

Barcelona Green Metropolis:

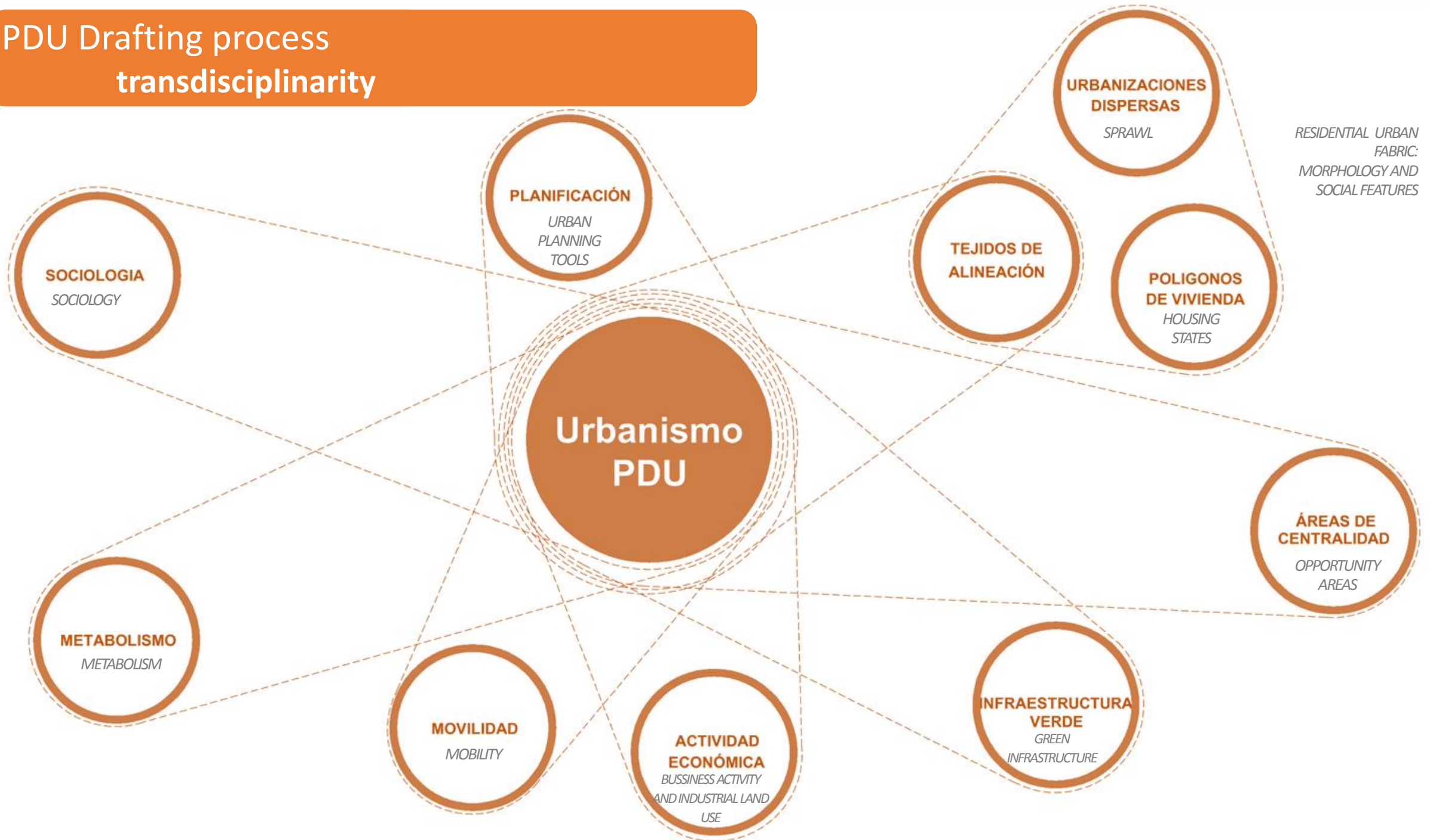
ecology, leisure and production

Relation and interaction spaces

MAIN CHALLENGES

1. New vision
2. Diversity into a common project
3. Innovative methodology

PDU Drafting process transdisciplinarity



Change the vision

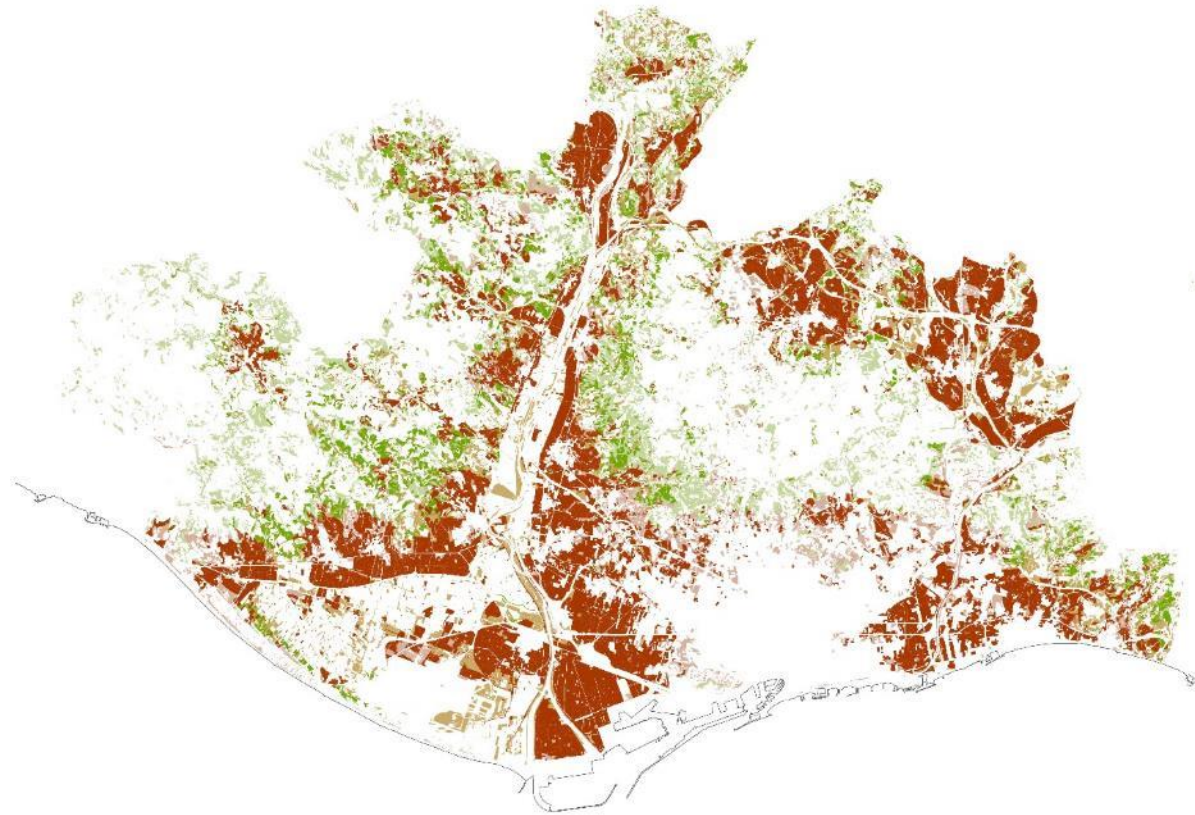
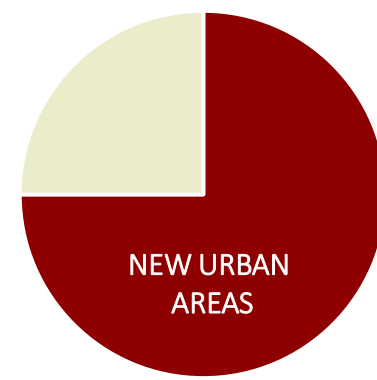


green infrastructure:
52% of metropolitan area

Agroforestry variety

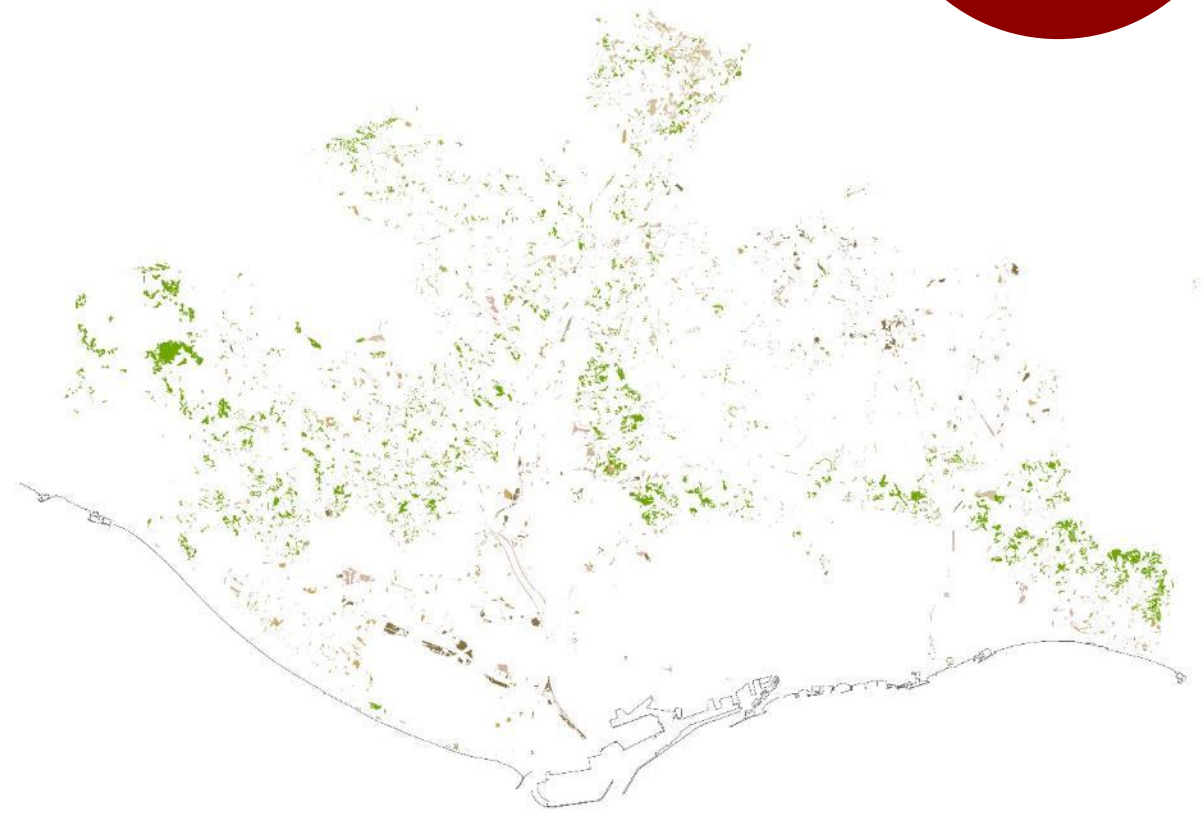
LOST AGRICULTURAL AREAS (FROM 1956 TO 2009)

