

Aral School, Nukus, 29 January 2026

# Bioregioning as Health Care **Slides with many words**

@johnthackara



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A short history

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My focus: Bioregioning as Health Care

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What agroecology needs from us

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Pastoralism

Fiber

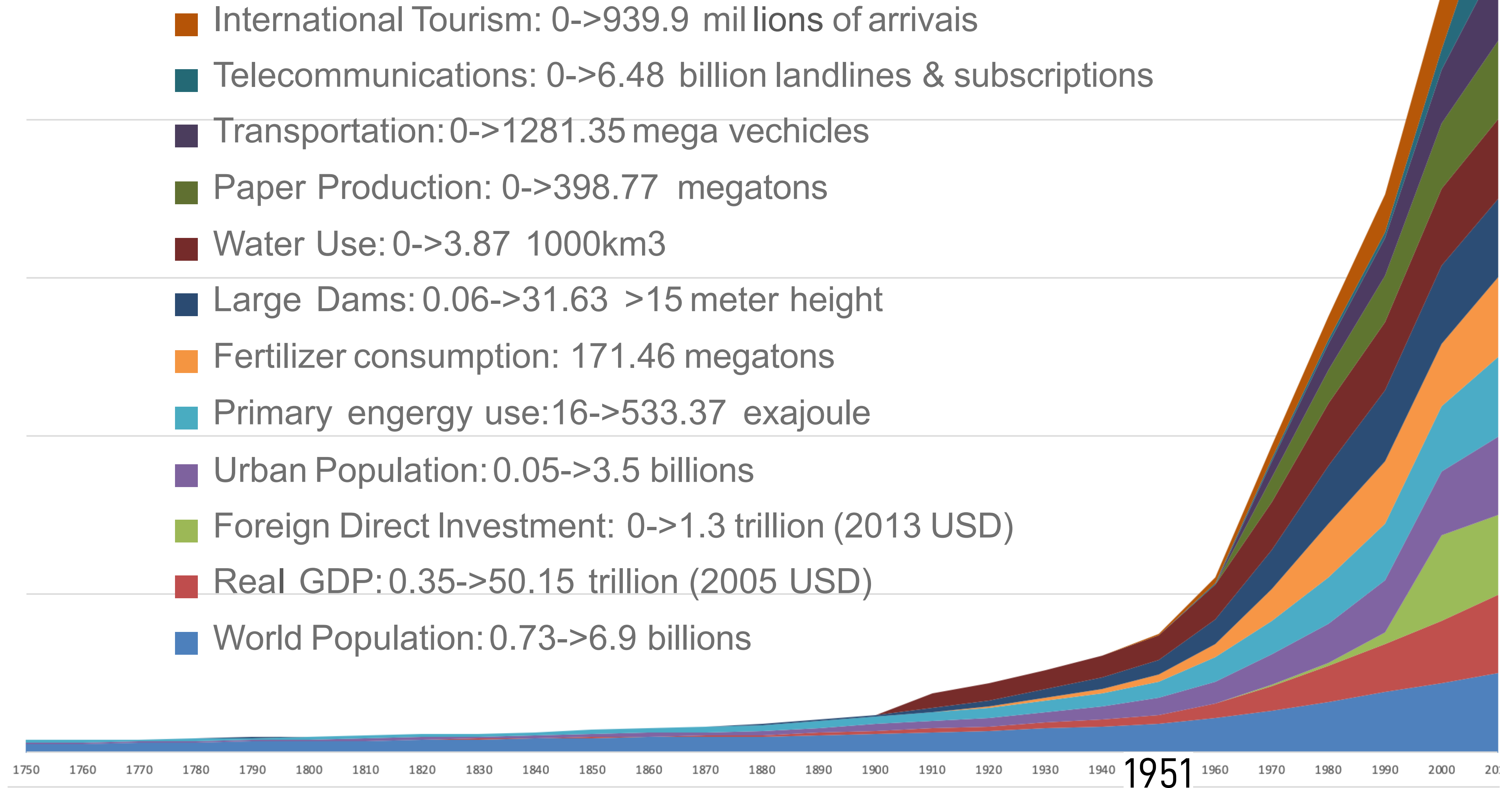
## C. Watersheds and Wetlands

## D. Bioregion as Classroom

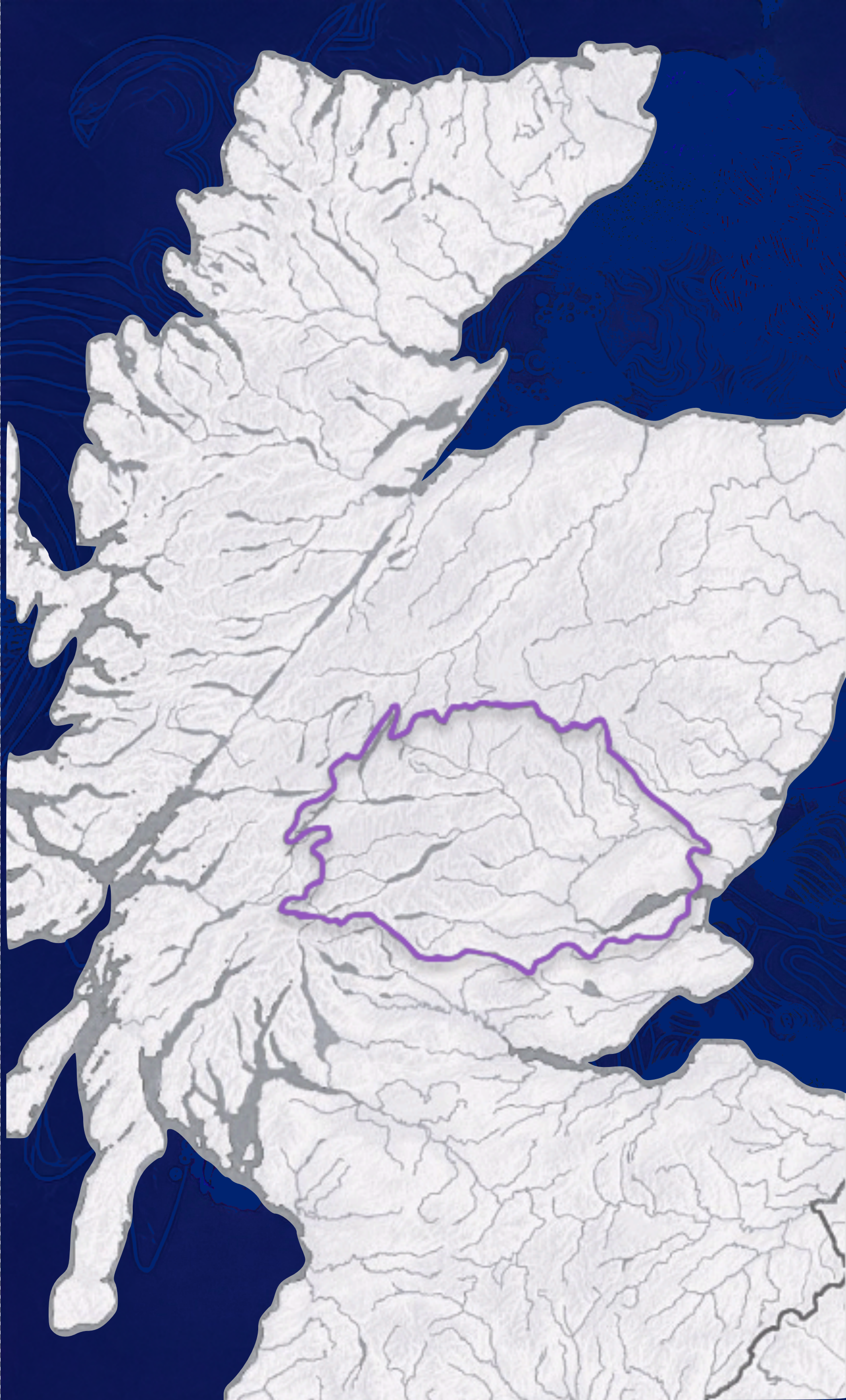
Ecological Knowledge Systems



## 1951-now: the 'great acceleration'







# "Bioregional Organizing: 15 Key Elements" (2025)

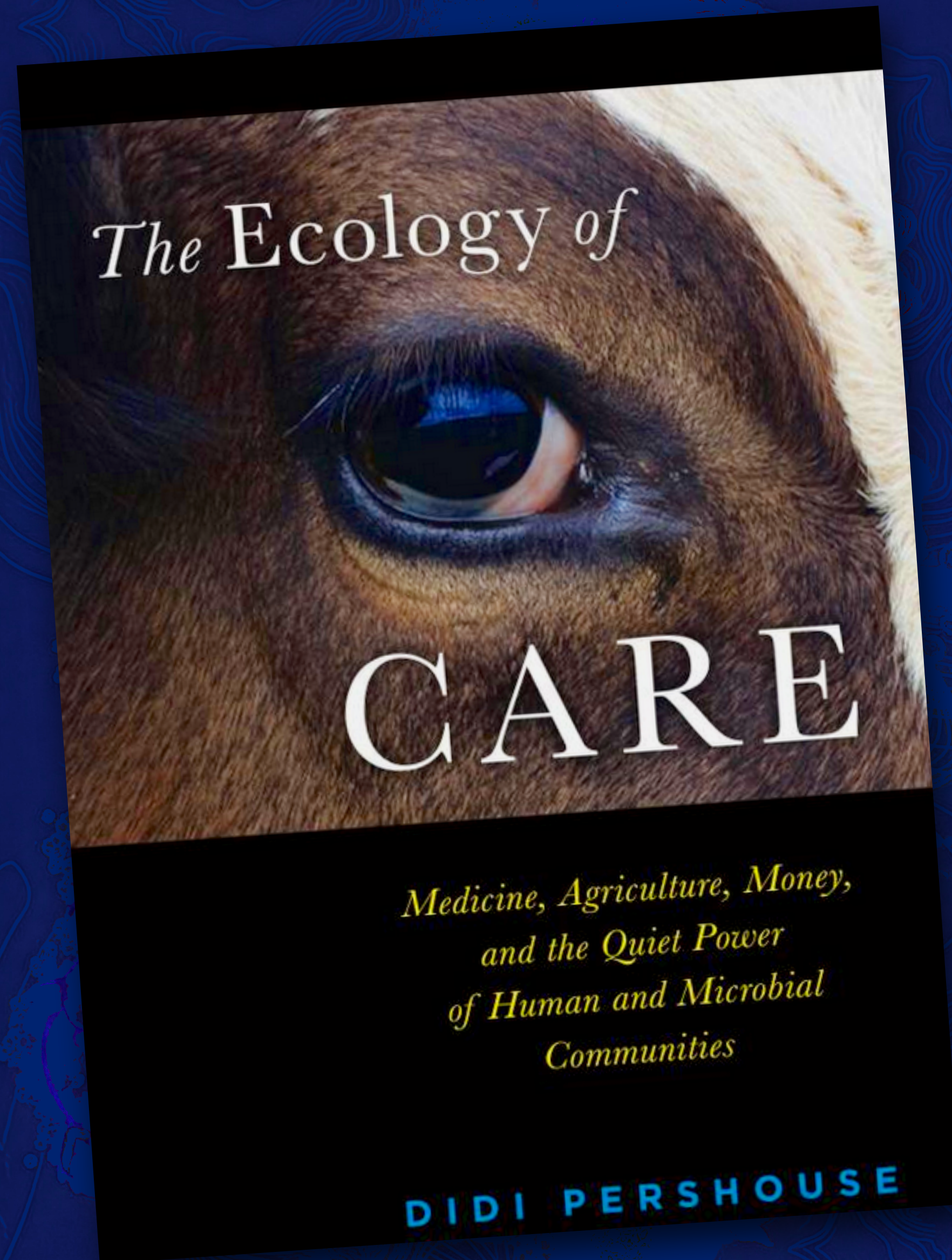
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- 15 **Planetary** Embeddedness

*Source*

Tayside Bioregioning: Stocktake and Gap Analysis

[bioregions.darkmatterlabs.org/tayside-bioregion-stocktake-gap-analysis](https://bioregions.darkmatterlabs.org/tayside-bioregion-stocktake-gap-analysis)





'whole-of-system care is  
a living, ongoing,  
relationship between,  
practitioner, patient,  
plants, and landscape'



DR DIDI PERSHOUSE





# Natural Farming (Agroecology)

1.5 billion small-scale farmers

89% of all farms

80% of world biodiversity

creates jobs, public health





## non-timber forest livelihoods >

Edible Food Forests

Alternative Trade Networks

School-Farm Biocantines

Social and Care Farming

Soil Care Workshops

Non-Timber Forest Experiences

Farm Hack Camps

Farmer Live Streaming

Cooperative Grain Networks

Fibersheds and Leathersheds

Nature Reconnection Tourism

Ecological Restoration Camps

Wetland Watershed and River Restoration

Bioregional Learning Centres

Storying Of Place

Ecomuseums and Forest Schools

Coders in the Countryside

Ecomuseums and Forest Schools

Folk High Schools



# Who Came? -----



France

**L'Atelier Paysan**

A cooperative of 800 peasants collaboratively building farm tools that create autonomy



Greece

