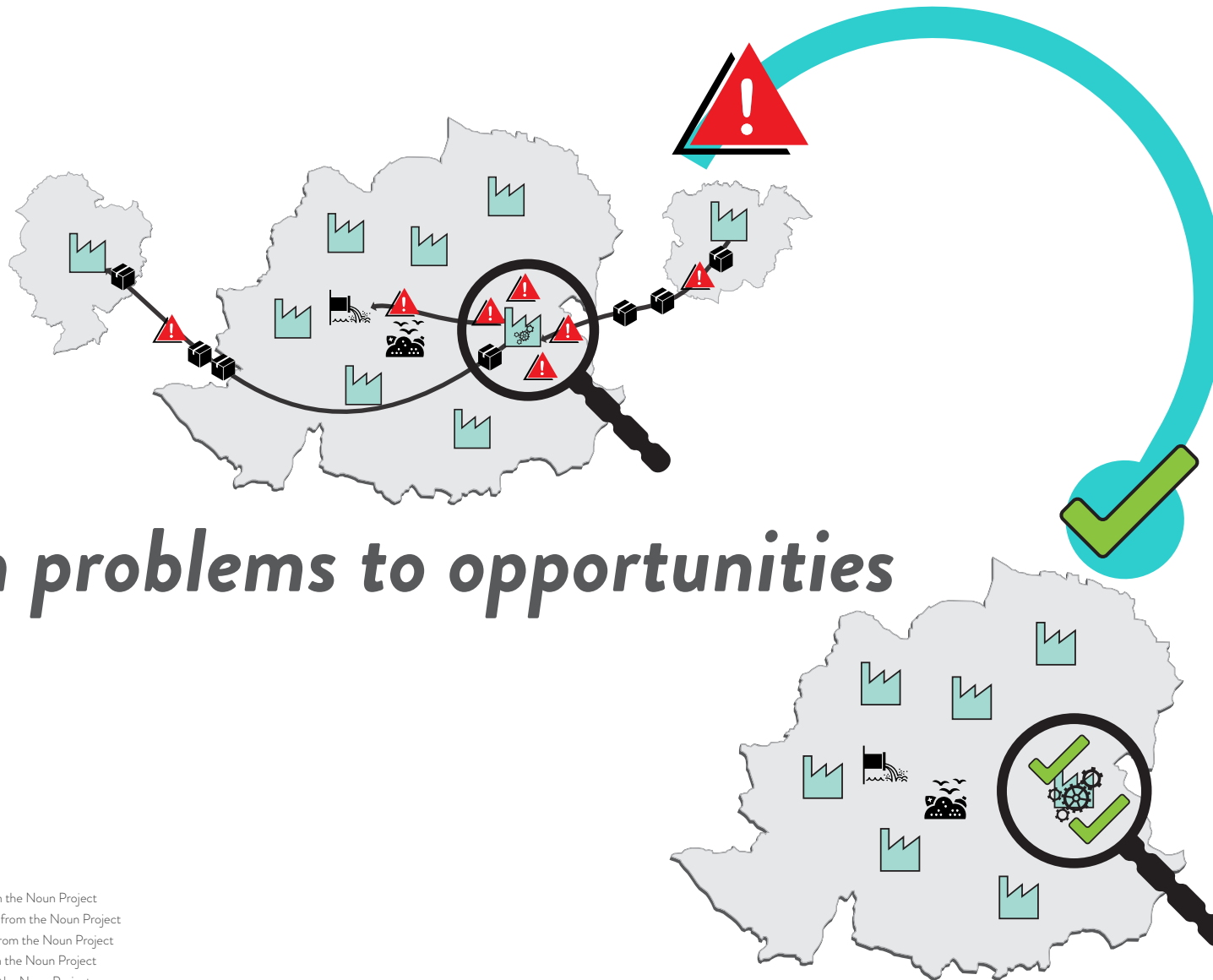
output>input
relationships
autopoiesis
act locally
man at the center

SYSTEMIC DESIGN *principles*

methodology:



TURNING POINT

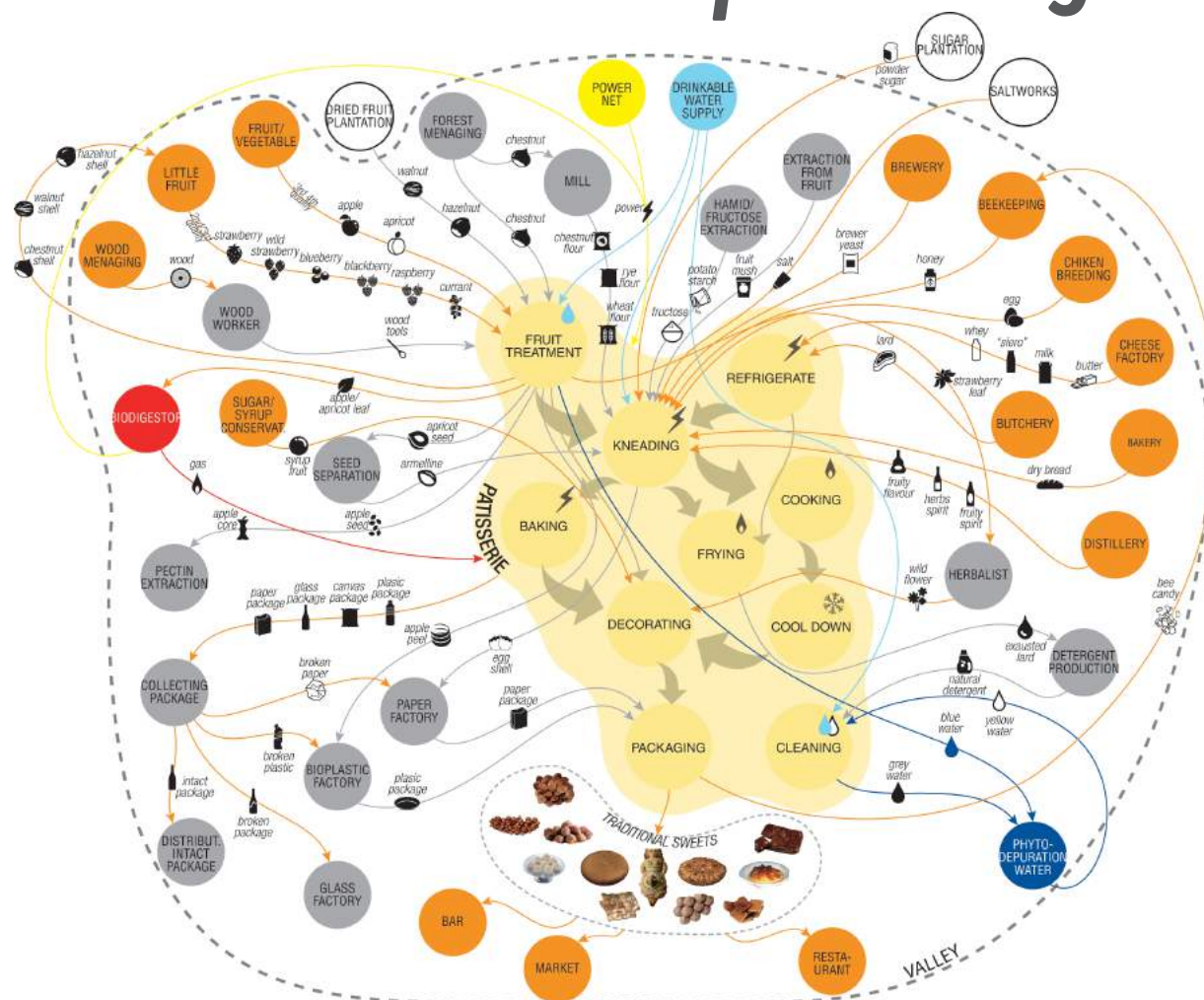


From problems to opportunities

Gears by SELicon from the Noun Project
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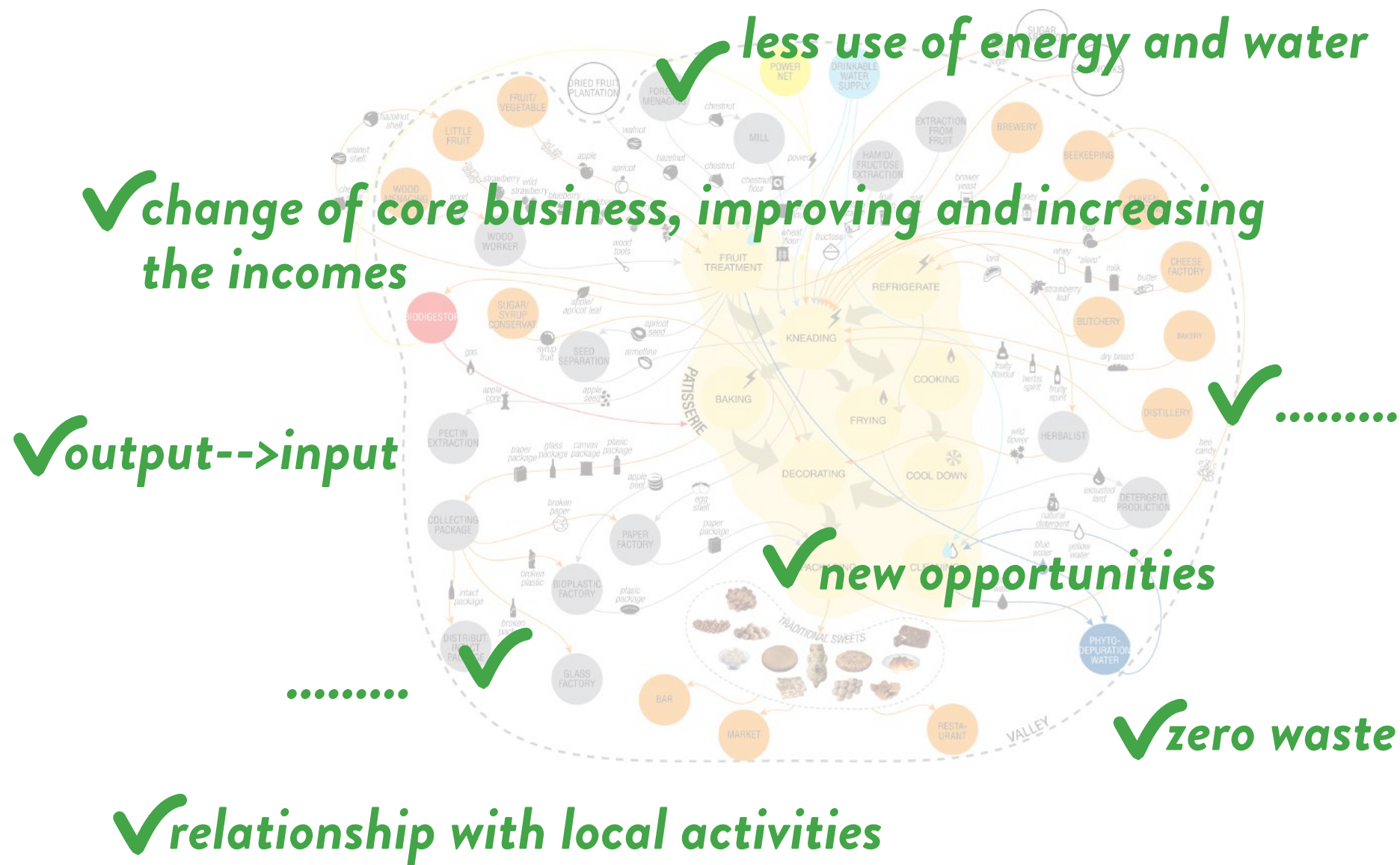
APPLICATION *single activity*