75%



1956-2015

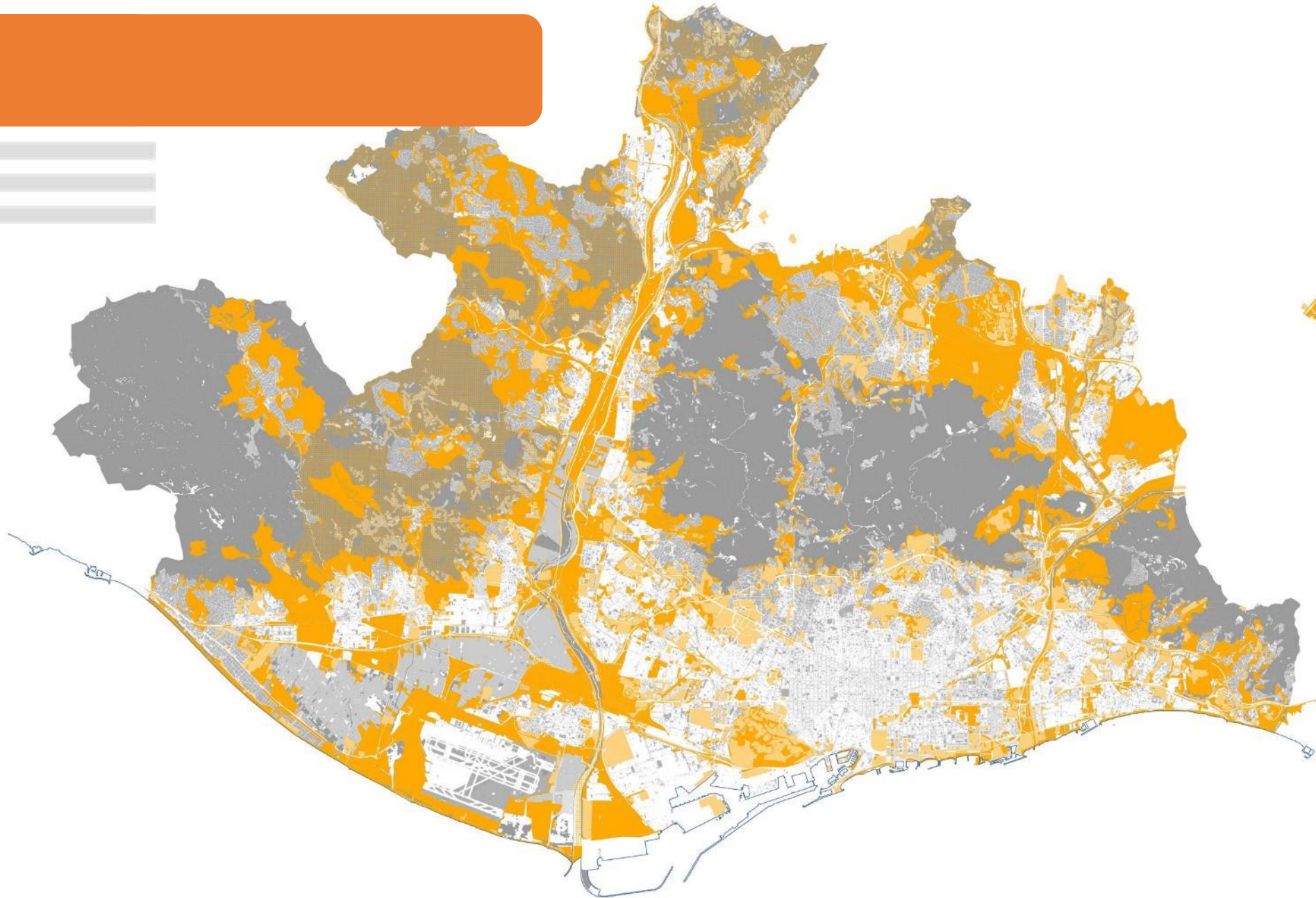
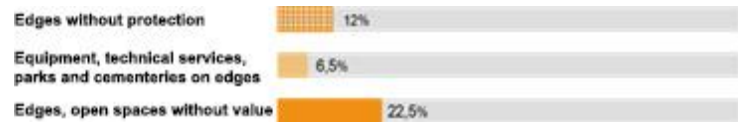
Crops	1956-Urban fabric	2015	10.954 ha
Meadows and scrub	1956-Forest	2015	4.128 ha
Crops	1956-Meadows and scrub	2015	3.673 ha
Meadows and scrub	1956-Urban fabric	2015	2.798 ha
Crops	1956-Forest	2015	2.512 ha



2009-2015

Meadows and scrub	2009-Forest	2015	1.621 ha
Forest	2009-Meadows and scrub	2015	370 ha
Crops	2009-Meadows and scrub	2015	366 ha
Meadows and scrub	2009-Urban fabric	2015	321 ha
Urban fabric	2009-Meadows and scrub	2015	301 ha

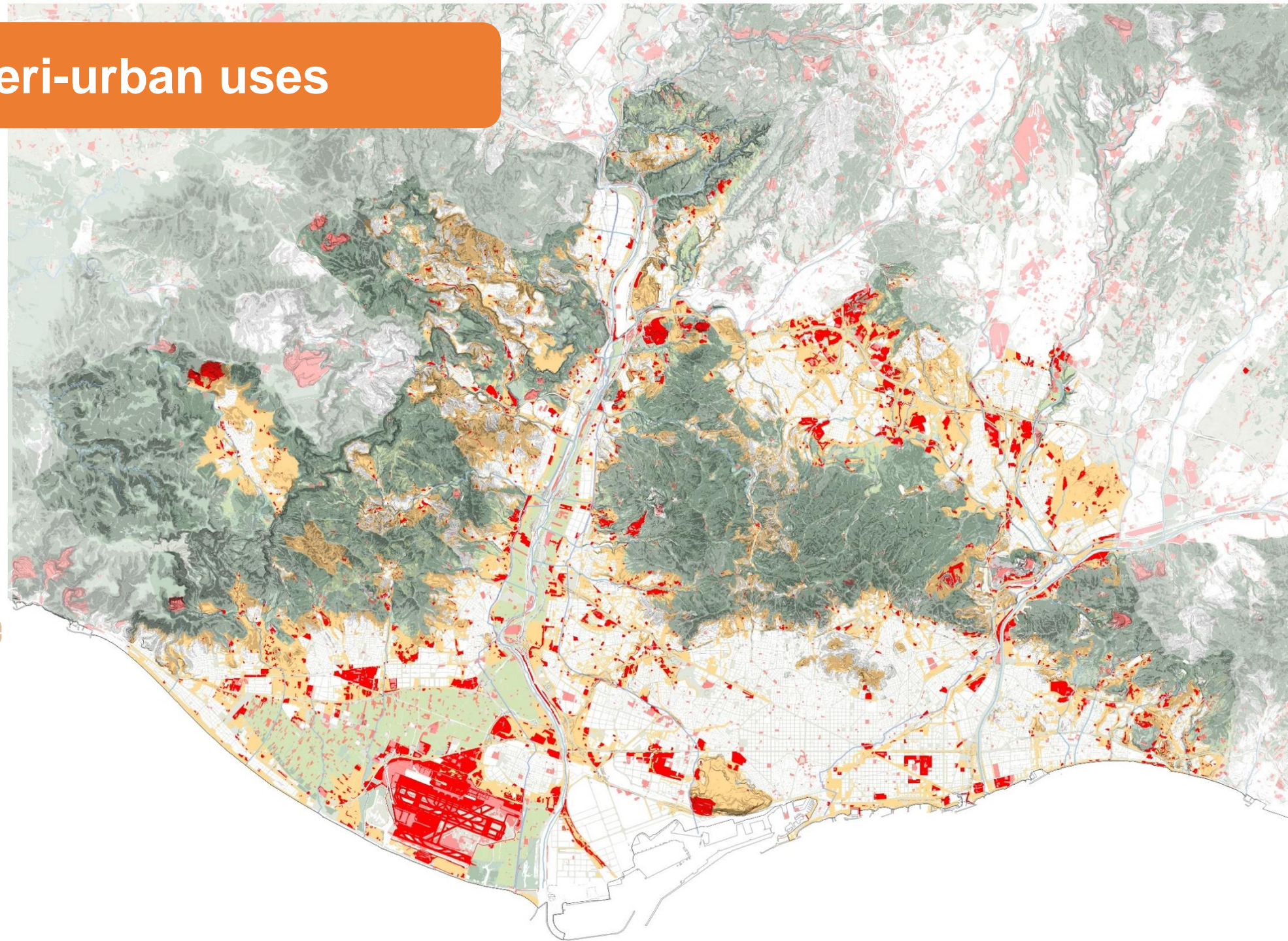
Edges



12.408 ha

edges: **19%** of
metropolitan territory

Framework: Peri-urban uses



Electrical Infrastructure

Cementeries

Earth Works

Parking Area

Isolated Industry

Airport

Housing

Water treatment

Greenhouses

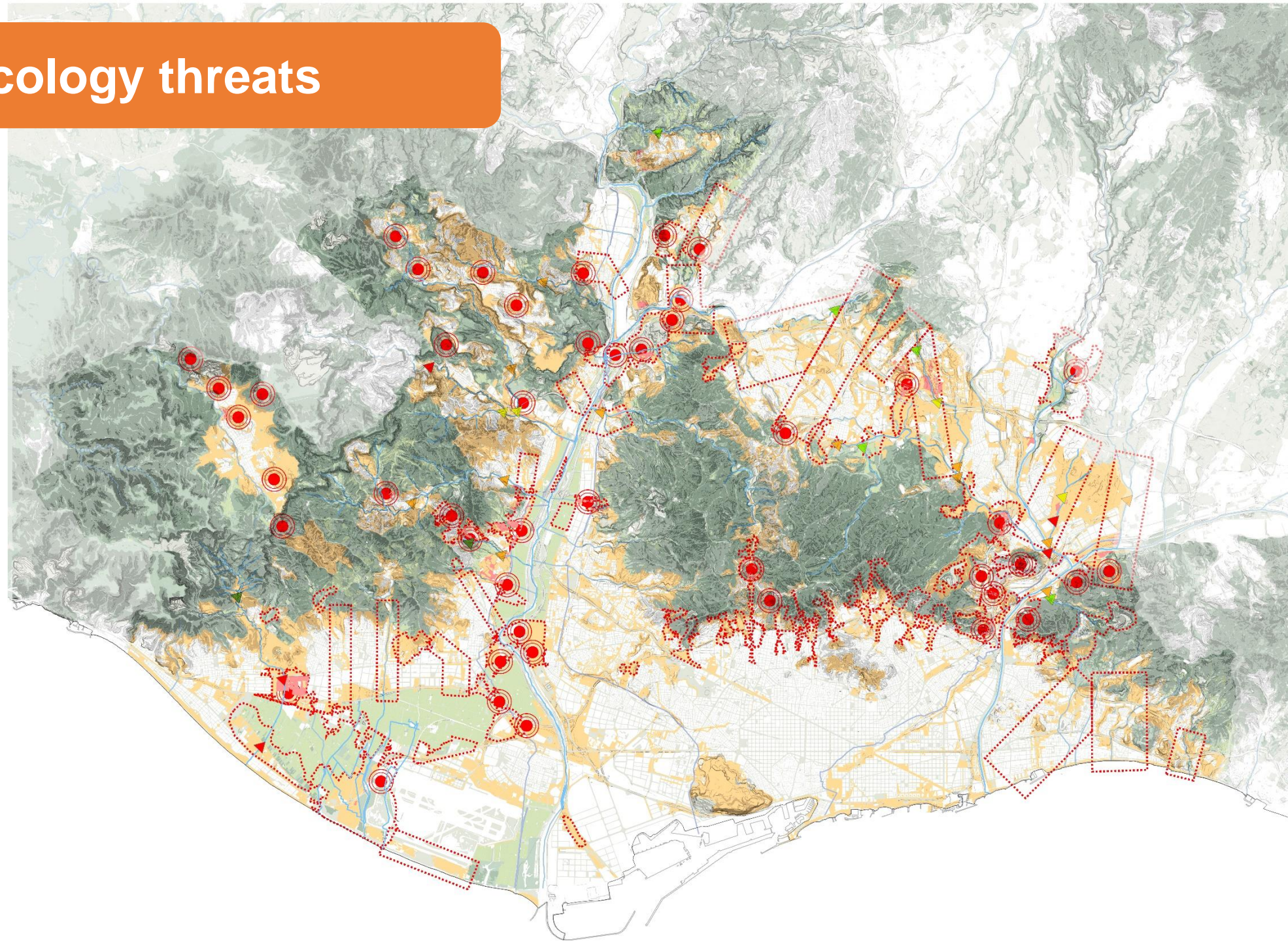
Golf Courses

Transformation Crops

Empty Ground

Mine Extraction Area


Framework: Ecology threats




 **46 critical points**

 57% insufficient/bad

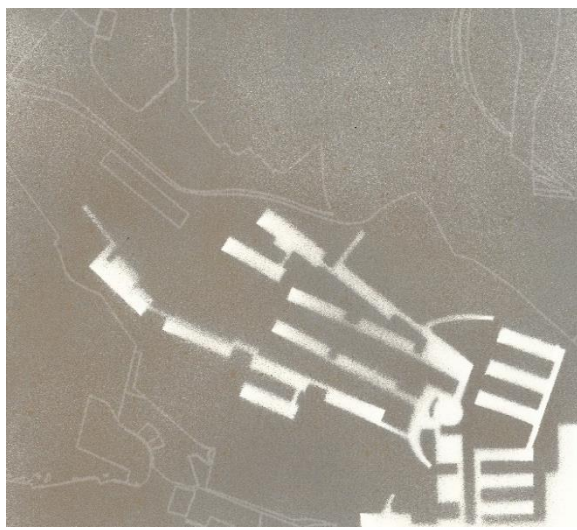
 28% good/very good

 2 optimum watercourses:

 - Julià

 - Canyars

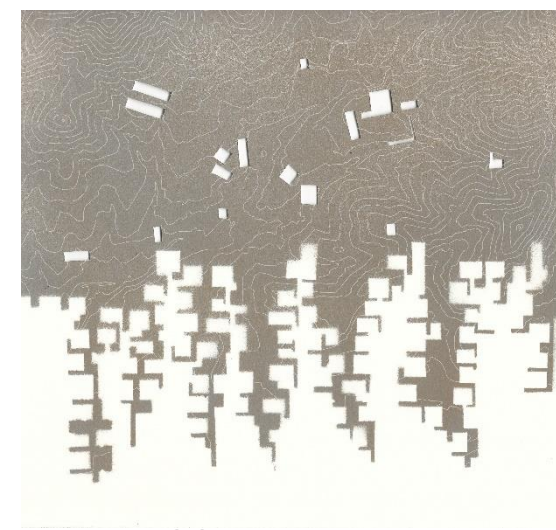
3 actions



adding value



increasing infiltration

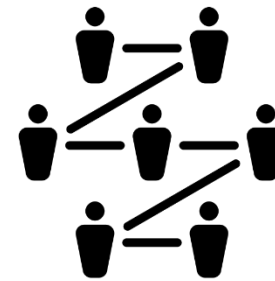


enabling interaction

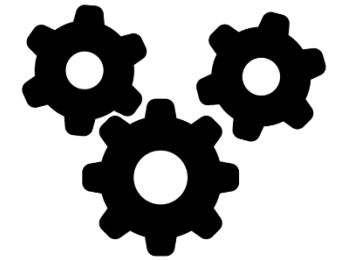
3 approches



ecology

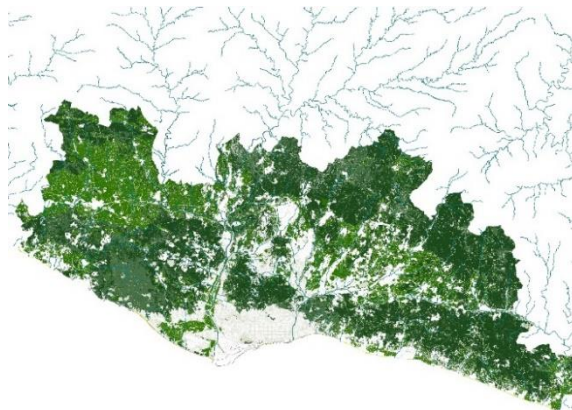


people



economics

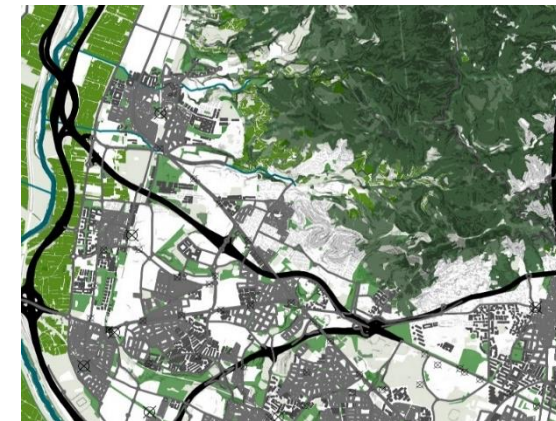
3 spaces



biophysical



community



metropolitan

Solutions based on nature and functionality




3 Territory's functionality spaces

BIOPHISYCAL

COMMUNITY

METROPOLITAN

Ecosystemic services




food

fresh water

wood

medicine

provising




erosion control

water purification

pollination

climate regulation

regulating



tourism

recreation

appreciation

spirituality

cultural



habitat for species

maintenance genetic diversity

supporting and habitat



3 Territory's functionality spaces

BIOPHISYCAL

COMMUNITY

METROPOLITAN

Intensity regulation



3 Livable cities spaces

BIOPHYSICAL

COMMUNITY

METROPOLITAN

A closer space

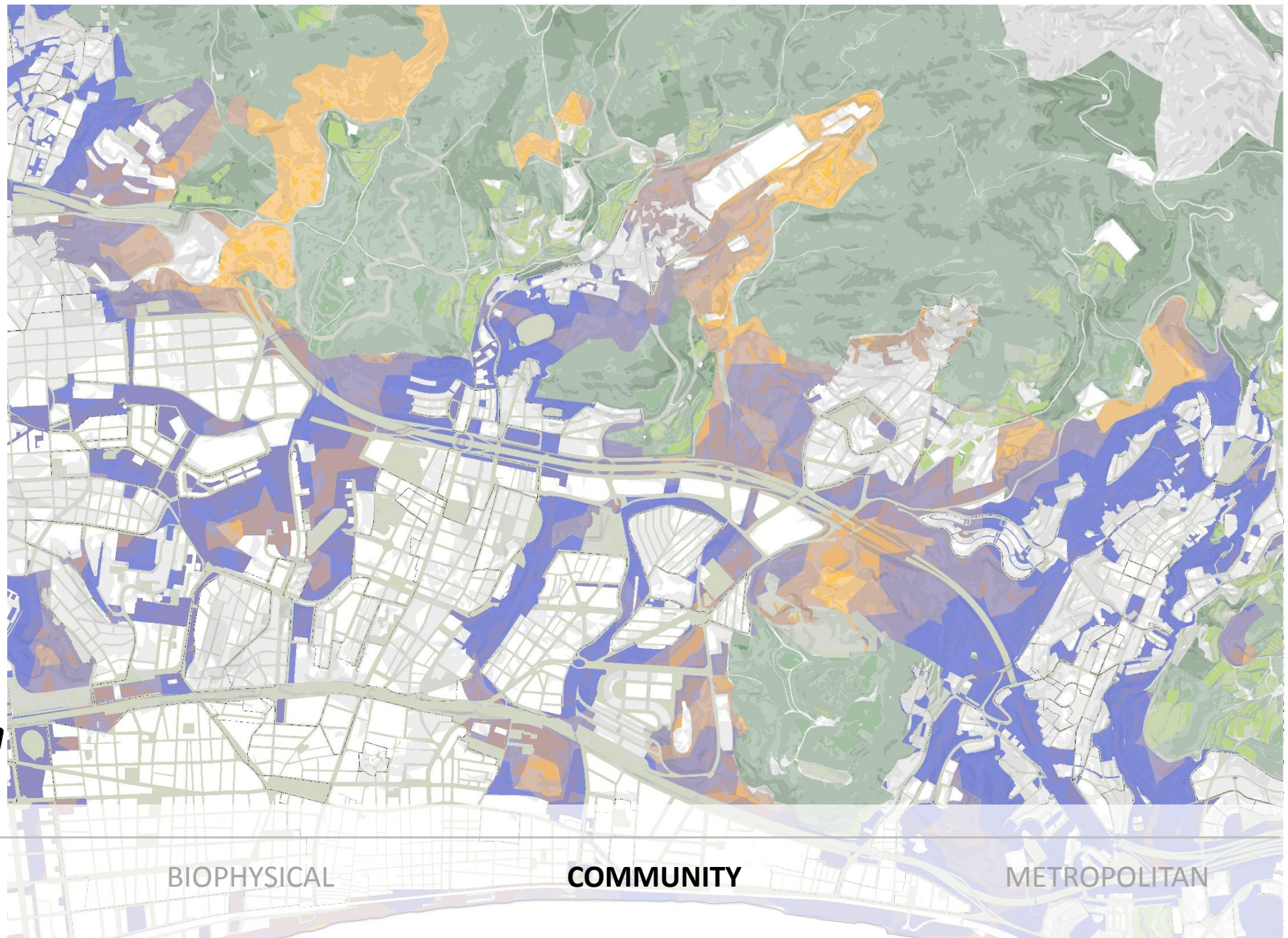
10' walking distance
2.874.221 - 89%people