**Tzoumakers**

A makerspace to collaboratively build tools for small-scale farming



Indonesia

**Serikat Petani Indonesia**

A union of 2 million peasants including an agroecological research program



Global

**Prolinnova**

A global network that promotes participatory innovation in ecologically oriented agriculture and natural resource management



Netherlands

**Toekomstboeren**

A network of farmers sharing knowledge and advocating for farmers' needs



Quebec

**La CAPÉ**

A cooperative of 150 small farmers and 25,000 customers with an *autoconstruction* program

**FARM HACK**



Kenya

**Kenyan Peasants League**

A community of farmers and technologists that build, modify, document and share their own tools



Belgium

**Fabriek Paysanne**

A collective that supports farmers' technological sovereignty

**OpenTEAM**

USA

**OpenTEAM**

A community of technologists and farmers creating a tech ecosystem that enables farmer control of data and knowledge sharing

**gian**

India

**GIAN**

A nationwide incubator for grassroots innovations and knowledge sharing network





## Farm Hack Tool library

We are a worldwide community of farmers that build and modify our own tools. This work is licensed under a Creative Commons Attribution 4.0 International License.



## Atelier Paysan Tutos

The Plans et Tutorials developed by L'Atelier Paysan



## Honey Bee Network Knowledge & Innovation Database (HBNKIND)

Honey Bee Network Knowledge & Innovation Database (HBNKIND) is the Honey Bee Network Knowledge and Innovation database based on farmers' creativity and sustainable practices. It is supported by Godrej Vet under their CSR program.



## Honey Bee Network database

HoneyBee published articles on innovations collected in the grassroots.



## WikiMaraicher

Le WikiMaraicher has been developed by La Coopérative pour l'Agriculture de Proximité Écologique. Le Wiki maraîcher a été mis sur pied afin de permettre aux acteur·rices de la communauté de pratique du maraîchage biologique au Québec et