open living ecosystem



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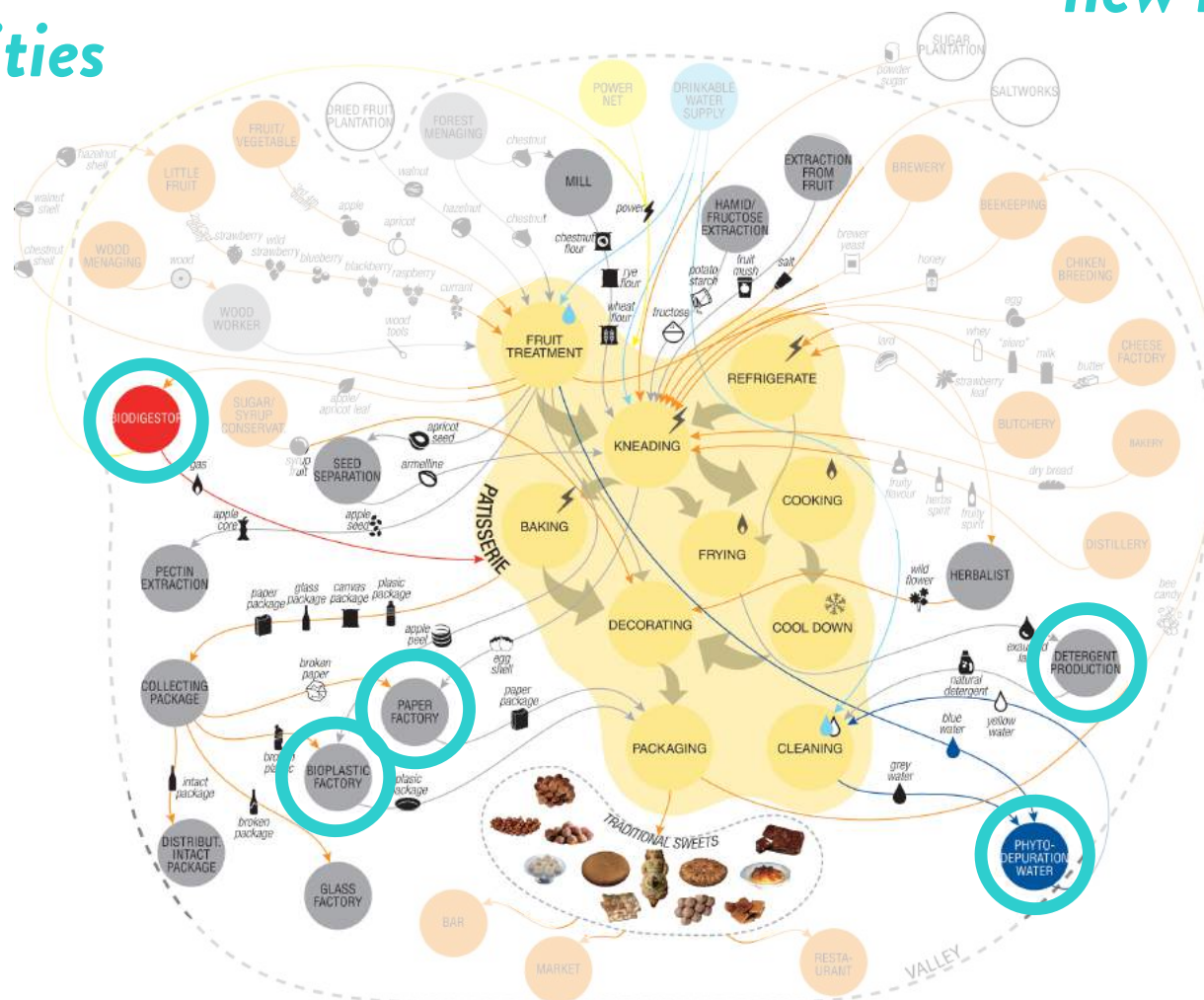
APPLICATION *single activity*



APPLICATION *single activity*

new activities

new relations



autopoietic process

complexity
before environment-oriented
than profit-oriented

paradigm shift

different competences

quality and not quantity

financing

lack of research
and similar cases

problems in implementation phase



- complexity
- before environment-oriented than profit-oriented
- paradigm shift
- different competences
- quality and not quantity
- financing
- lack of research and similar cases