5' walking distance
2.289.678 - 72%people

- 5' walking distance
- 10' walking distance
- 15' walking distance
- edges



3 Livable cities
spaces



BIOPHYSICAL

COMMUNITY

METROPOLITAN



3 Livable cities
spaces



BIOPHYSICAL



COMMUNITY



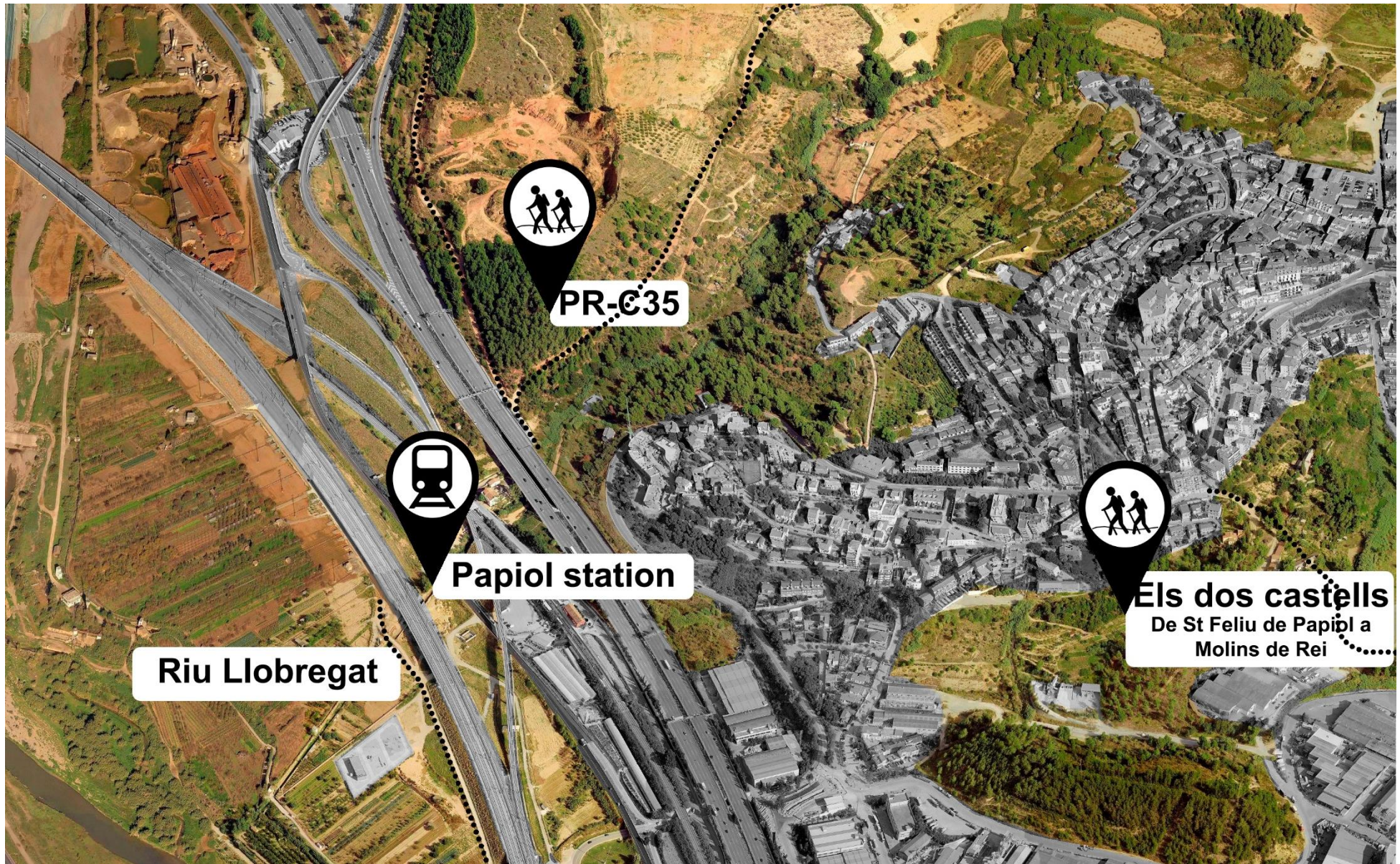
METROPOLITAN

Accessibility and sustainable mobility

124 train stations

67 stations by the edges

23 stations connected to pathways



3 A common project spaces

BIOPHISYCAL

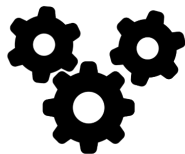
COMMUNITY

METROPOLITAN

Green economy

Organic material /
Biomass / Markets /
Silvopasture

29.347 ha
agro-forestry system
46% of the metropolitan area

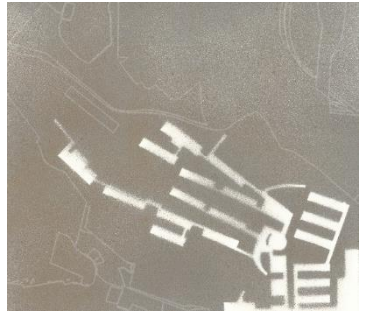


3 A common project
spaces

BIOPHYSICAL

COMMUNITY

METROPOLITAN



3 actions

ADDING VALUE

INCREASING INFILTRATION

ENABLING INTERACTION

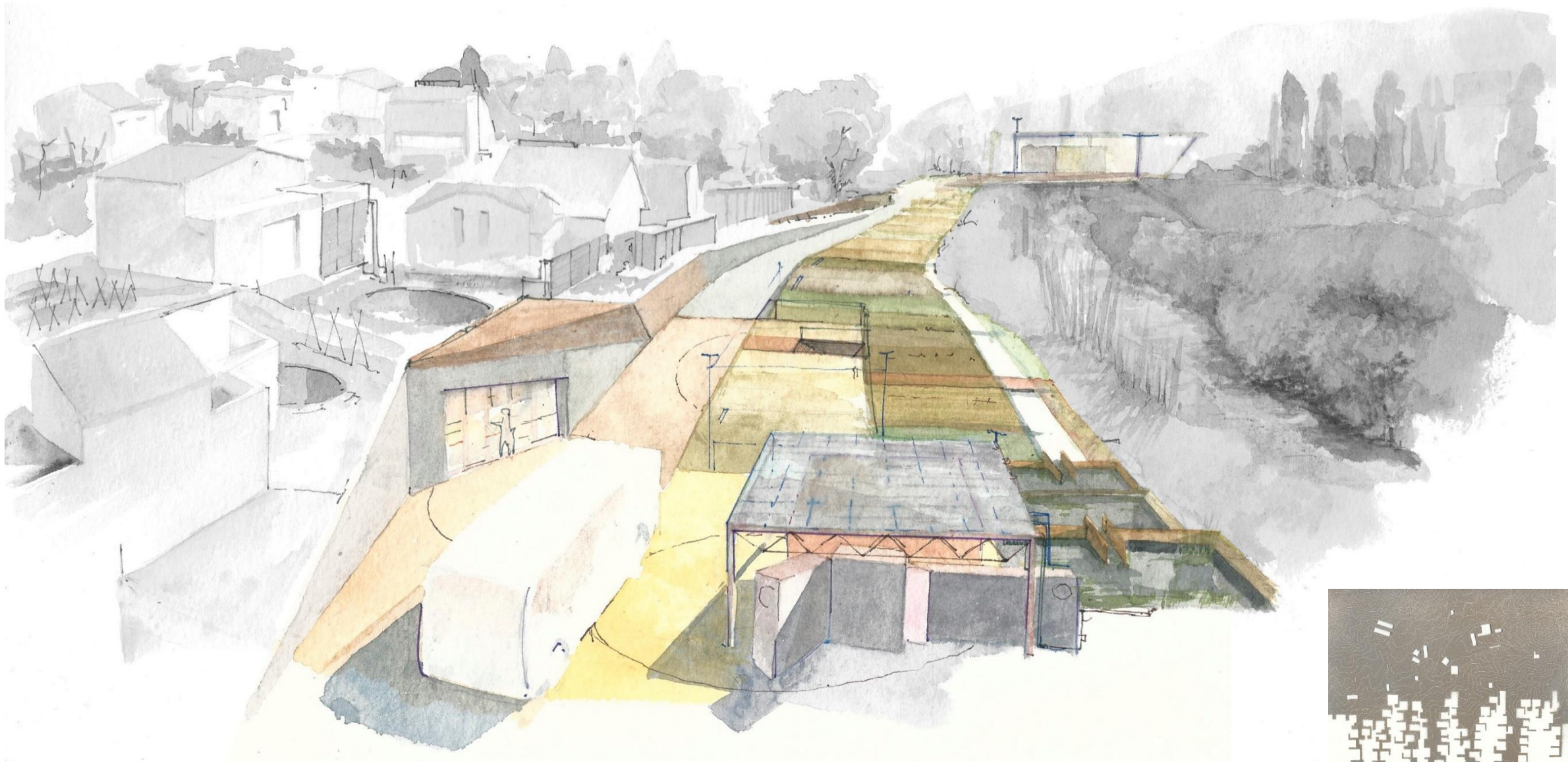


3 actions

ADDING VALUE

INCREASING INFILTRATION

ENABLING INTERACTION



3 actions

ADDING VALUE

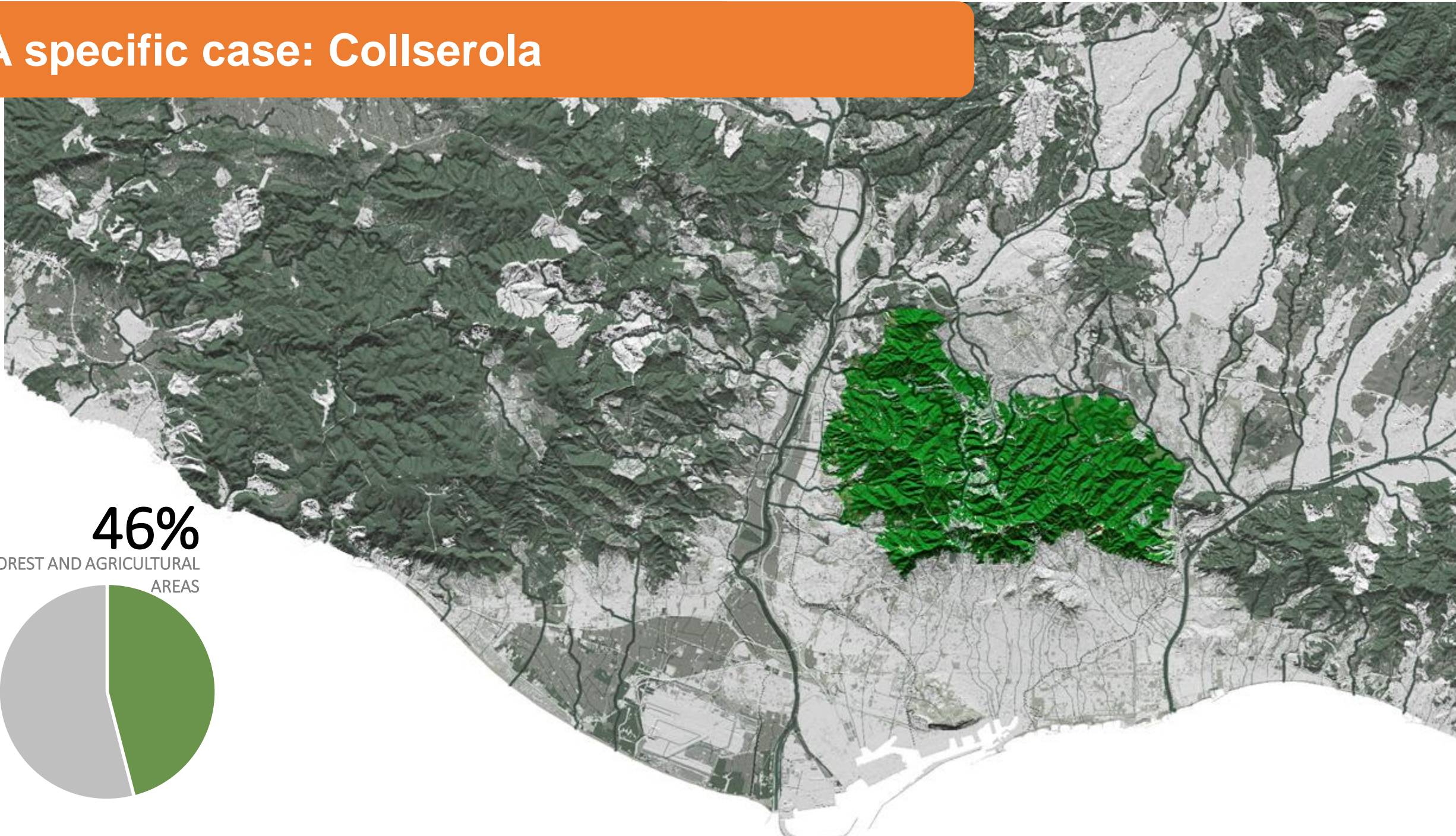
INCREASING INFILTRATION

ENABLING INTERACTION

Edges metropolitan Plan

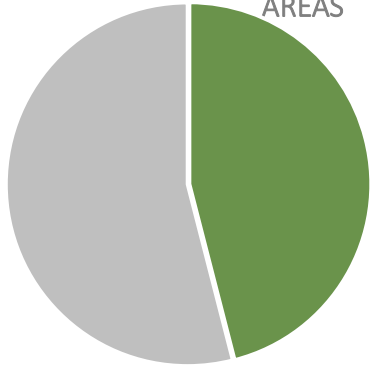


A specific case: Collserola



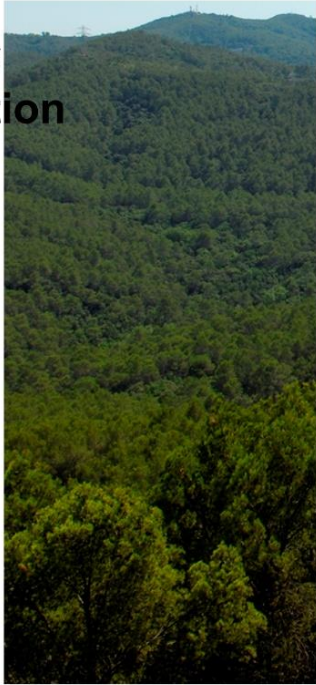
46%

FOREST AND AGRICULTURAL
AREAS



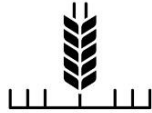
Ecosystem services

Primary production



Ecosystem functions

Crops



Ecosystem services

Food

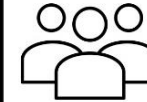


Goods

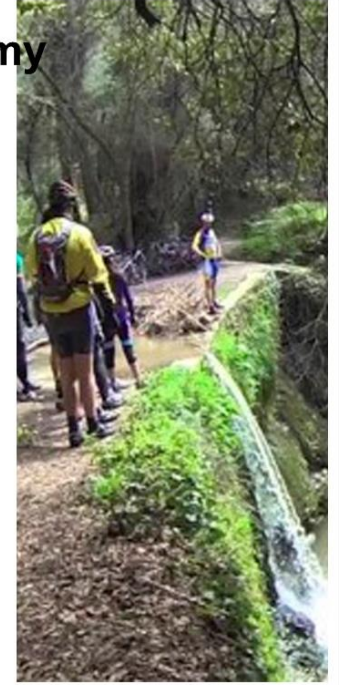
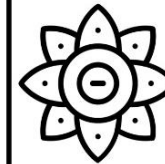
Economy