回田  
Belonging-to-the-Field



康苗有機農場

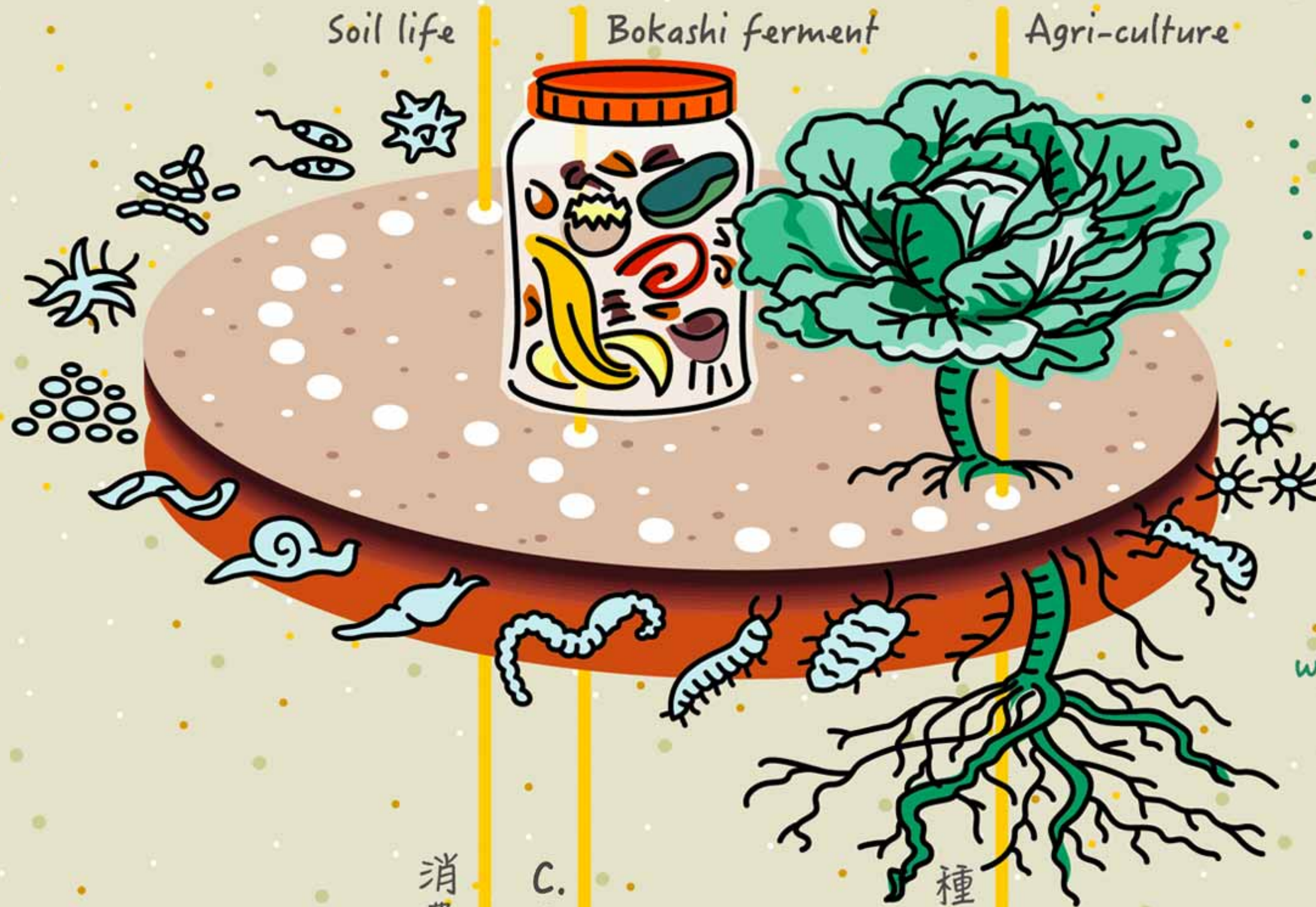


綠一點  
Go More Green

PolyU Design

RiFood  
Research Institute for Future Food  
未來食品研究所

DESIGNTRUST  
信言设计大使  
AN INITIATIVE OF THE  
HONG KONG AMBASSADORS  
OF DESIGN



回田歸嘢

Grow crops, and  
revitalise soils from  
your foodscraps  
in 100 days!

[www.facebook.com/soiltrust.hk](http://www.facebook.com/soiltrust.hk)

集「棄」還田100天

Co-inhabitation (storage)

Microorganisms

Temperature

Regular agitation

Process integrity

Respiration

Constant adaptation

生物  
Biological  
culture

發酵  
FERMENTATION

文化  
Social  
culture

Communities (regulation)

Humans (co-fermenters)

Trust reproduction (place)

Commitment (time)


Capabilities (skills)

Collaborative economies (resource access)

Eternal prototyping (design stance)

The concept of fermentation  
synthesized from S. Katz (2012)  
and D. Zilber (2019)





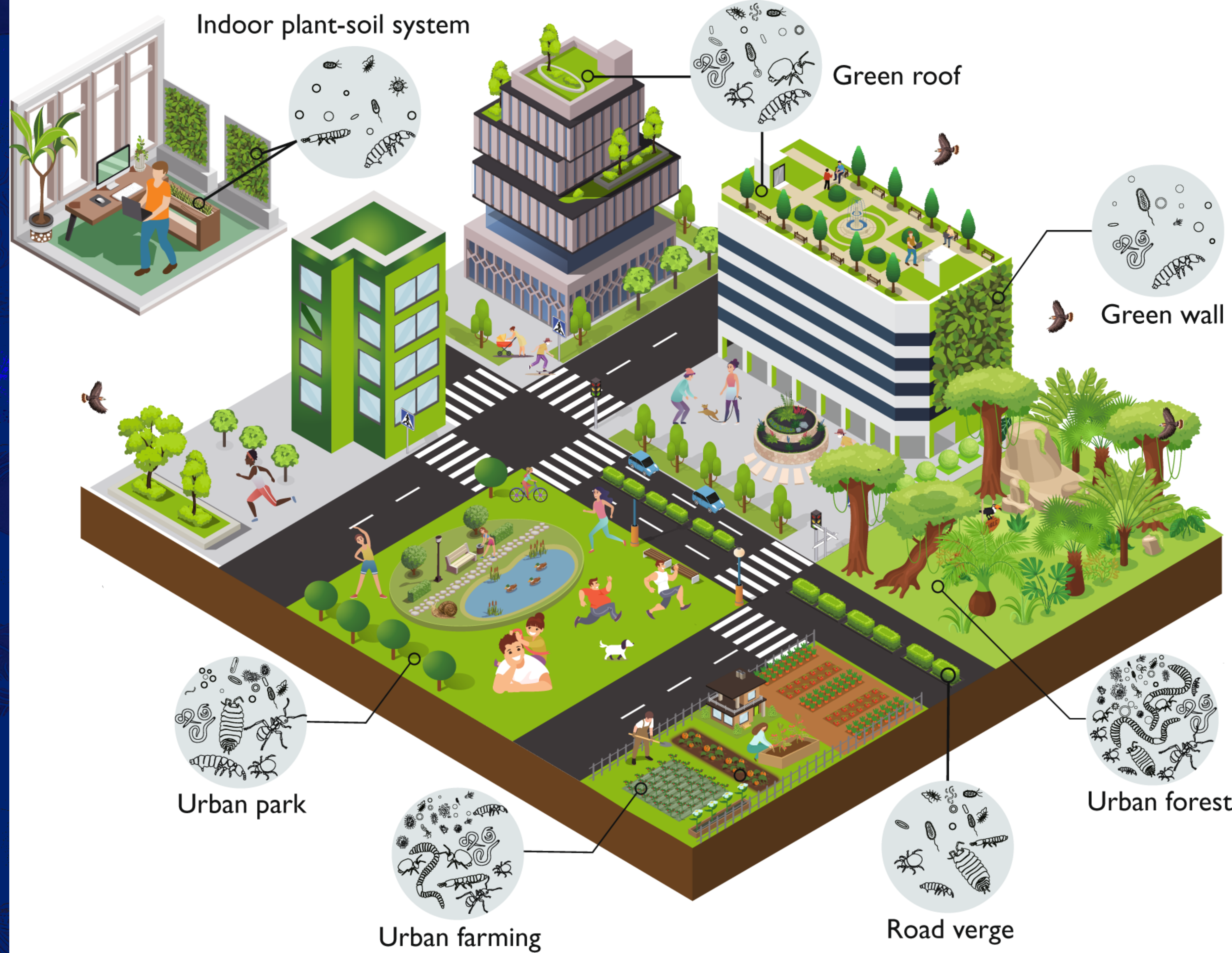
‘All living beings are members of  
ecological communities bound together  
in a network of interdependencies’