Need to:

sustain the born of new economic realities

sustain the shift in the production model

driven by design

cooperation

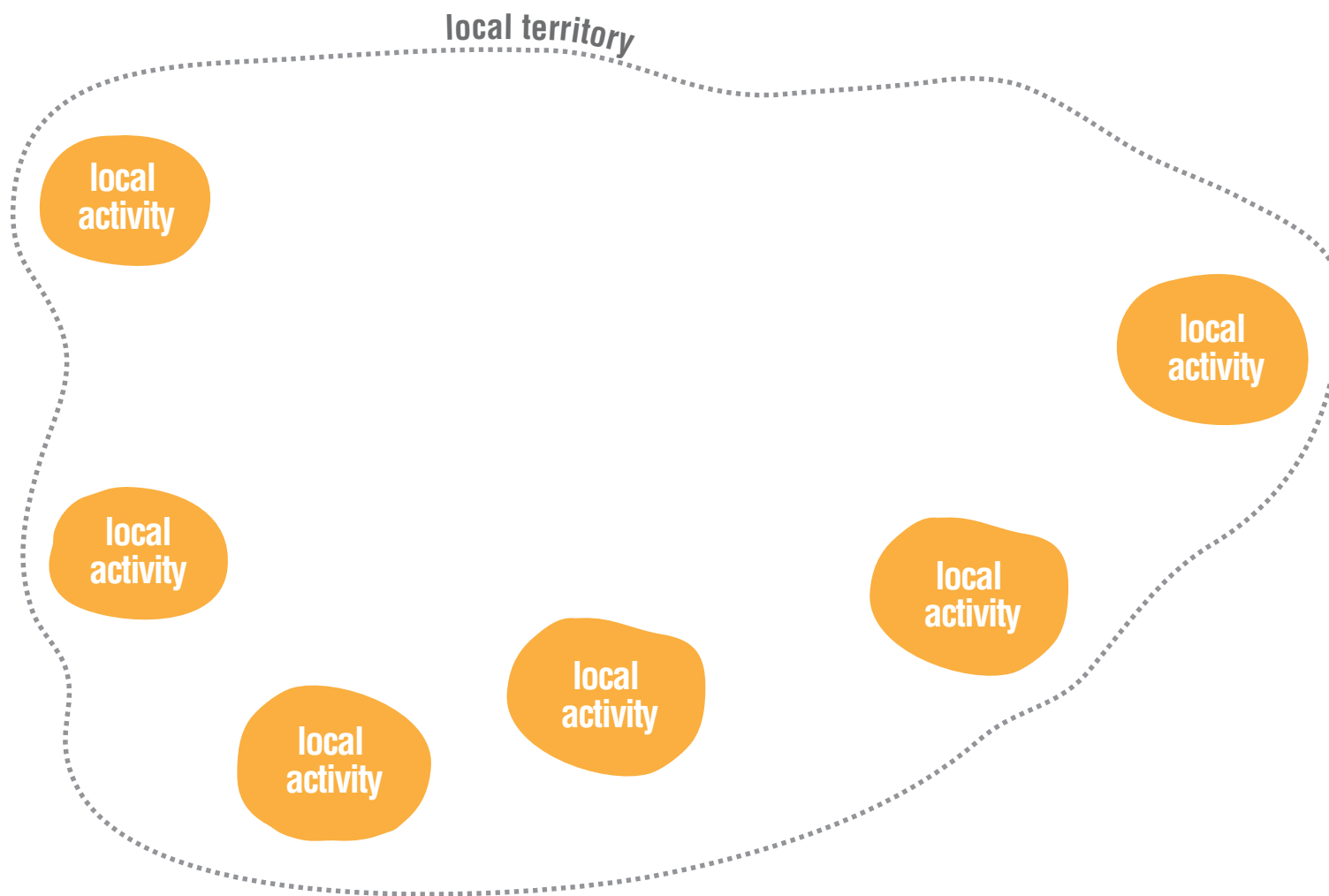
multidisciplinarity and
interdisciplinarity