Social



Health



Human well being

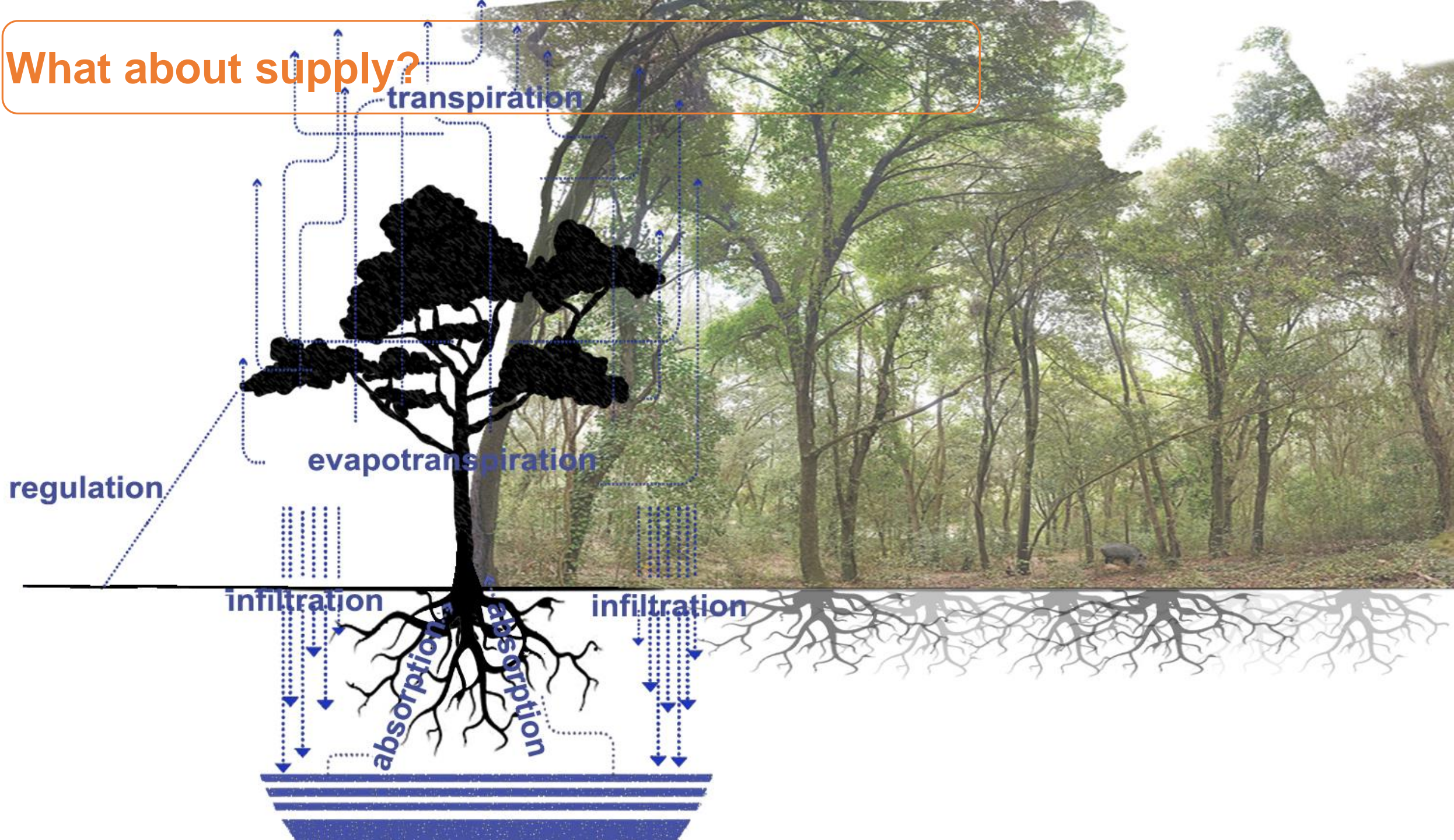
SUPPLY

DEMAND

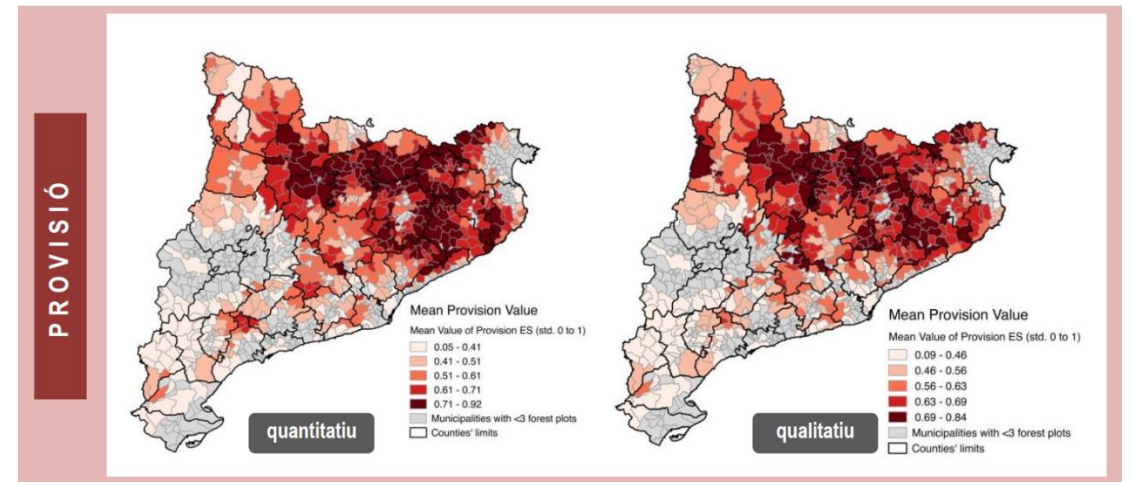
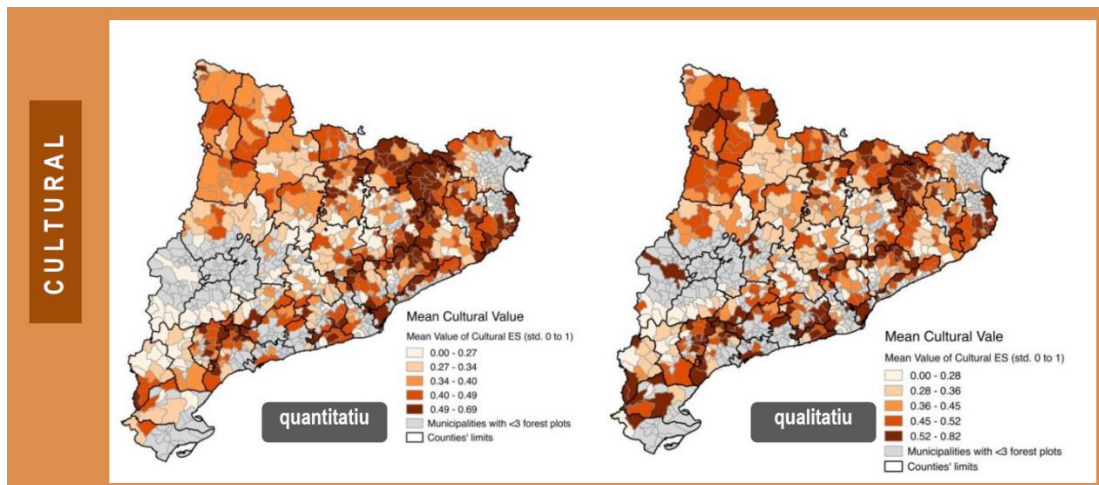
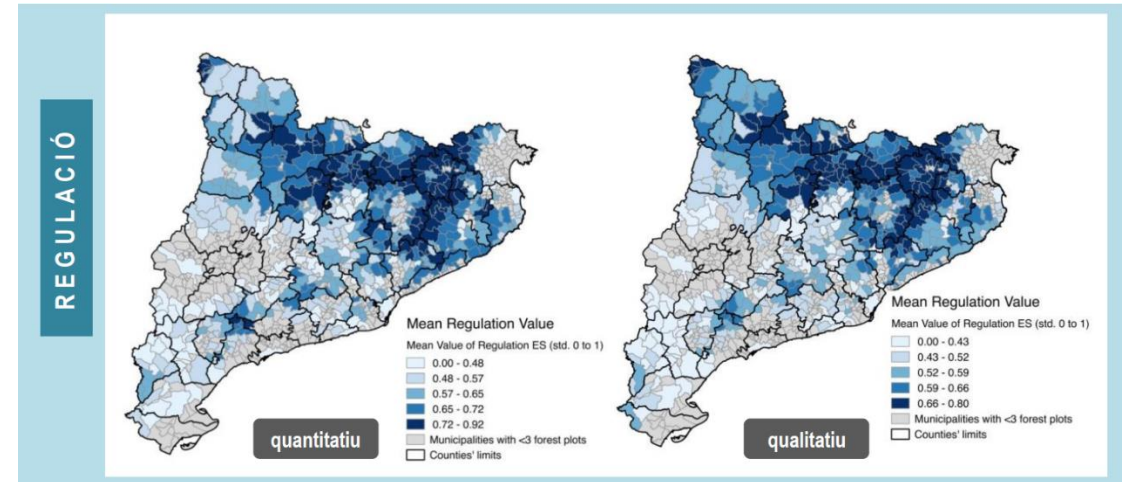
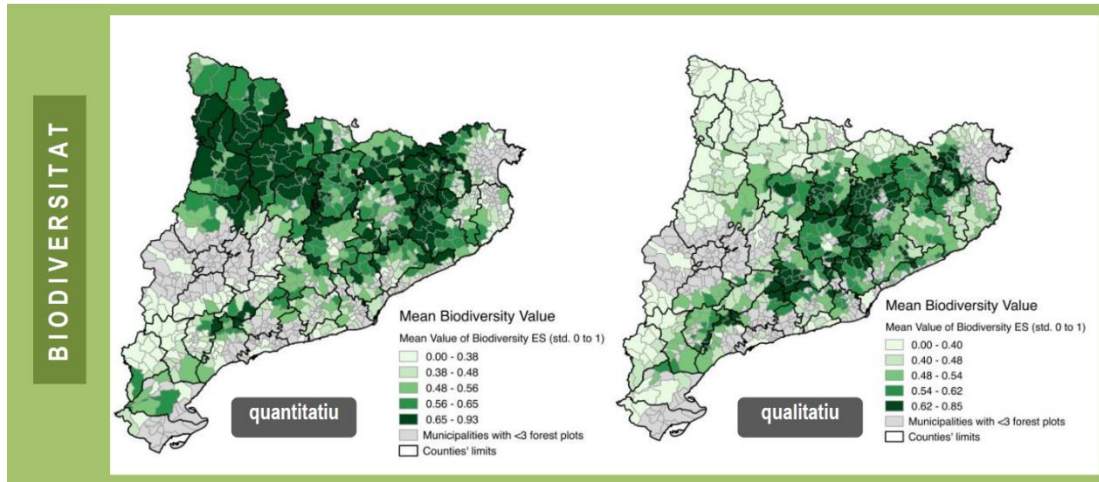
Very high demand



What about supply?



ForESmap



CREAF i Oficina Catalana del Canvi Climàtic (2016). forESmap Avaluació i cartografia dels serveis ecosistèmics dels boscos de Catalunya.

The AMB Sustainability Plan

QUALITATIVE ANALYSIS OF NATURAL SPACES

Parc Natural de Collserola

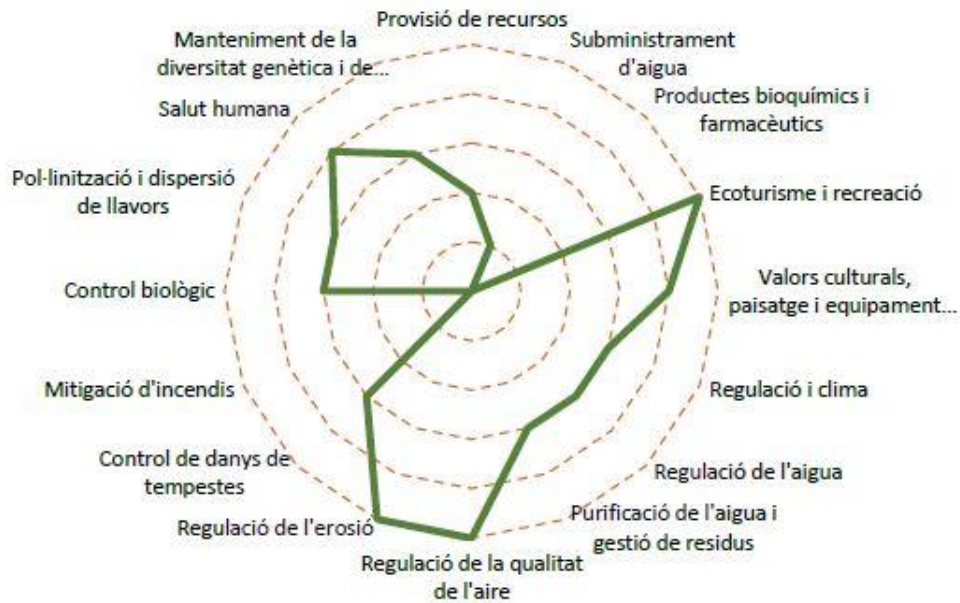


Figura 10. Importància dels espais naturals de l'AMB en la provisió de serveis d'ecoturisme i recreació.

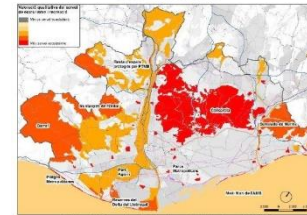


Figura 9. Importància dels espais naturals de l'AMB en el subministrament d'aigua.