Frijol Capra



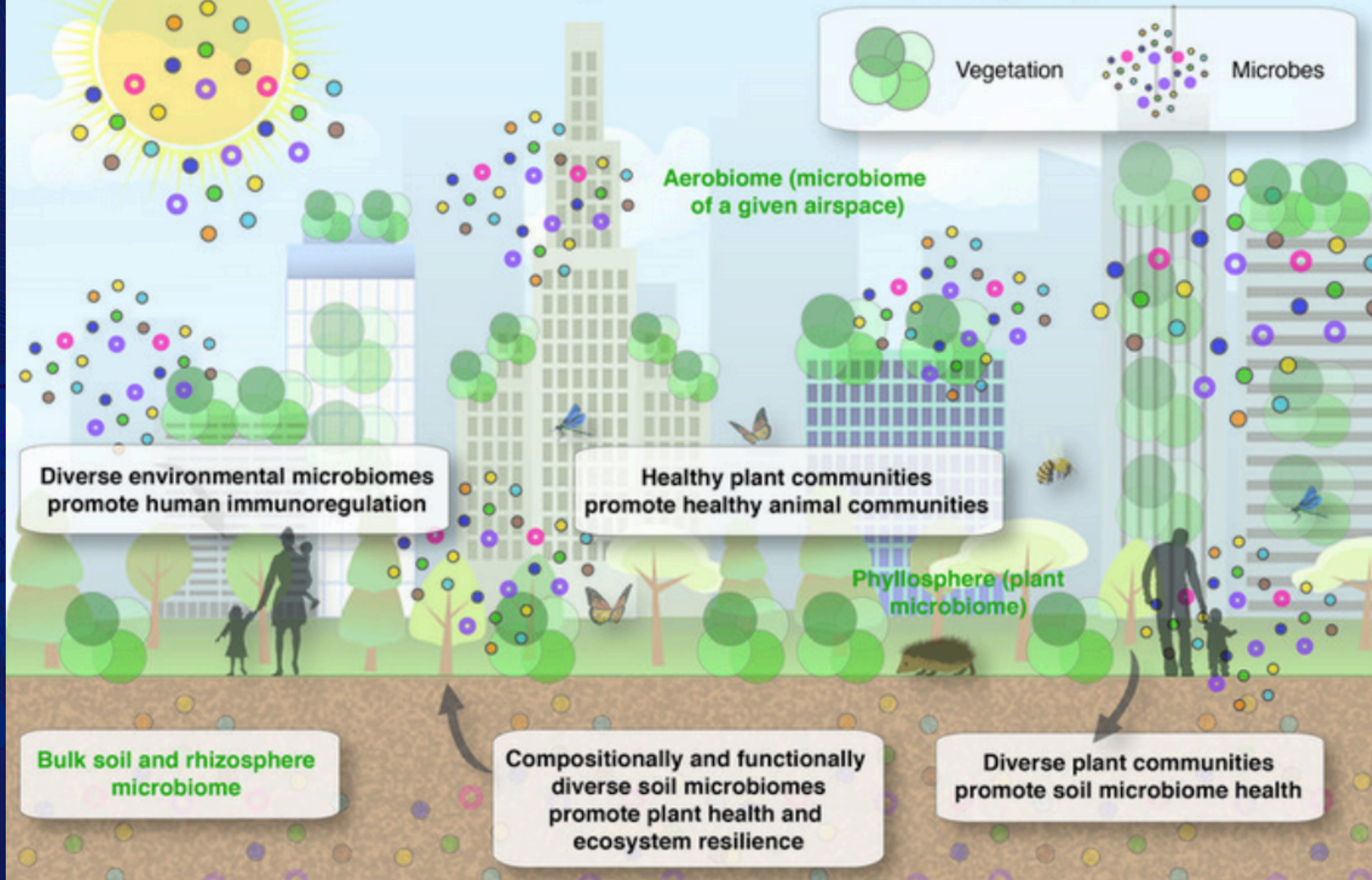
XIN SUN

# MICROBIAL URBANISM

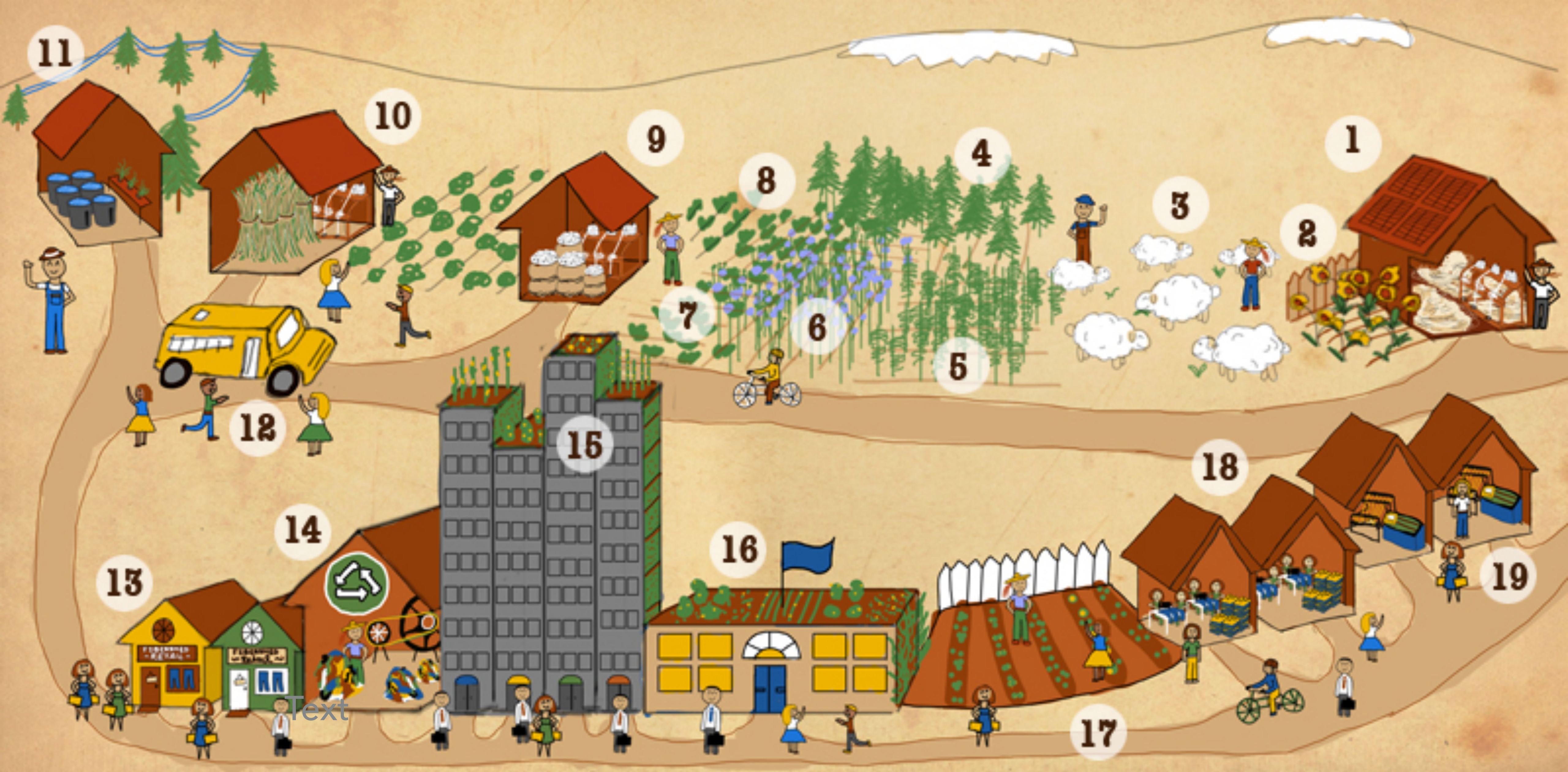




# Microbiome-Inspired Green Infrastructure (MIGI)







Fibershed: "a landscape that defines and gives boundaries to a natural textile resource"



Connecting

fiber farmer

knitter

weaver

designer

seamstress

felter

spinner

cotton farmer

natural dyer

mill owner

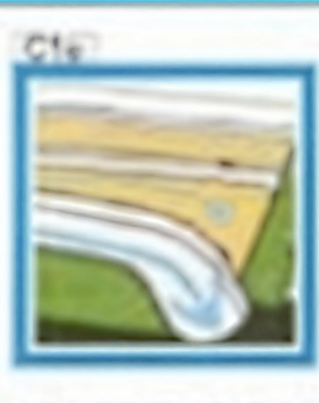
shop keeper



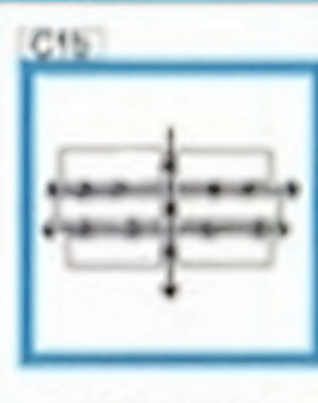




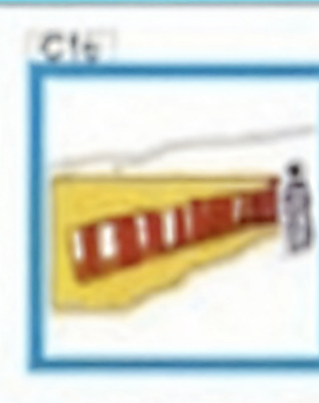
DIVERSION  
SYSTEMS ON A  
LARGE SCALE  
AND USE OF  
FLOODS



SYSTEMS OF  
COMMUNICATING  
BASINS FOR  
SHARING THE  
FLOODS



TORRENT  
STREETS



WIDE COMB  
SHARING  
SYSTEMS



WATER  
HARVESTING  
IN POOLS  
AND CISTERNS



THOLOS-CISTERNS,  
BELL-CISTERNS  
AND  
PIT-CISTERNS



ROOFED  
CISTERNS



LARGE  
OPEN-AIR  
CISTERNS



CONNECTED  
CISTERNS



CHANNELING AND  
CONCENTRATION  
OF RAIN ALONG  
THE SLOPES



CREATION OF  
GARDENS ON  
THE SIDES OF  
THE RIVERBED



COMBINED  
USE FOR  
CATCHMENT,  
DISTILLATION AND  
CONDENSATION



INTEGRATED USE  
OF WATER  
CATCHMENT,  
HARVESTING AND  
DISTRIBUTION



DRIPPING OF  
WATER AND  
PERCOLATION  
IN THE  
CAVE-DWELLINGS



STONE AND  
OTHER  
MATERIALS  
DAMS



DIKE OF WATER  
DIVERSION FROM  
PERPETUAL  
SNOWS  
(RITISE)