zero waste

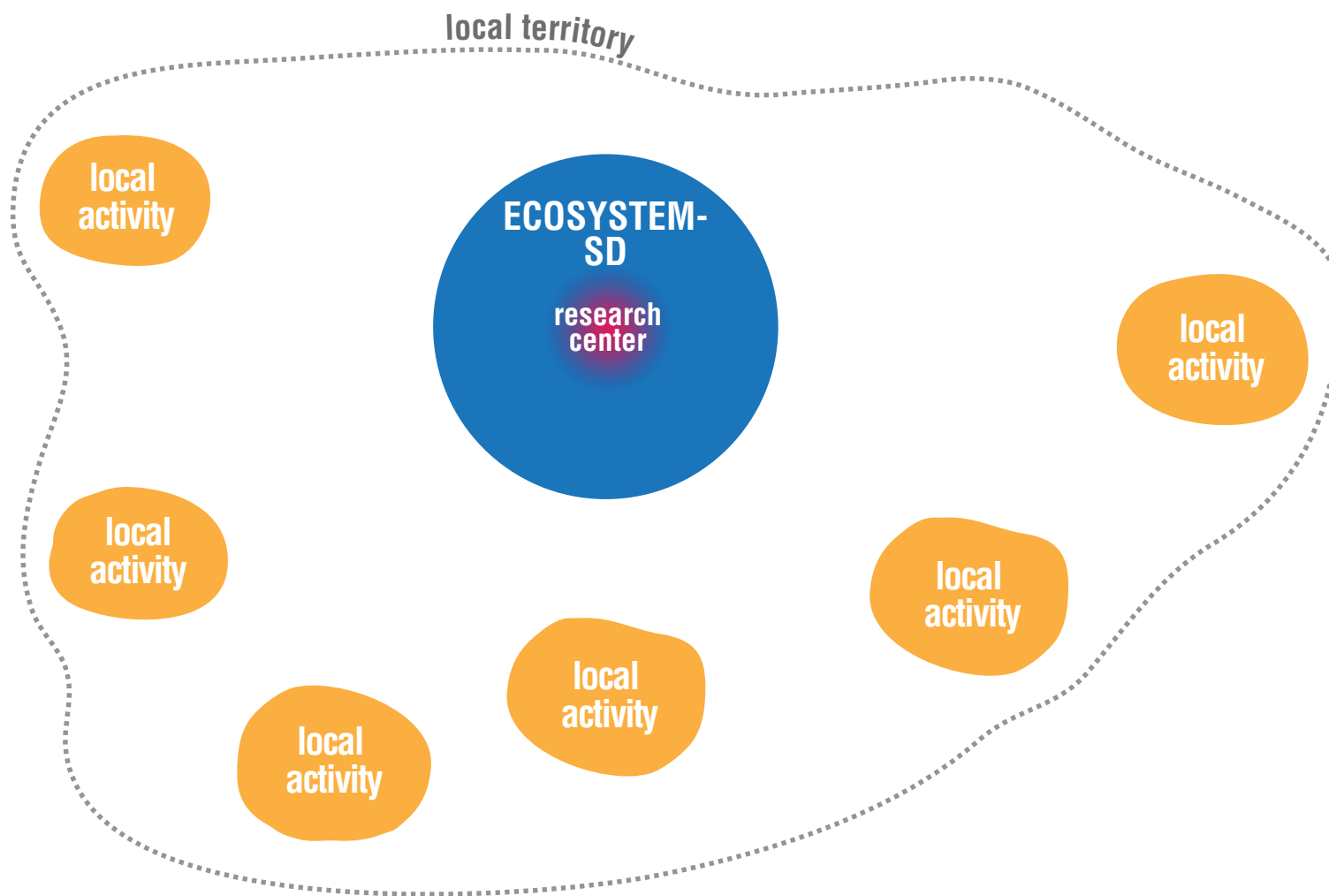
multiple actors
and stakeholders

environmental,
economic
and social
sustainability

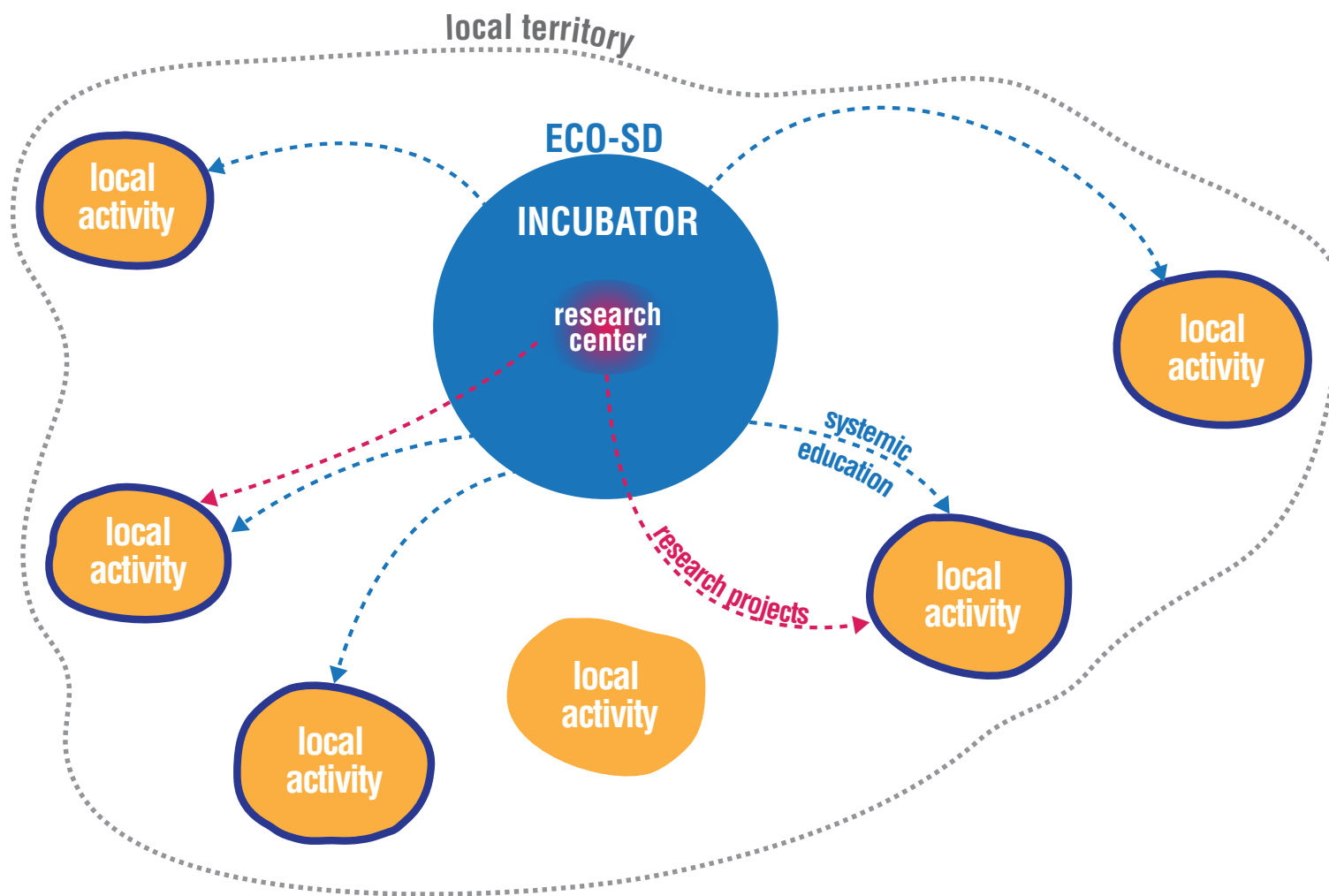
RESULTS ECOSYSTEM SD *project*



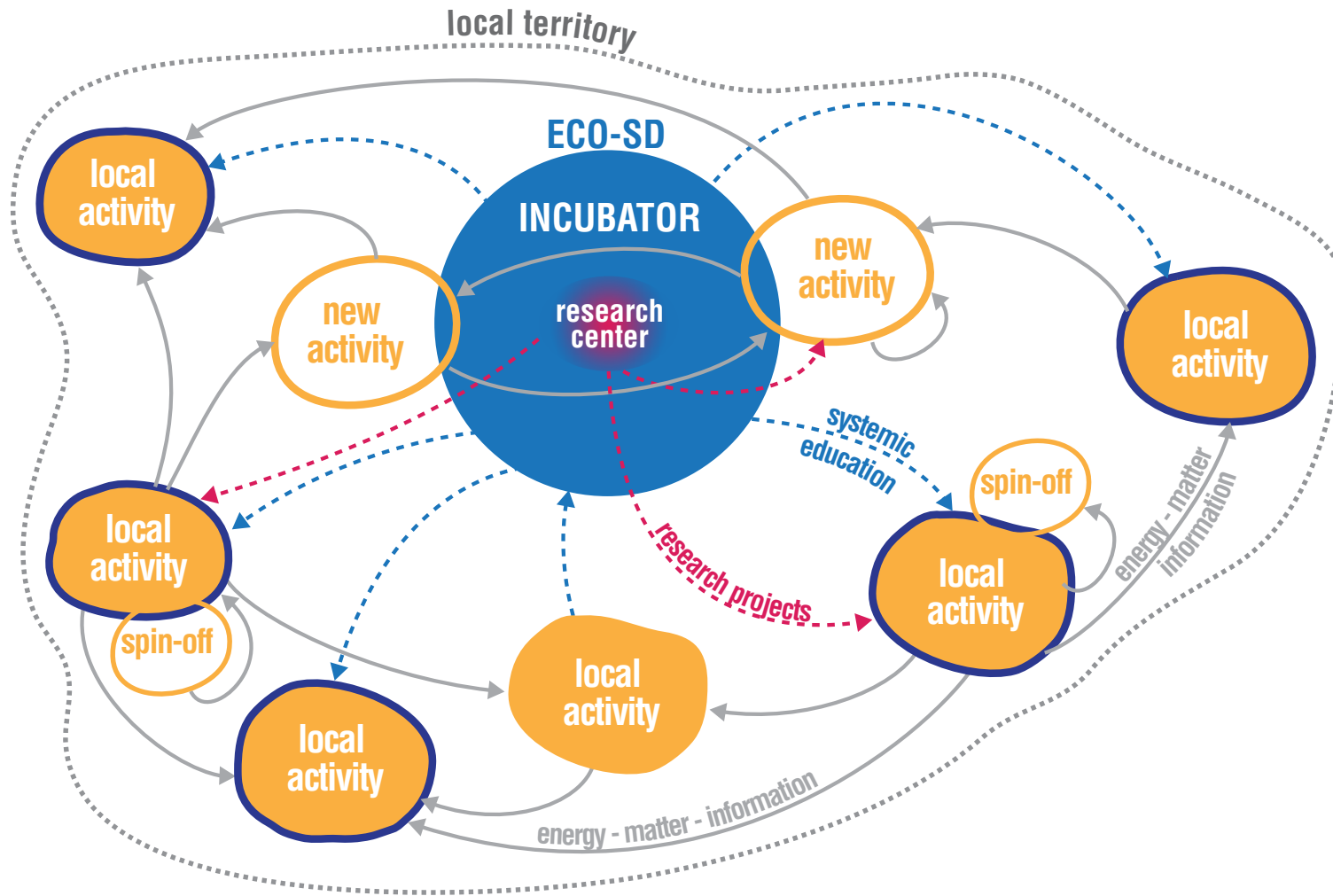
RESULTS ECOSYSTEM SD *project*