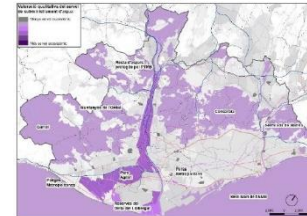


Figura 8. Importància dels espais naturals de l'AMB en la provisió de recursos.

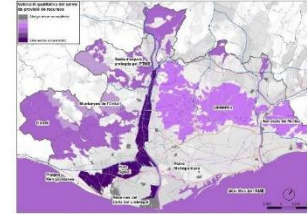


Figura 16. Importància dels espais naturals de l'AMB en la regulació de l'erosió.

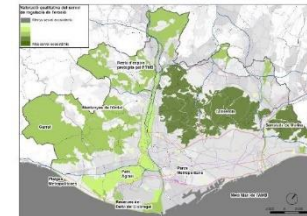


Figura 11. Importància dels espais naturals de l'AMB en la provisió de serveis culturals i inspiracionals.

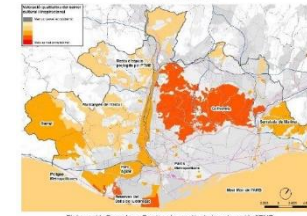


Figura 12. Importància dels espais naturals de l'AMB en la regulació del clima.

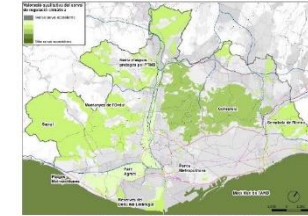


Figura 19. Importància dels espais naturals de l'AMB en el control biològic.

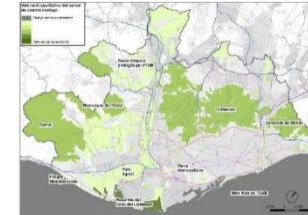


Figura 14. Importància dels espais naturals de l'AMB en la purificació de l'aigua i la gestió de residus.

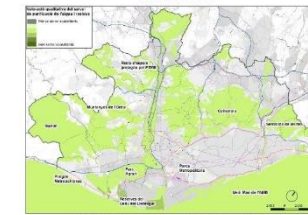


Figura 15. Importància dels espais naturals de l'AMB en la regulació de la qualitat de l'aire.

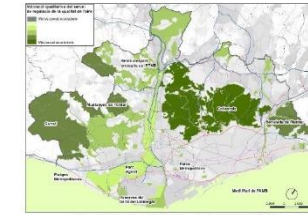


Figura 20. Importància dels espais naturals de l'AMB en la pol·linització i dispersió de llavors.

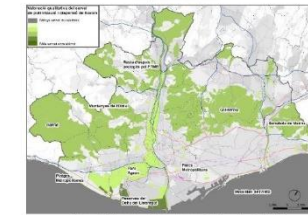


Figura 18. Importància dels espais naturals de l'AMB en la mitigació d'incendis.

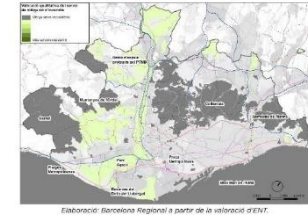


Figura 22. Importància dels espais naturals de l'AMB en el manteniment de la diversitat genètica i de les espècies.

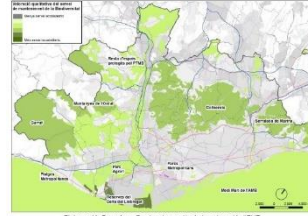


Figura 13. Importància dels espais naturals de l'AMB en la regulació hídrica.

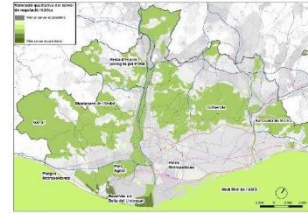


Figura 17. Importància dels espais naturals de l'AMB en el control de danys de tempestes.

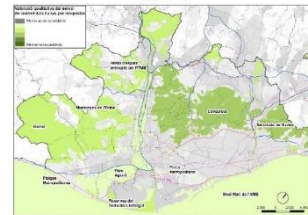
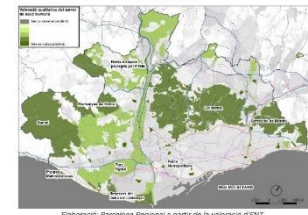
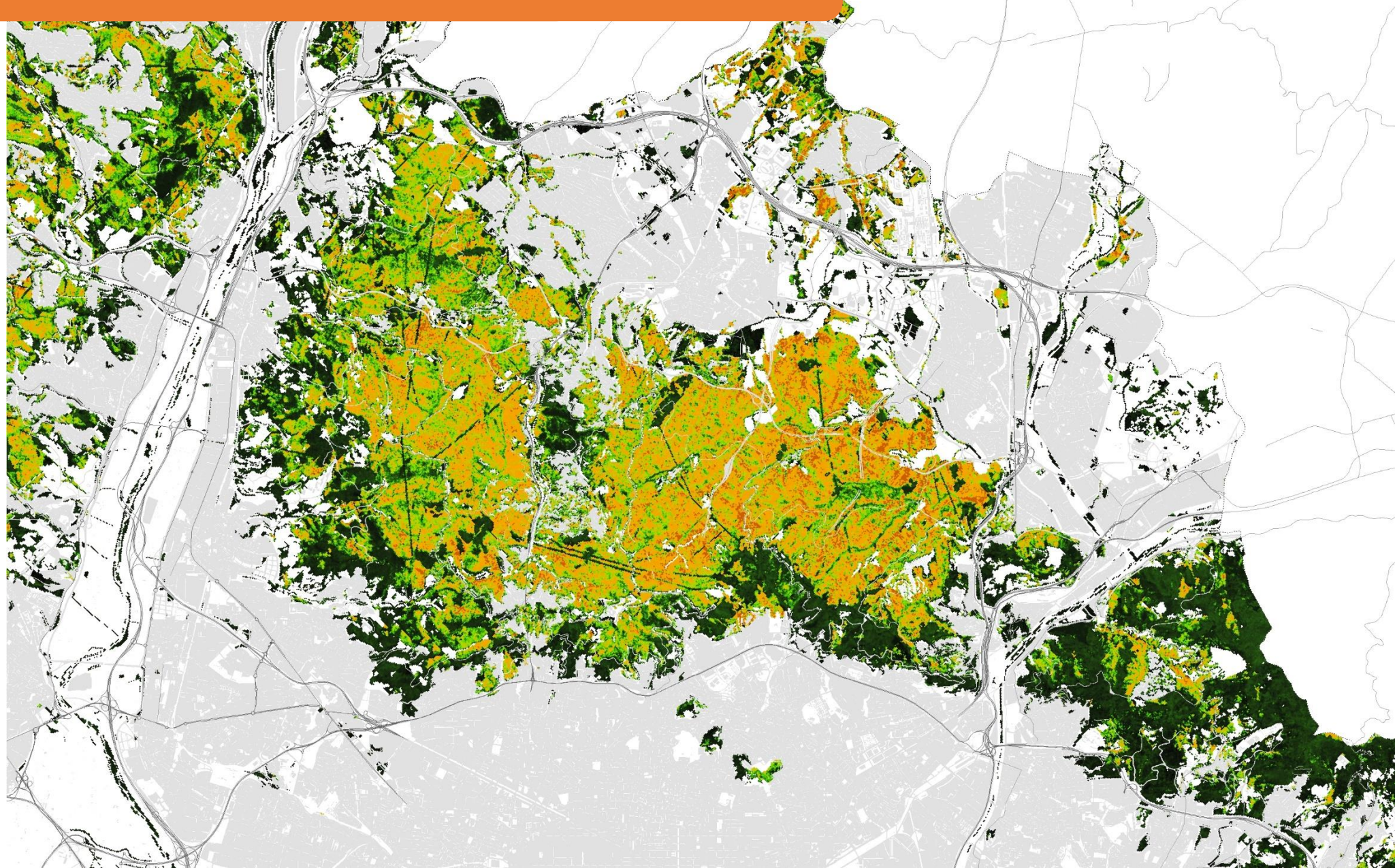


Figura 21. Importància dels espais naturals de l'AMB en la provisió de serveis per a la salut humana.