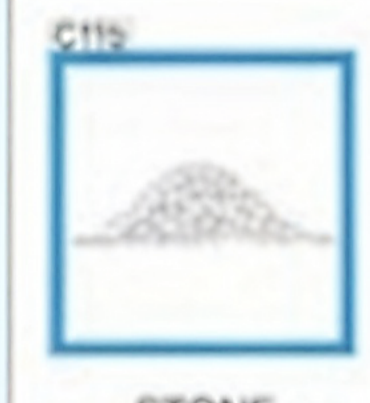
HYDROGENESIS  
AND HIDDEN  
PRECIPITATIONS



HUMIDITY  
CONDENSATION  
TECHNIQUES



WATER  
STORAGE IN  
CISTERN-JAKS



STONE  
BARROWS



STONE  
ARRANGEMENT  
AND USE OF  
SURFACES FOR  
CATCHMENT



MASONRY  
FOR HUMIDITY  
CATCHMENT



EXCAVATIONS  
AND DRAINAGE  
SYSTEMS



EXCAVATION  
AND DRAINAGE  
SYSTEM USED  
IN MINES



DIGGING  
CAVES TO  
CATCH WATER



HYDRAULIC  
DEVICES



SUNKEN  
DAMS



UNDERGROUND  
CATCHMENT  
TUNNELS



ROCKER  
ARMS WELLS



WELLS  
PULLED BY  
ANIMALS



BIG LIFTING  
DEVICES  
(NORIAS)



WATER-MILL



WATER  
MANAGEMENT  
ON TERRACED  
FIELDS



# Artificial Oyster Reef Project, Product Service System Design

产品服务系统设计 人工牡蛎礁项目

发件人 Jixiang Jiang

**Implementation of design tools for relational thinking in design for social innovation - a pluralistic perspective from Weitou Village's oyster reef restoration project.**

Jixiang Jiang<sup>1</sup>, Yizao Wu<sup>2</sup>, Shu Zhang<sup>3</sup>

Jixiang.jiang@polimi.it



# Oyster Reef Restoration

## Social:

practical, local, participatory

## Ecological

reef ecology & human ecology

## Cultural:

Five Elements

local religious beliefs

## Physical:

3D printing of reef modules

recycled oyster shells

temples & public spaces

## Economic

services, experiences, jobs

### Concept Storyboard

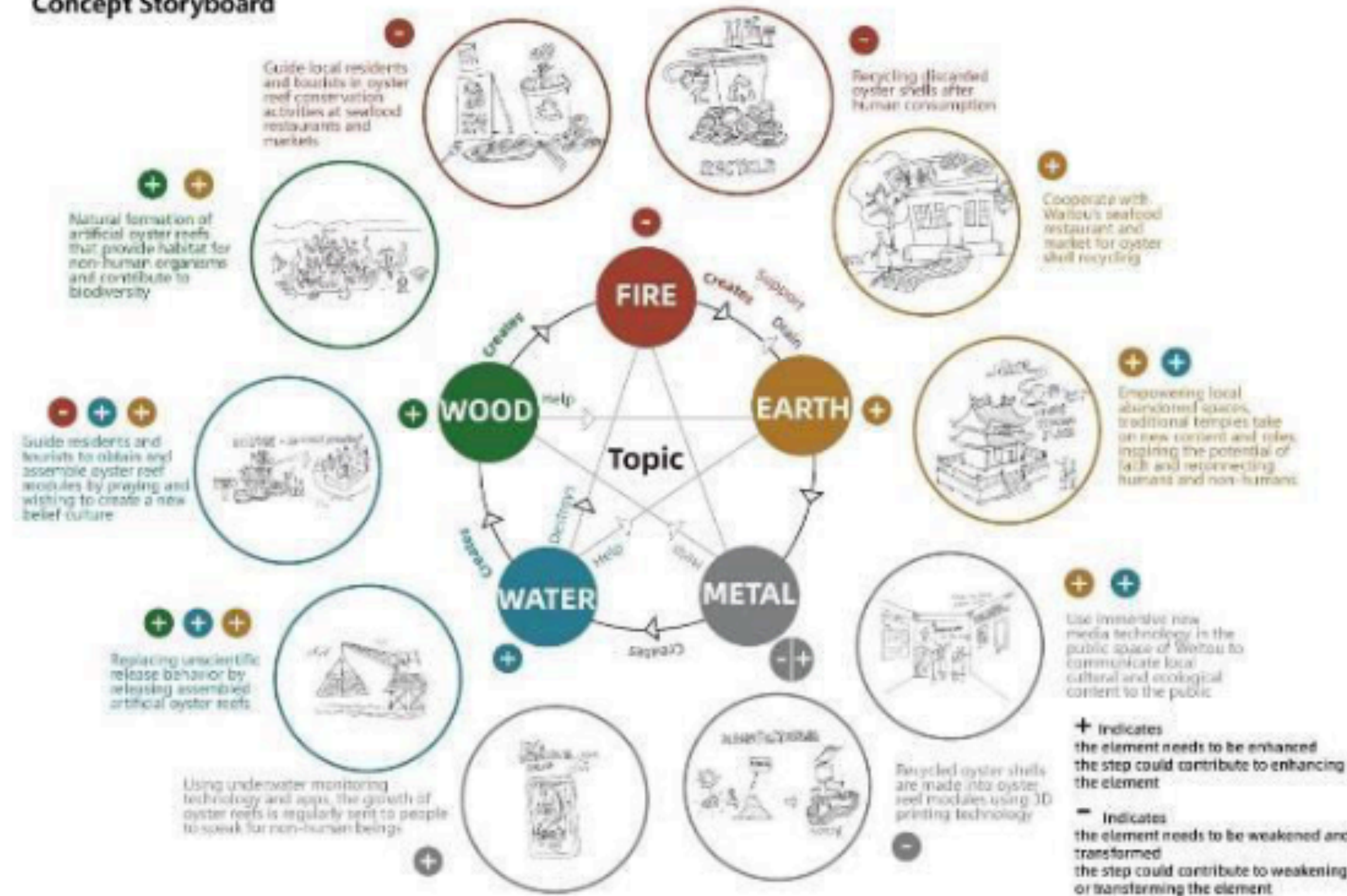


Figure 17. Weitou Village Five Elements Design Intervention Draft

Five Elements: humans and nature as one system

五行 将人类和自然统一在一个系统中



The work of a village host is *connective*.

It enables stakeholders to work together in diverse ways.

storying of place

explore and map resources (projects, places, individuals)

showcase projects (to each other, to citizens, to business)