RESULTS ECOSYSTEM SD *project*



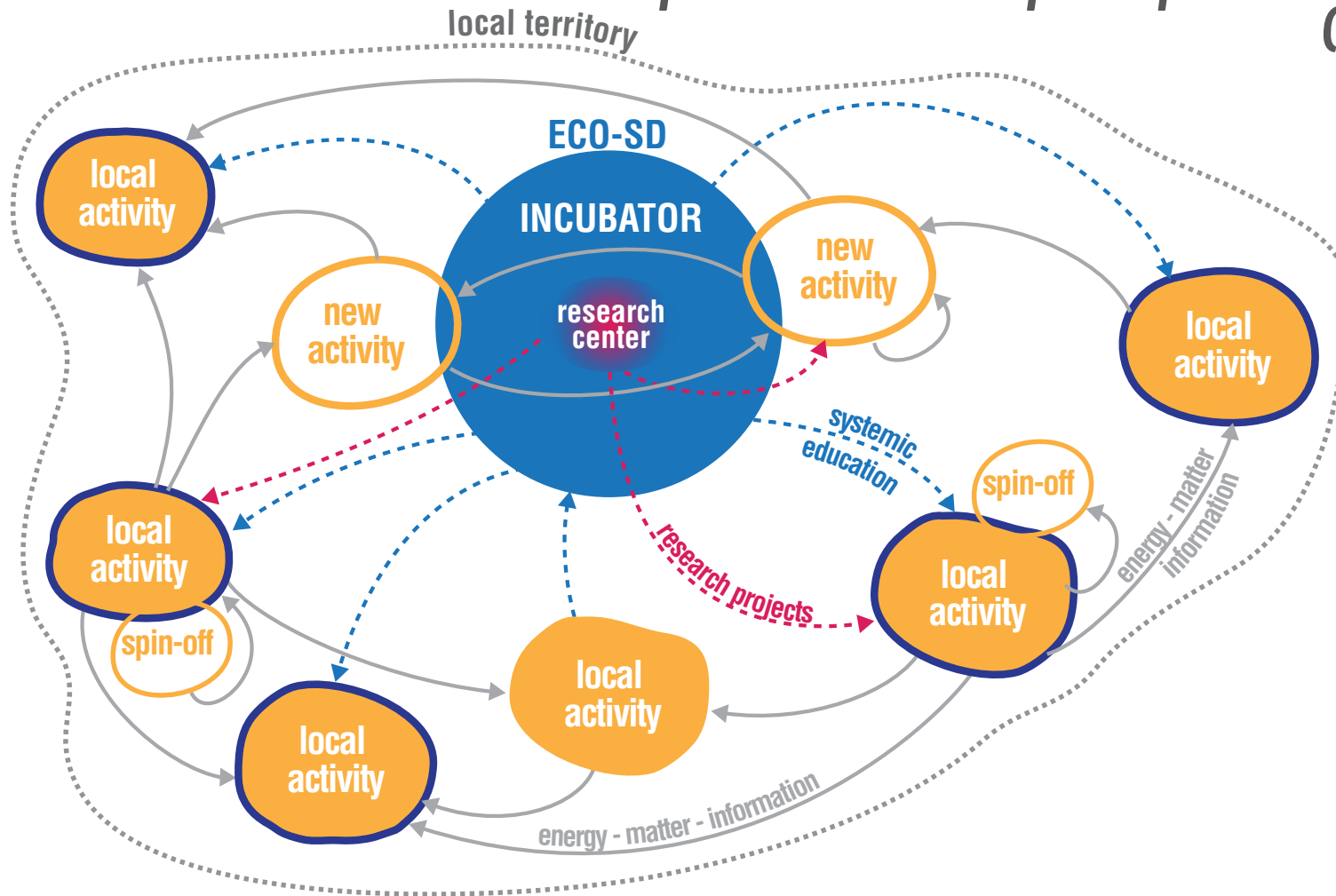
RESULTS ECOSYSTEM SD *project*



RESULTS ECOSYSTEM SD *project*

foster the shift in the production model

*foster the born of new production model
(in or out)*

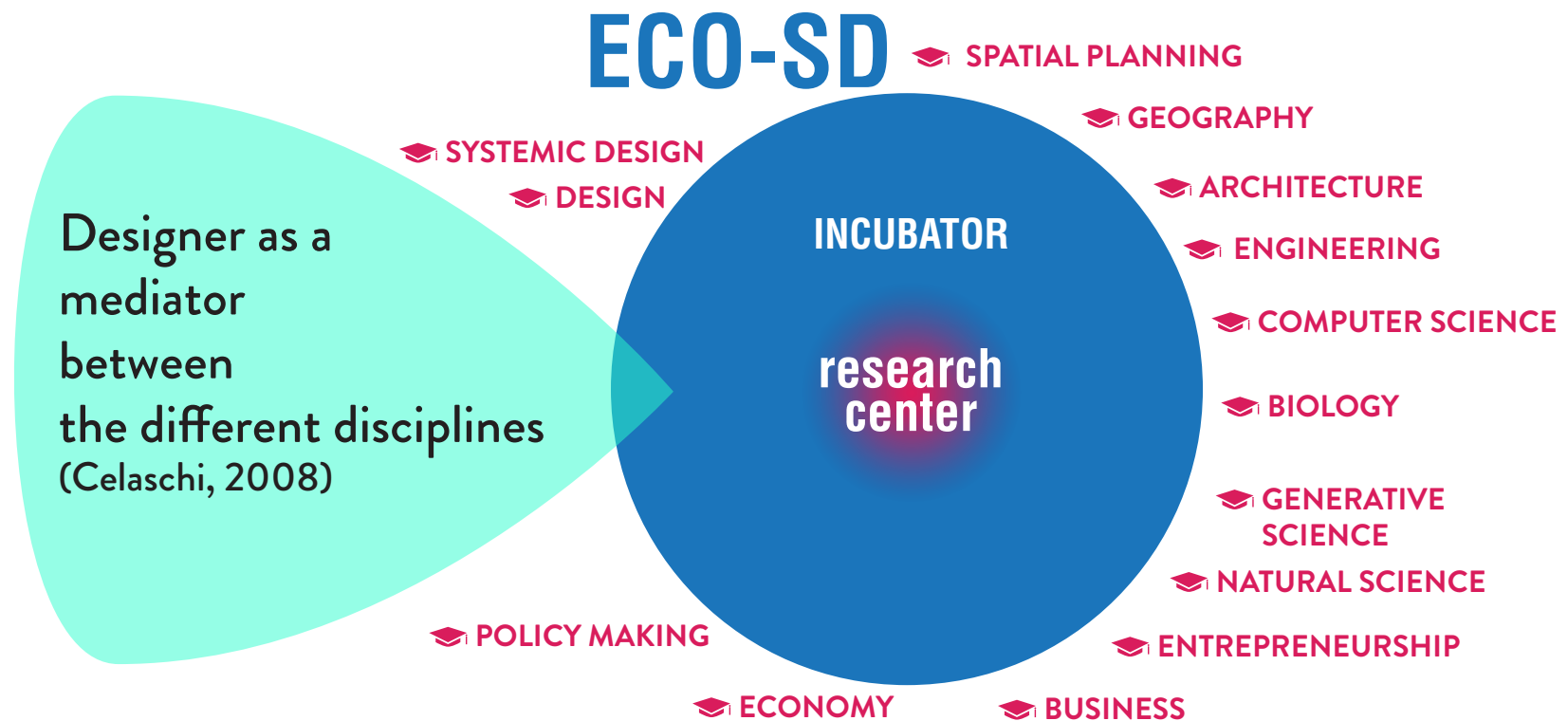