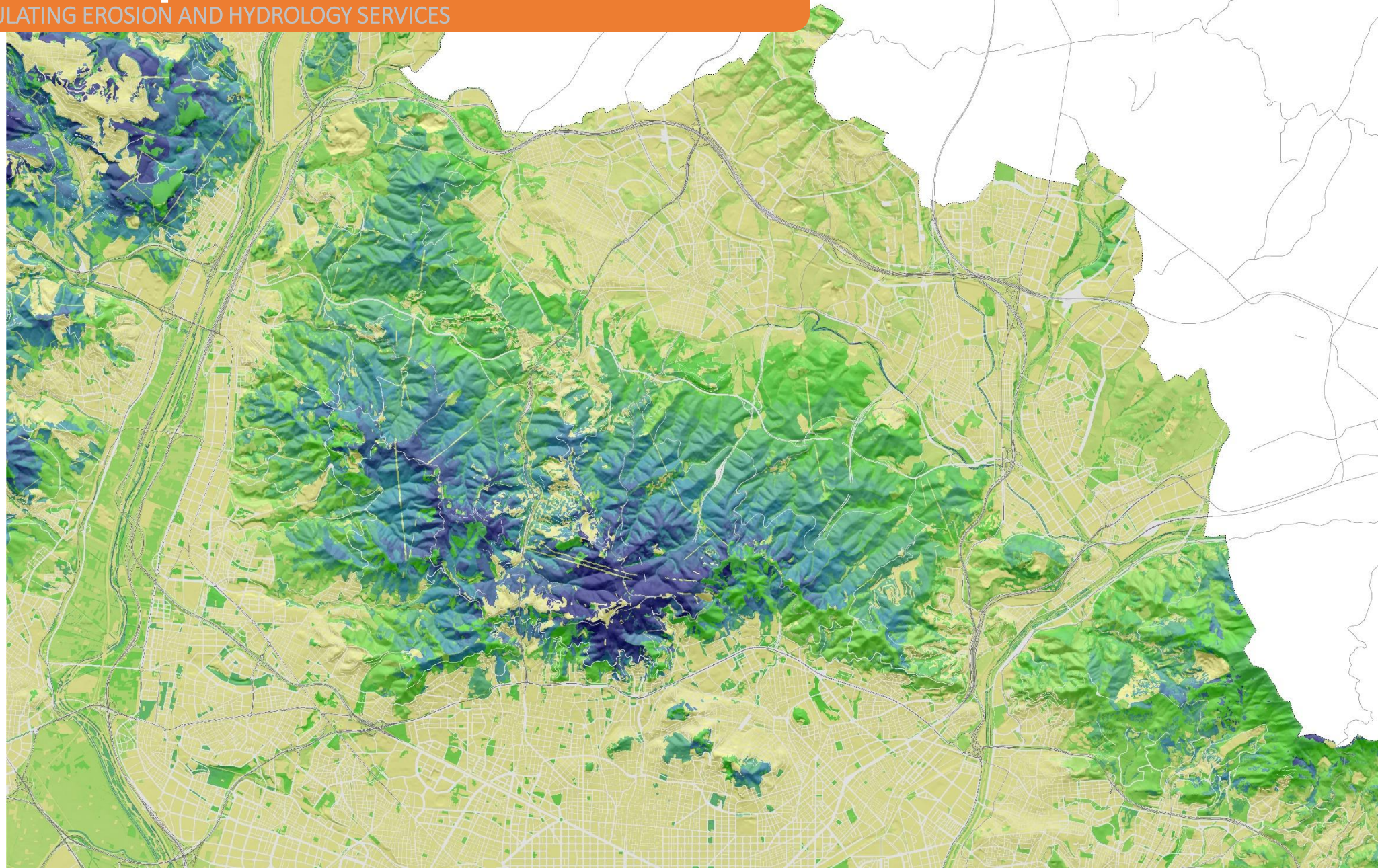
The AMB Sustainability Plan

CARBON STORAGE

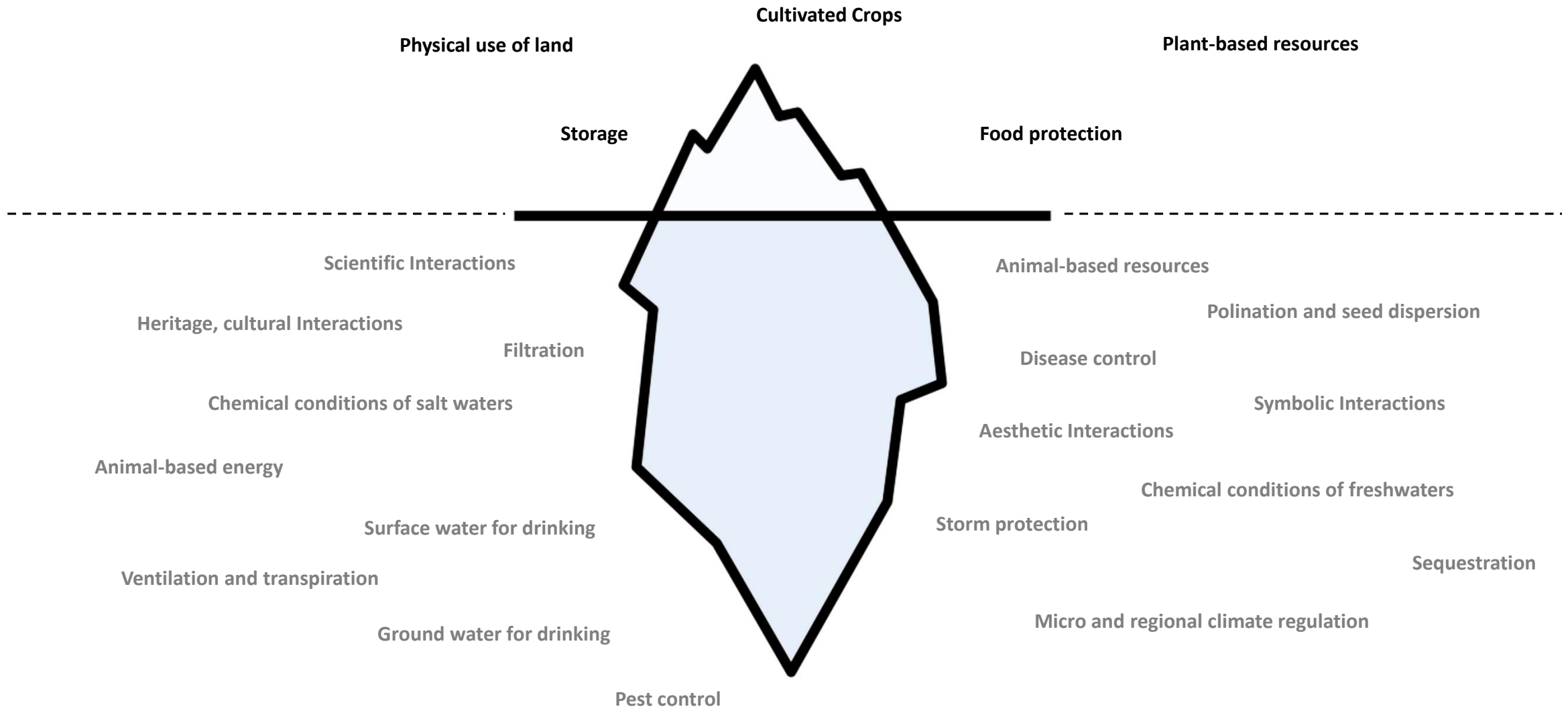


Special protection plan of Collserola PEPNAT

CHARACTERIZATION OF REGULATING EROSION AND HYDROLOGY SERVICES




Lack of knowledge



Planning for one group of services is counterproductive



Ecosystemic services




food


fresh water

wood

medicine



provising




erosion control


water purification

pollination

climate regulation



regulating




tourism

recreation

appreciation

spirituality



cultural

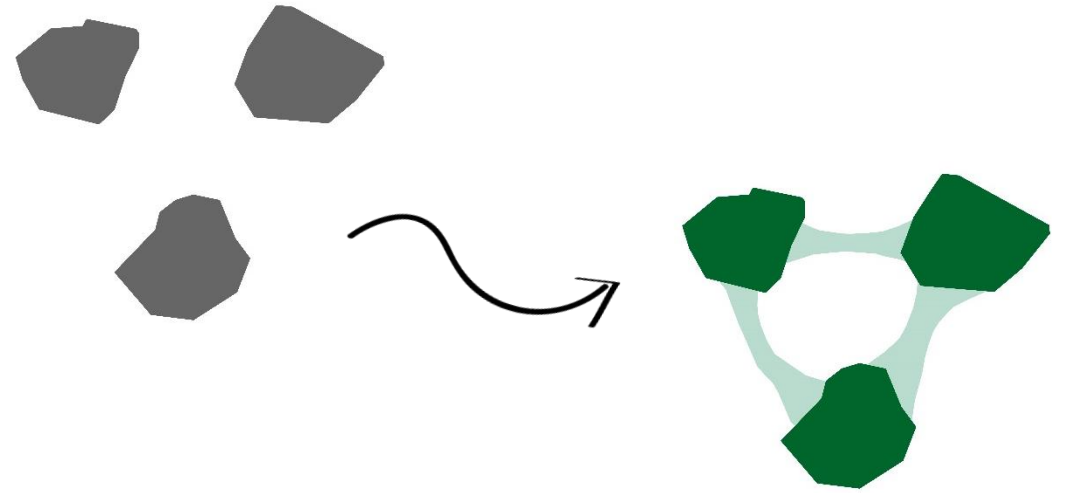


habitat for species
maintenance genetic diversity