curate activities and outcomes

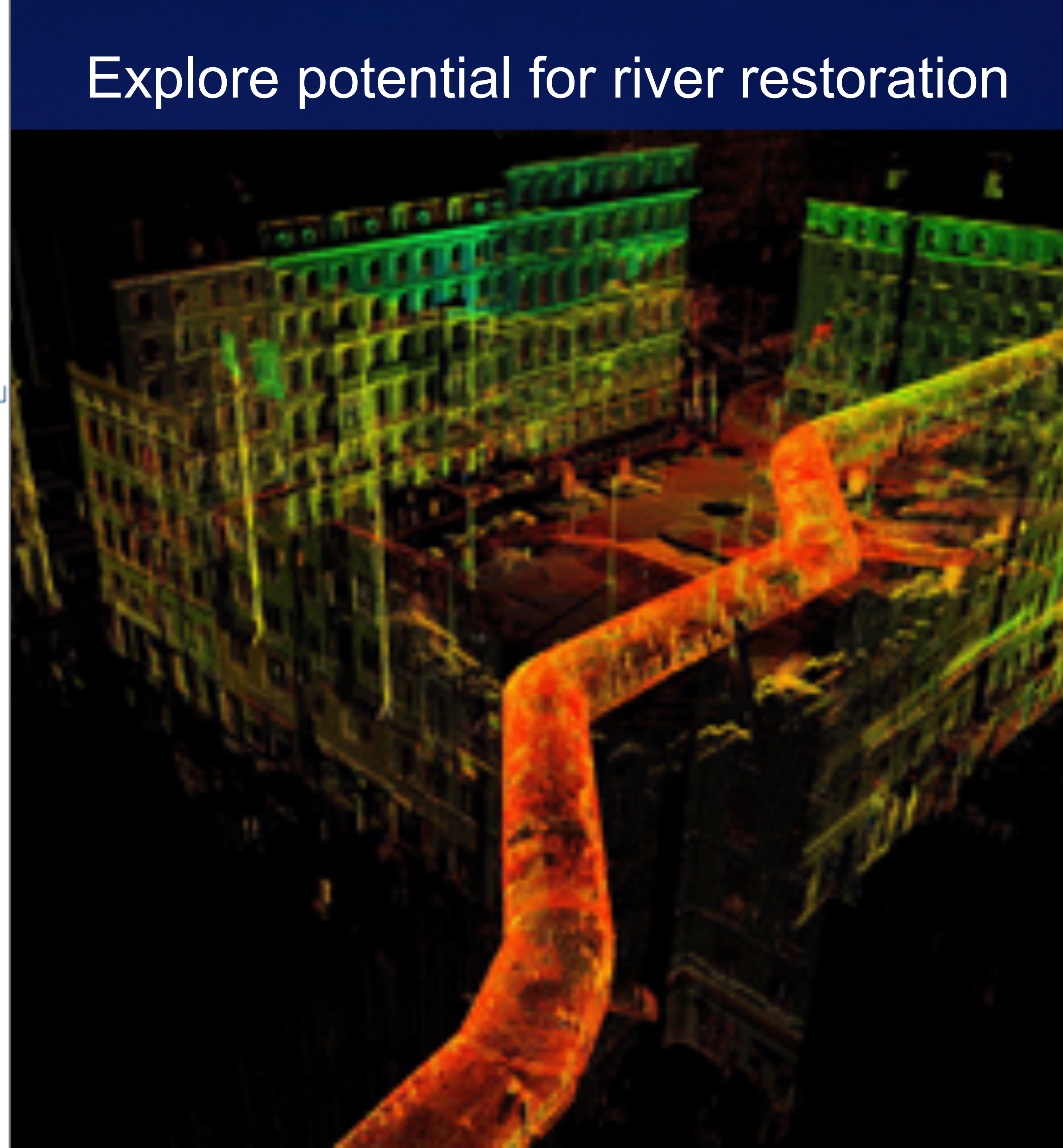
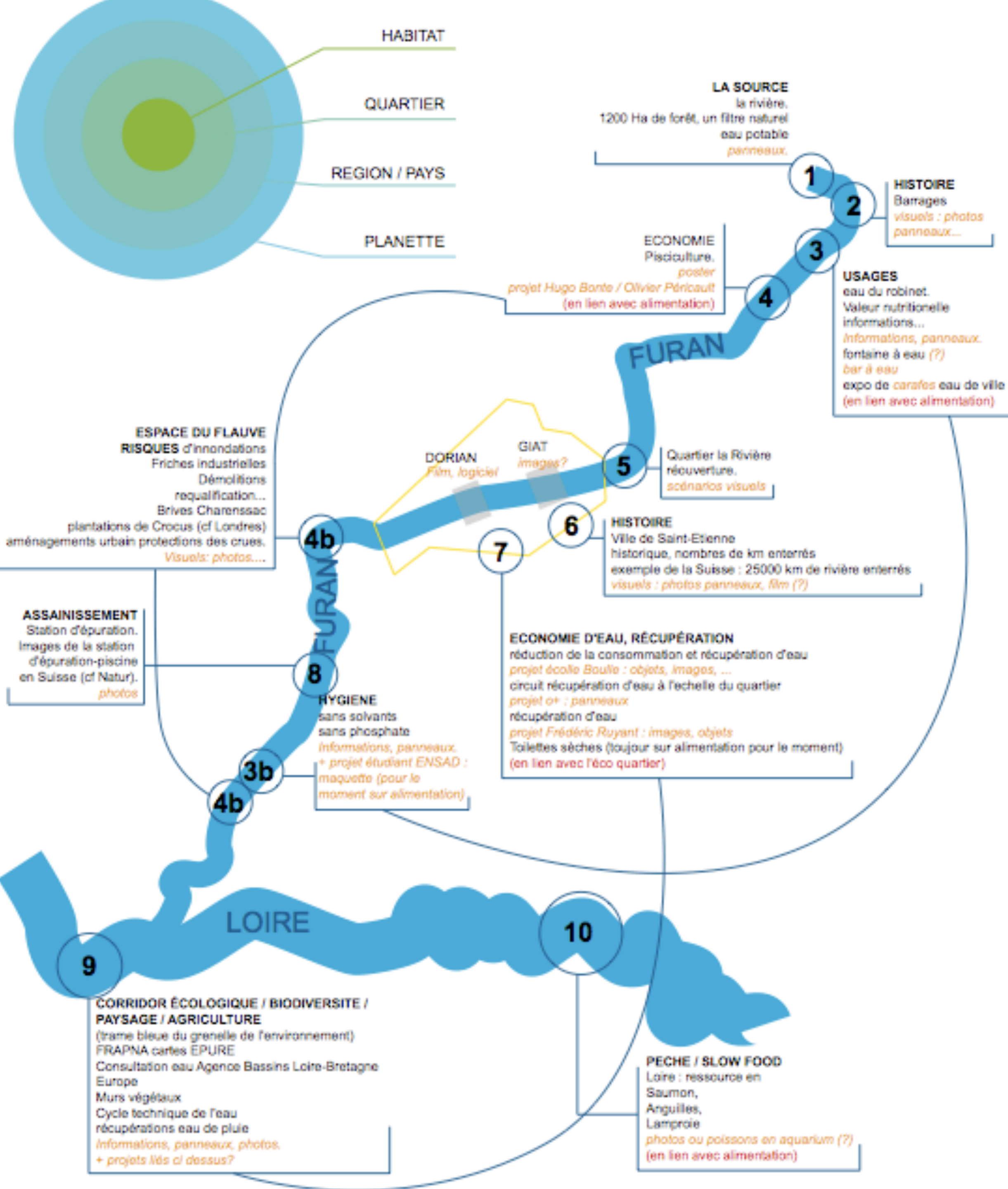
make and test service prototypes

test new business models

establish a learning and cooperation platform (hub, lab)