stimulate and create relationships

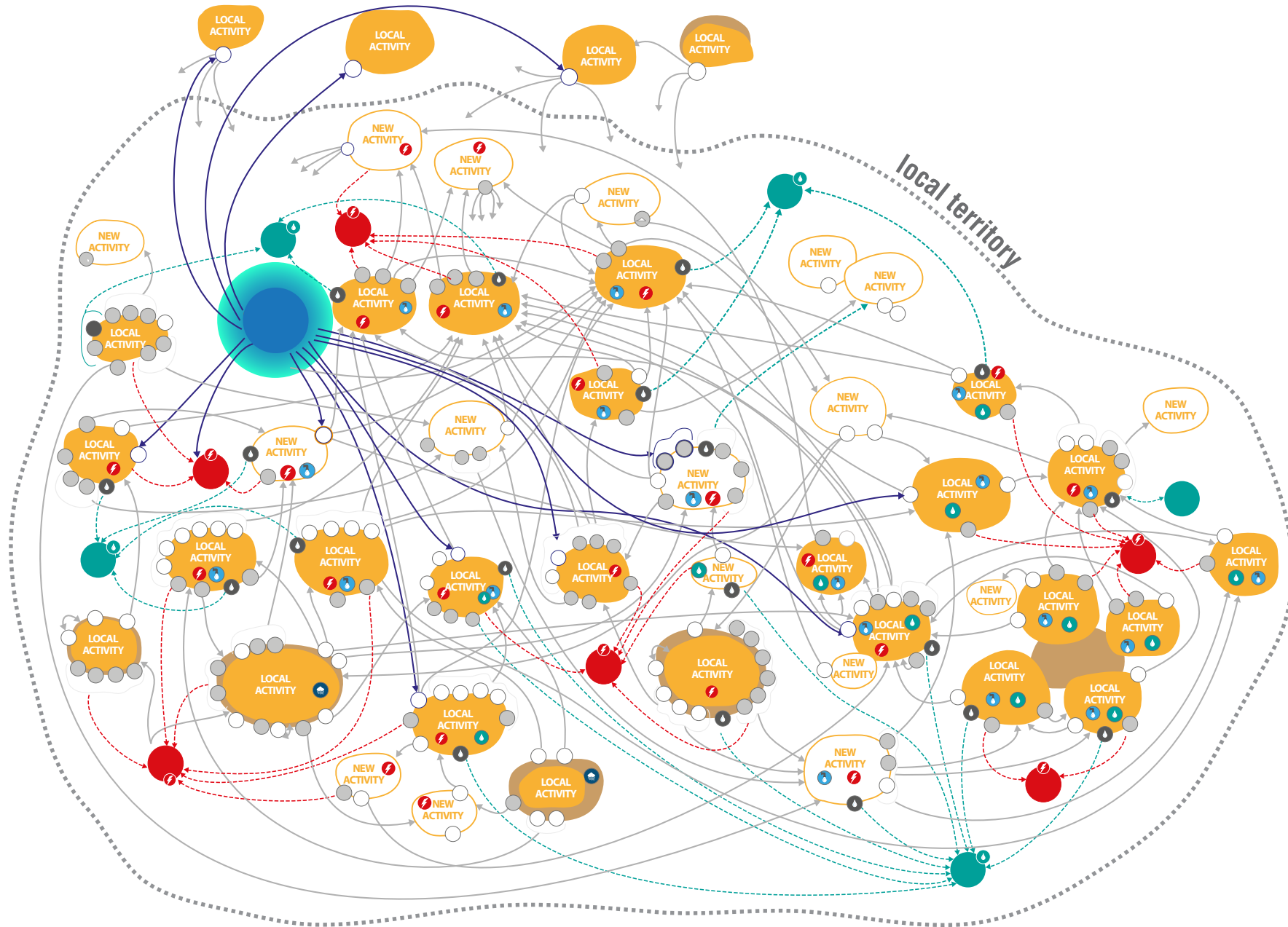
RESULTS ECOSYSTEM SD *project*

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*Its goal is to foster the reproduction of
productive processes acting as an
OPEN living SYSTEM*



RESULTS *possible future scenario*



ONGOIN (AND FUTURE) STUDIES

*individuation of
contexts of application*

*analysis on case of ecosystems
already presents with similar goals*



thank you for your attention

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