supporting and habitat



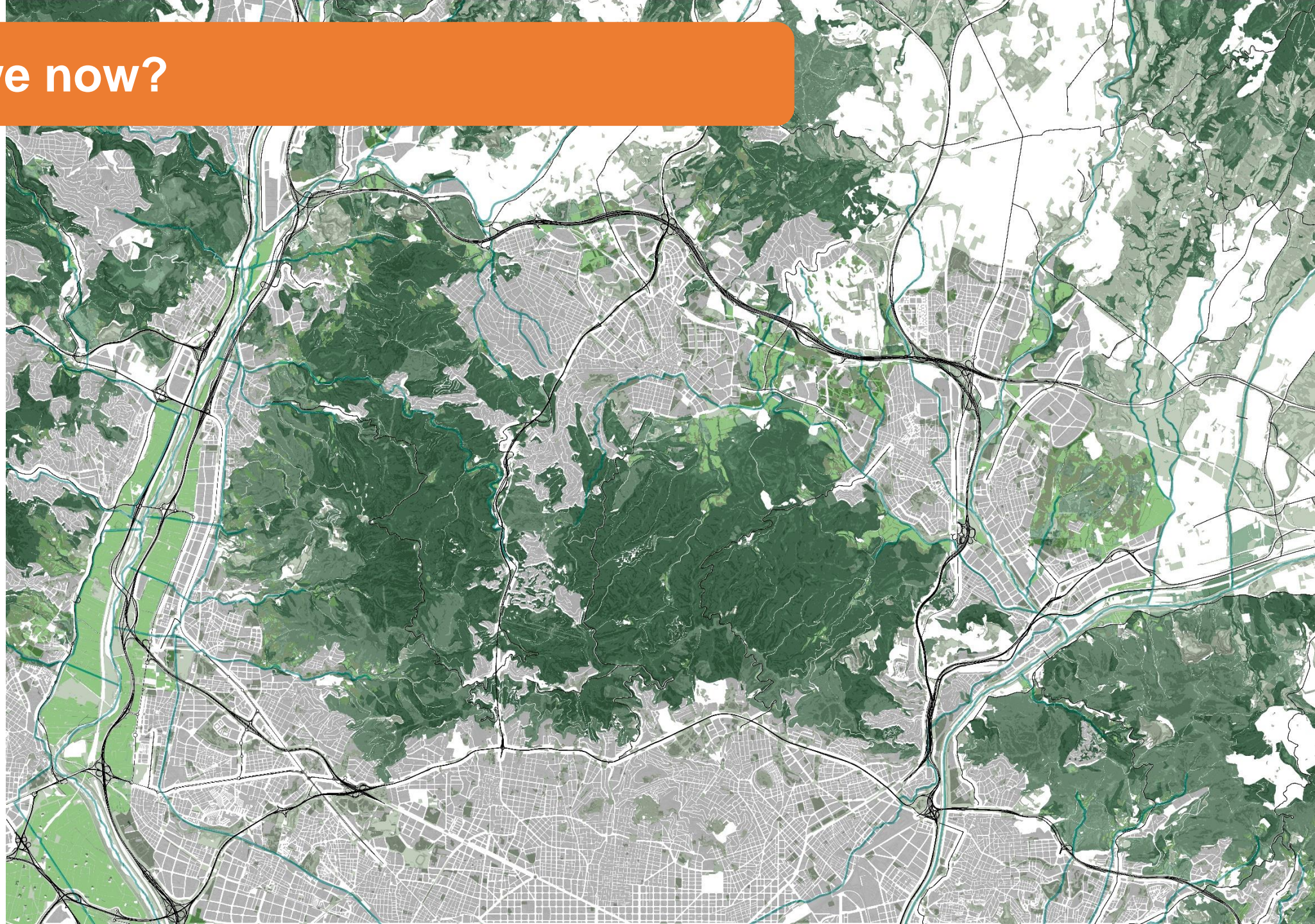
Environmental functionality improvement



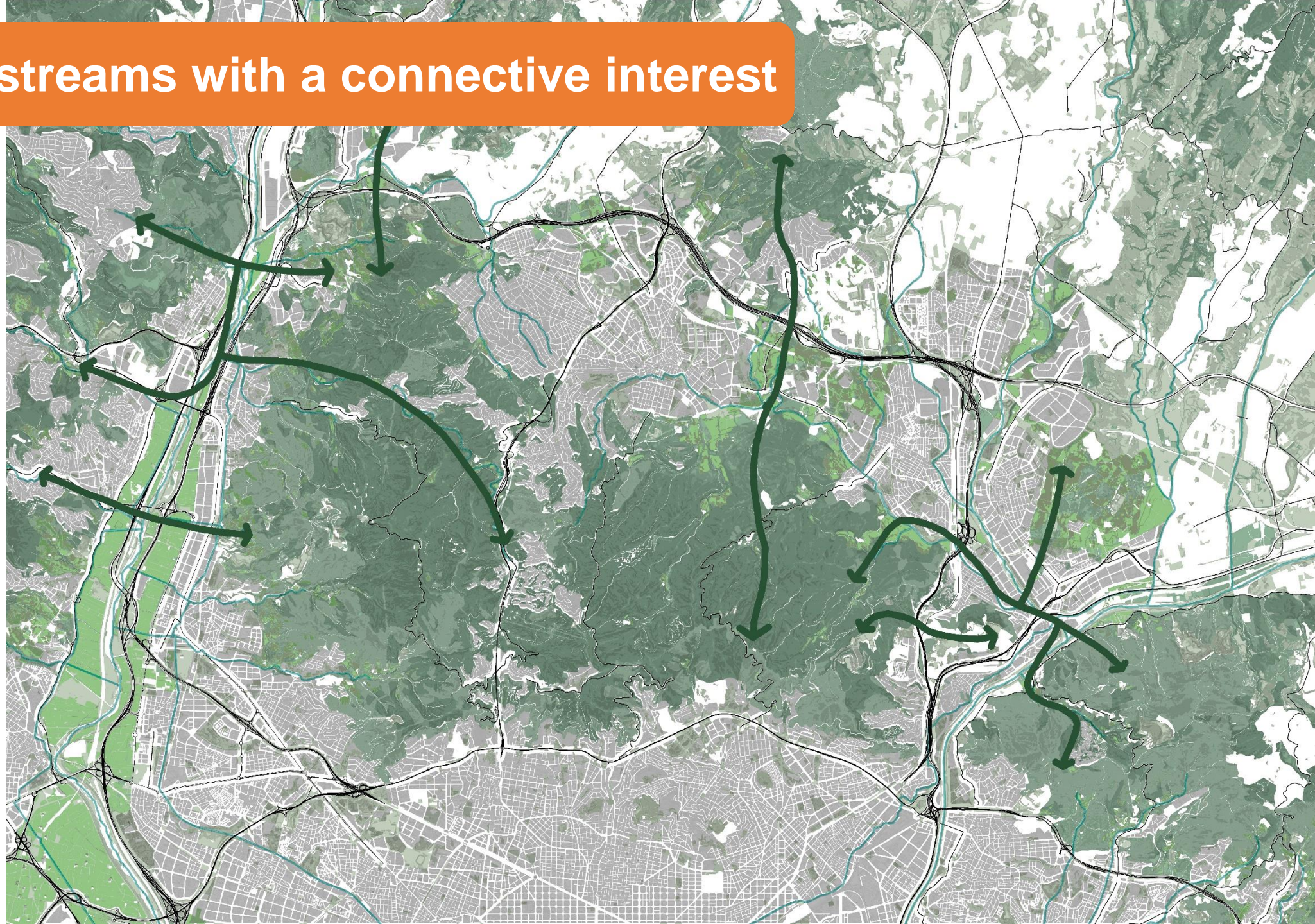
Green Corridor Cerdanyola del Vallès



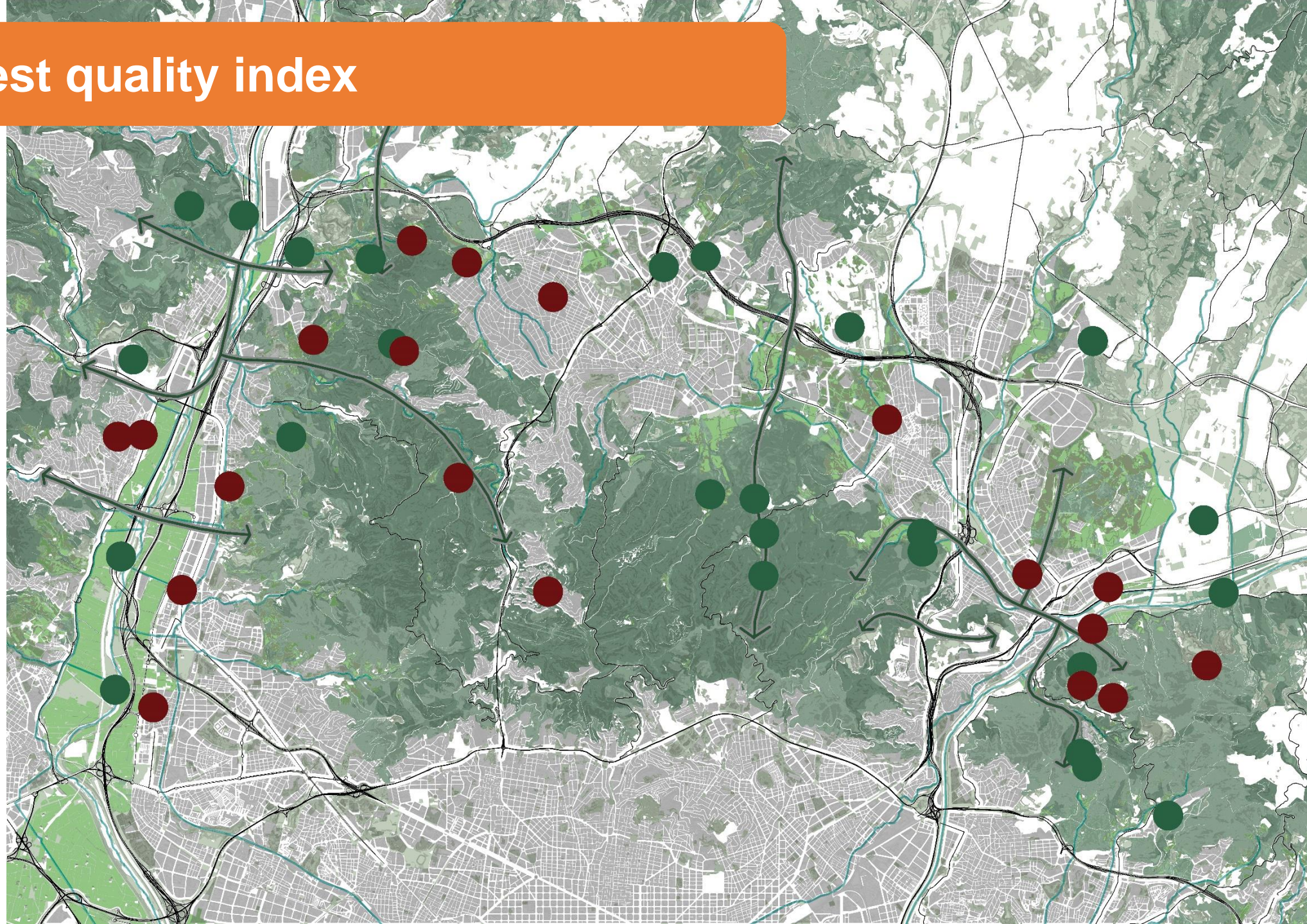
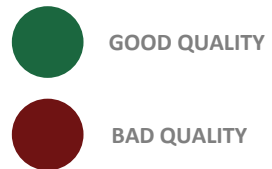
Where are we now?



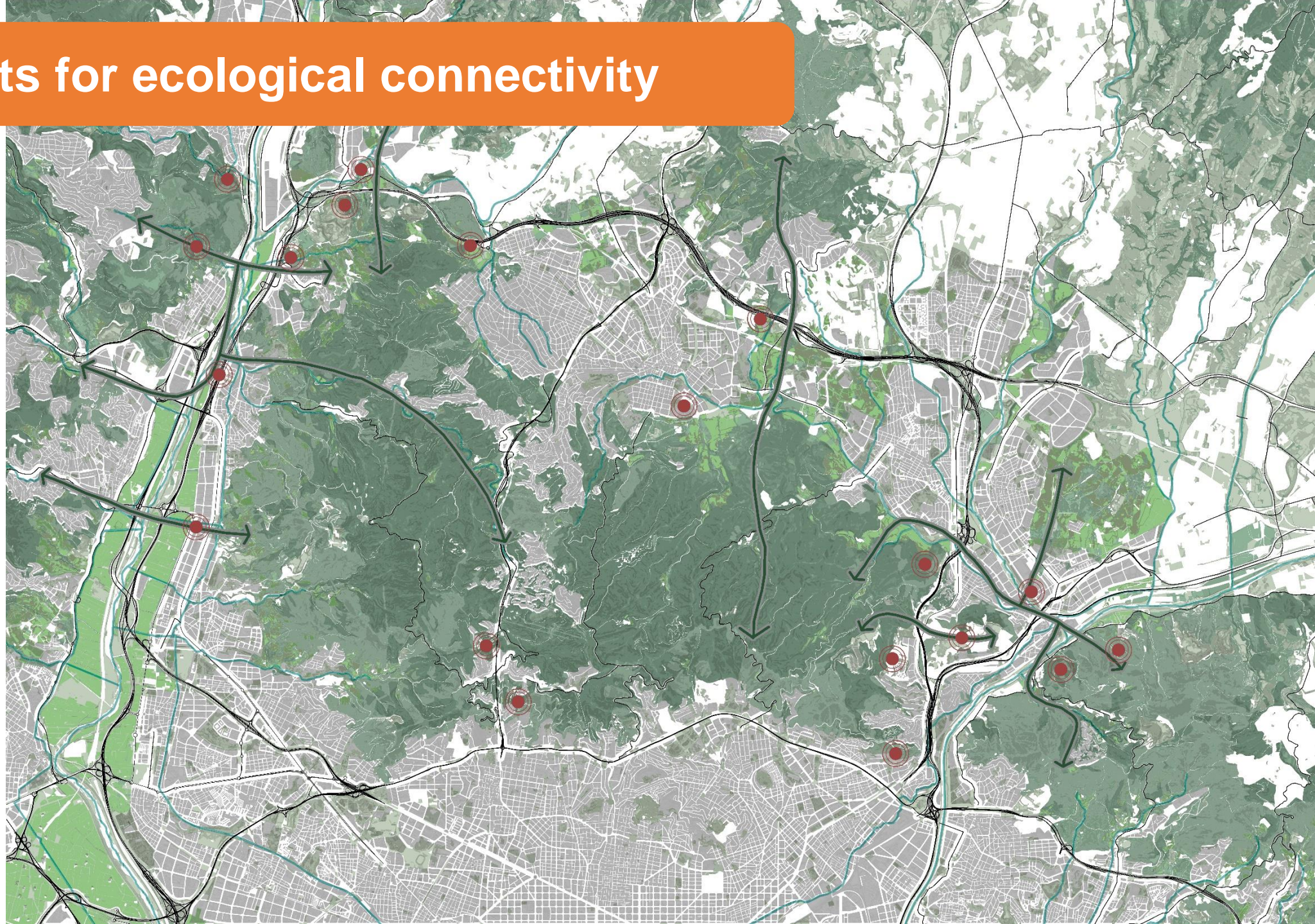
Creeks and streams with a connective interest



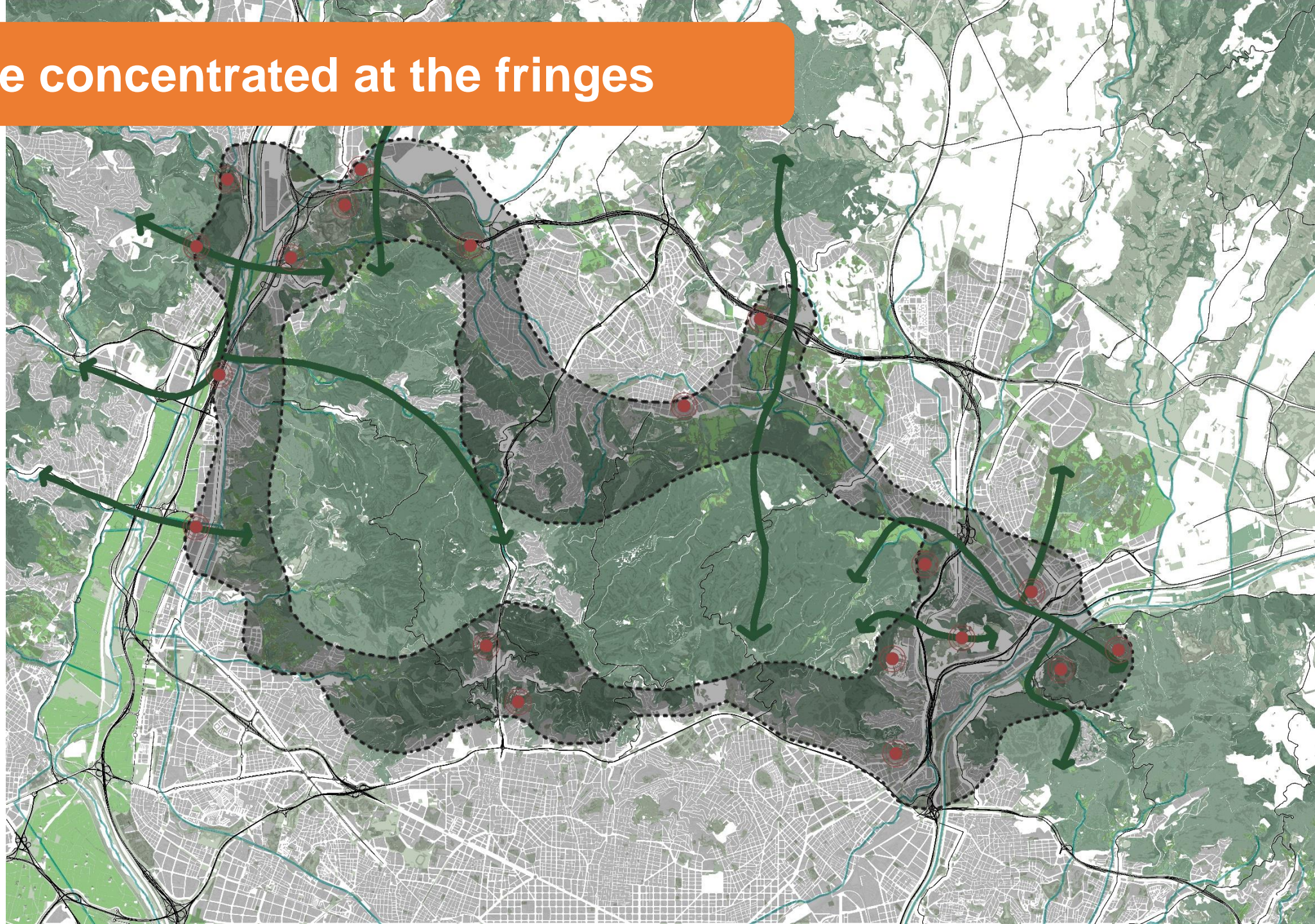
Riparian forest quality index



Critical points for ecological connectivity



Problems are concentrated at the fringes



Fringes are the key zone to complete the Green infrastructure