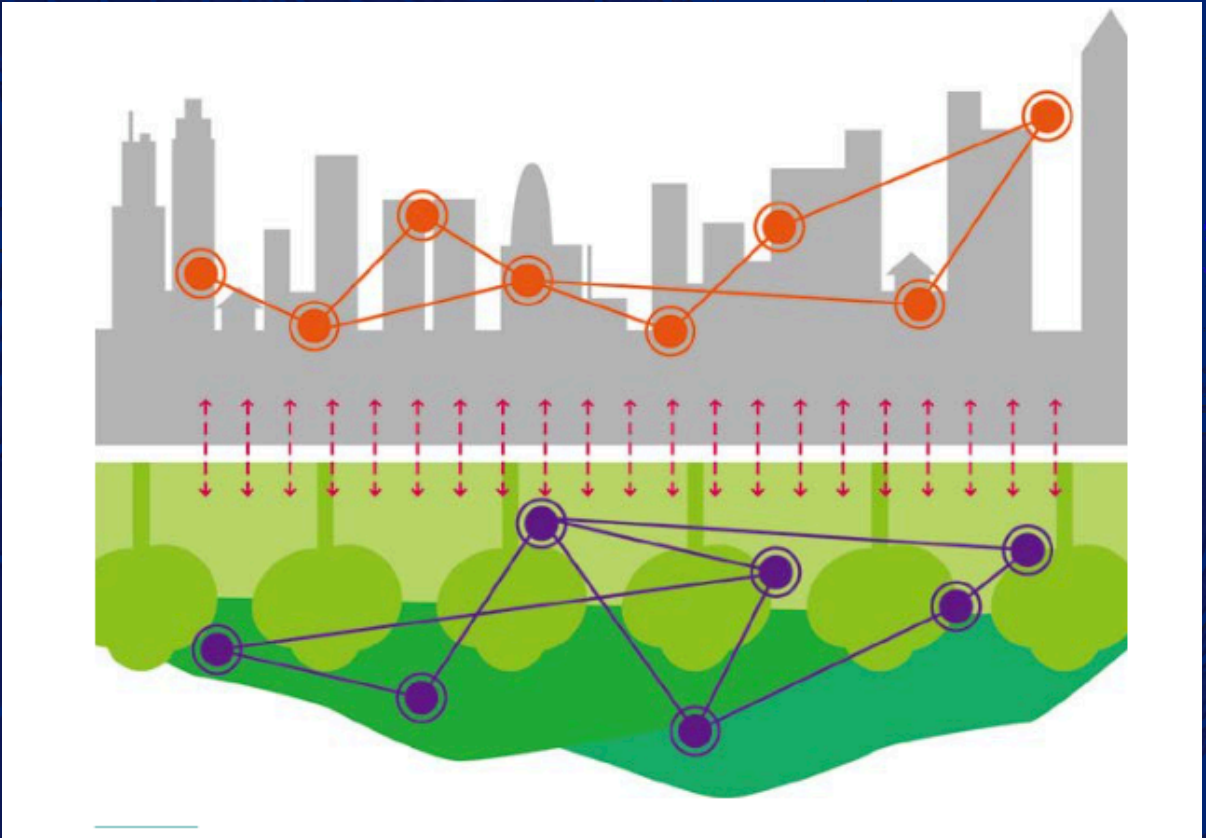


# Explore potential for river restoration

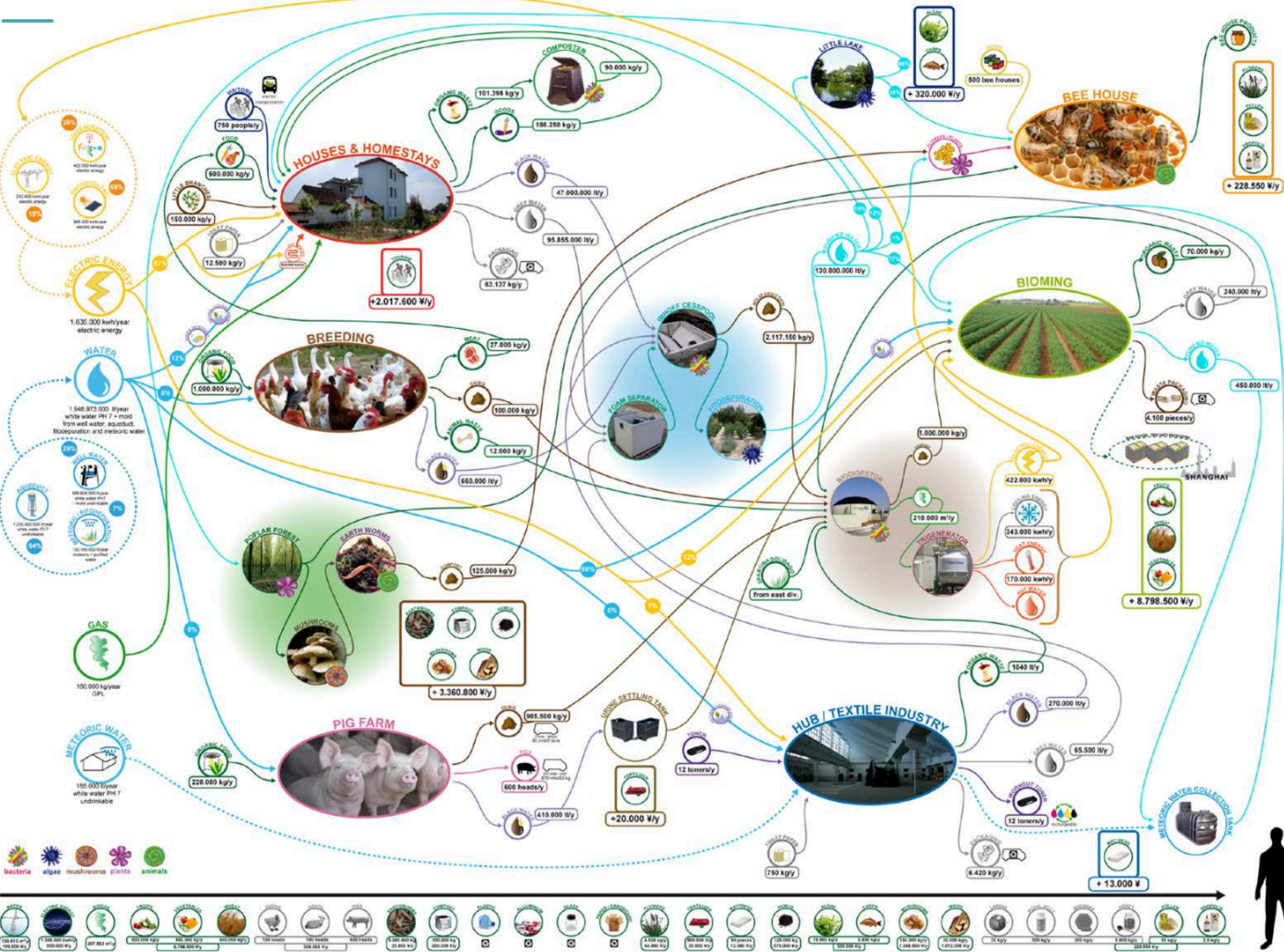




# bioregion as campus



General overview map and details of natural resource systems on Chongming Island







# new jobs in urban-rural

ecological restoration  
agro-ecological farming  
bioregioning  
watersheds & wetlands  
civic ecology  
farmer-city live-streaming  
grainsheds, fibersheds  
rural oases  
maker networks  
code clubs  
ecotourism  
learning journeys  
rural hubs & platforms

[thackara.com/about/urbanruralprojects](http://thackara.com/about/urbanruralprojects)



# 现场教室：基于地方型学习的萌芽

## LIVING CLASSROOMS: THESE ARE THE GREEN SHOOTS OF PLACE-BASED LEARNING

中国与亚洲 · China and Asia



**转向生态文明**  
Transitioning to an Ecological Civilization

北京乡村建设中心与罗马尼亚乡村发展局合作，开展了一项名为“转向生态文明”的项目。该项目旨在通过组织村民参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高村民的生态意识。项目还通过组织村民参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高村民的生态意识。



**农民学院（城乡之桥）**  
Farmer Institute (Urban-Rural Bridge)

“在城乡之间建立一种新的联系，”这是农民学院（城乡之桥）的宗旨。该学院旨在通过组织农民参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高农民的生态意识。学院还通过组织农民参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高农民的生态意识。



**爱知县大学**  
Aichi University

在爱知县大学的一个项目中，学生们正在参与一项名为“爱知县大学”的项目。该项目旨在通过组织学生们参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高学生们的生态意识。项目还通过组织学生们参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高学生们的生态意识。



**昆山有机农场**  
Kunshan Organic Farm

中国第一个通过有机认证的农场，昆山有机农场位于江苏省昆山市。该农场旨在通过组织农民参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高农民的生态意识。农场还通过组织农民参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高农民的生态意识。



**昆山砖厂**  
Kunshan Brick Factory

昆山砖厂是一个位于江苏省昆山市的砖厂。该砖厂旨在通过组织工人参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高工人的生态意识。砖厂还通过组织工人参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高工人的生态意识。



**北京小农市场**  
Little Green Market, Beijing

北京小农市场是一个位于北京市的小农市场。该市场旨在通过组织农民参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高农民的生态意识。市场还通过组织农民参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高农民的生态意识。



**百胜农**  
Bosun Farm

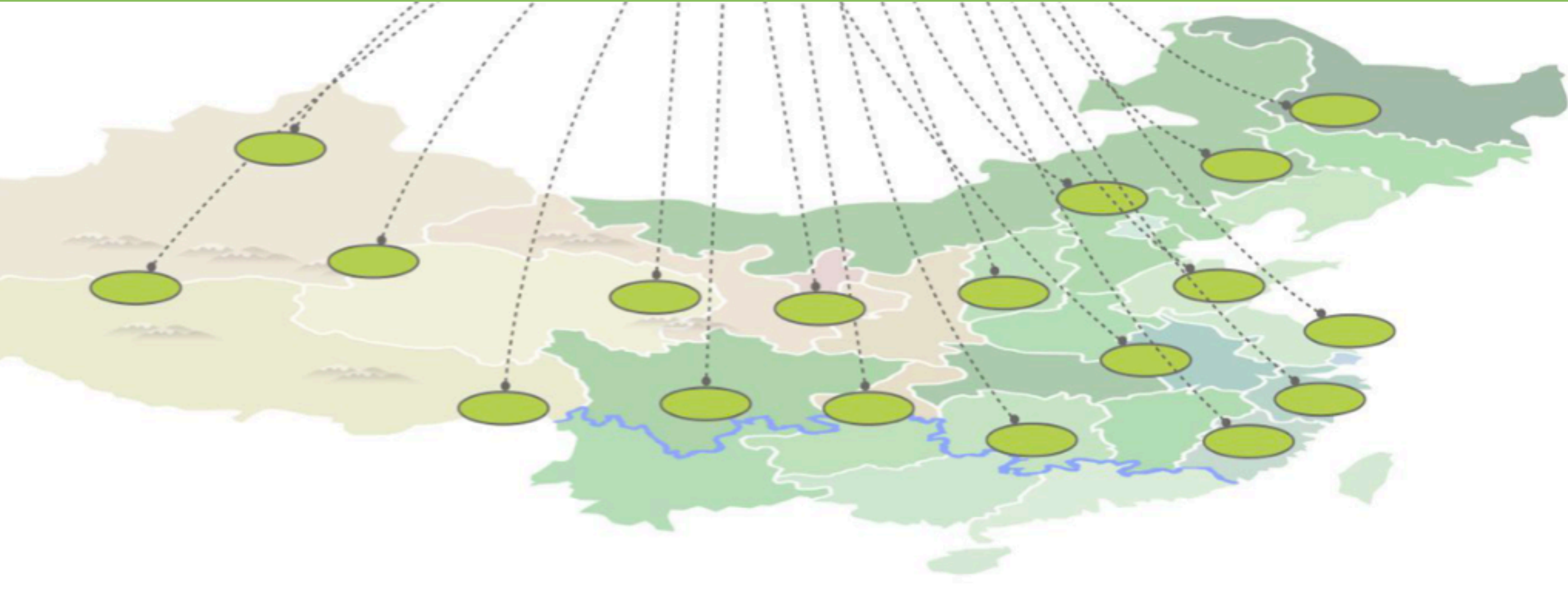
百胜农是一个位于江苏省百胜镇的农场。该农场旨在通过组织农民参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高农民的生态意识。农场还通过组织农民参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高农民的生态意识。



**千代田中心，日本**  
Thousand Years Center, Japan

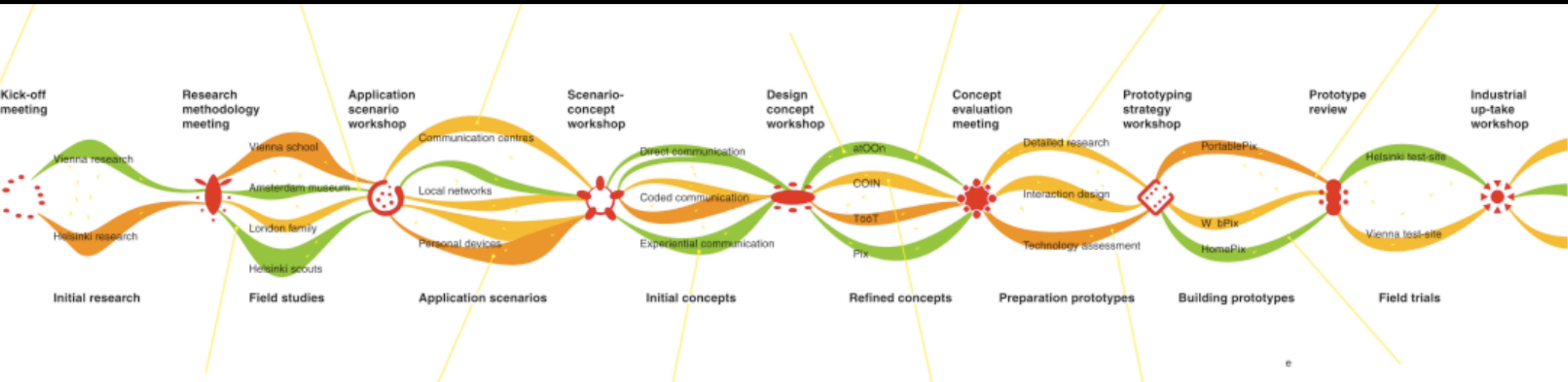
千代田中心是一个位于日本千代田市的中心。该中心旨在通过组织人们参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高人们的生态意识。中心还通过组织人们参与各种生态活动，如植树造林、保护水源、使用可再生能源等，来提高人们的生态意识。

令人欣慰的是，为设计师提供在地学习的例子开始涌现





## a *flow* of activities and outcomes



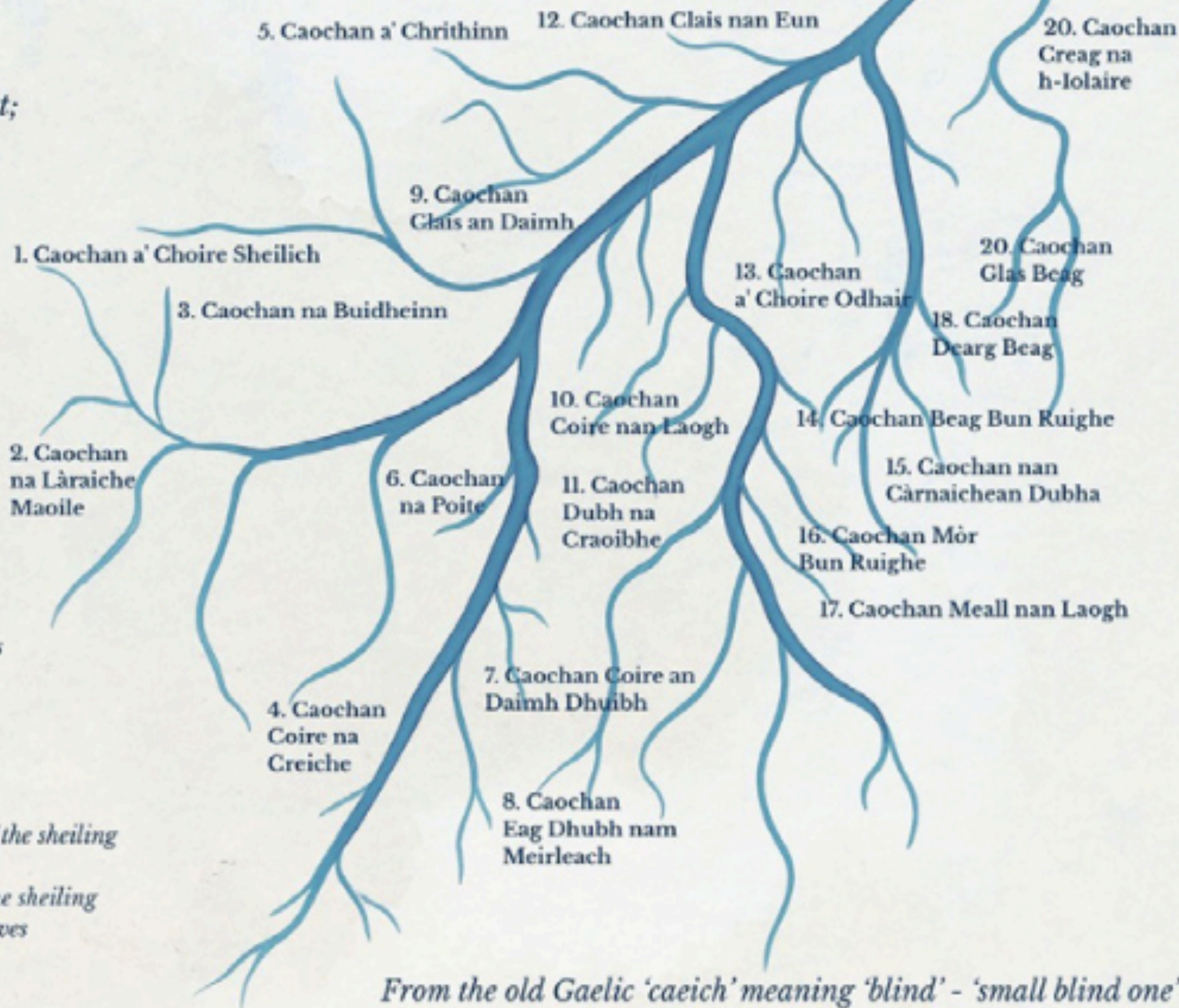
maps of actors and resources  
service prototypes  
system architectures  
new business models  
stories



# Caochan

*a fine moorland rivulet;  
a purling rill.*

1. of the willow corrie
2. of the base ruins
3. of the party
4. of the corrie of the raid
5. of the aspen
6. of the pot
7. of the corrie of the black stag
8. of the black gap of the thieves
9. of the hollow of the stag
10. of the corrie of the calves
11. black caochan of the tree
12. of the hollow of the birds
13. of the dun coloured corrie
14. small caochan of the base of the sheiling
15. of the black cairns
16. big caochan of the base of the sheiling
17. of the rounded hill of the calves
18. little red caochan
19. litte grey caochan
20. of the rock of the eagle



*From the old Gaelic 'caeich' meaning 'blind' - 'small blind one'  
- a stream so obscured by vegetation it cannot see out of its own bed.*





The British Academy

# Integrating Intangible Cultural Heritage in nature recovery: a place- sensitive approach in the Scottish Highlands

Mairi McFadyen, Chris Mackie, Elle Adams  
and Raghnaid Sandilands