Amazon Way

Territorial Co-creation for *Life* in the Peruvian Amazon Waterway

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EMU graduation project

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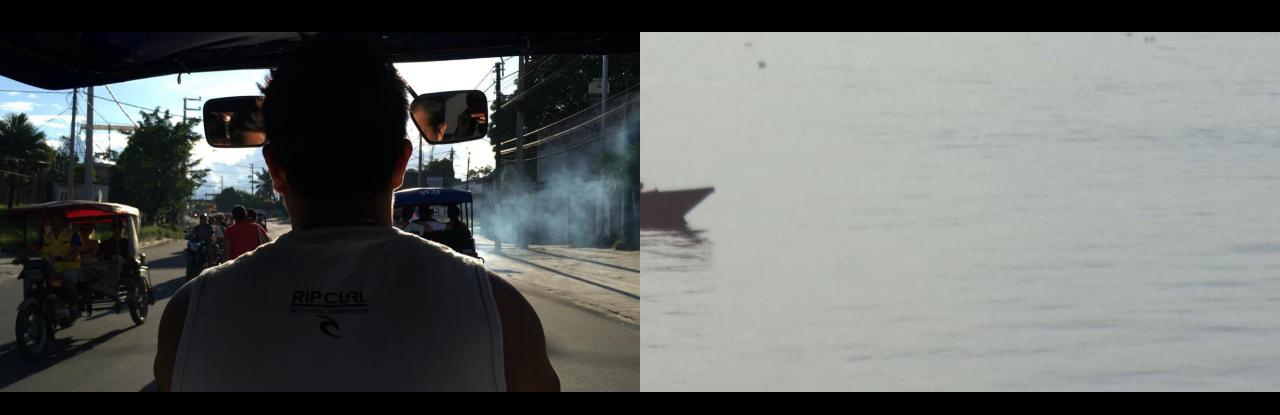
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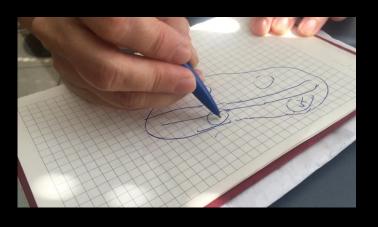


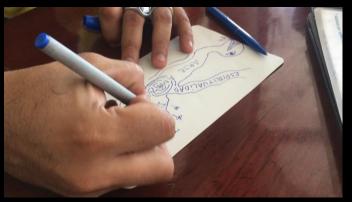


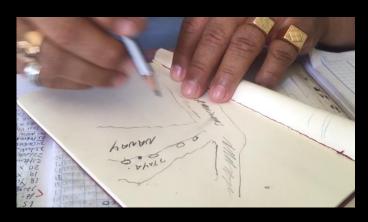






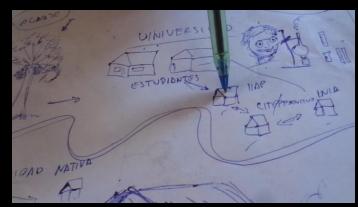














Glocal Forest Health





A Territory of Abundance



Fishing



Artisanries



Agrofrestry - Conservation



Tourism



Research & Development



Basic Services

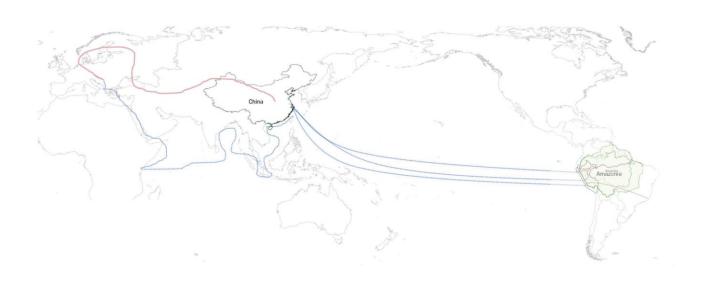


Medicine



Transportation

The Amazon Waterway: between global and local



Prioritized

by the National Infrastructure Plan for Competitiveness, IIRSA, BRI initiative.

2,637km

Principal Amazonian rivers in Peru: The Amazon, Marañon, Ucayali, and Huallaga.

2,000 communities

3 Port cities: Iquitos, Pucallpa, Yurimaguas + 2 ports: Santa Rosa, Saramiriza

1mil inhabitants

Dynamize international trade and local economies;

24 dredging points Represent harmful risks and

Represent harmful risks and socioeocological impacts

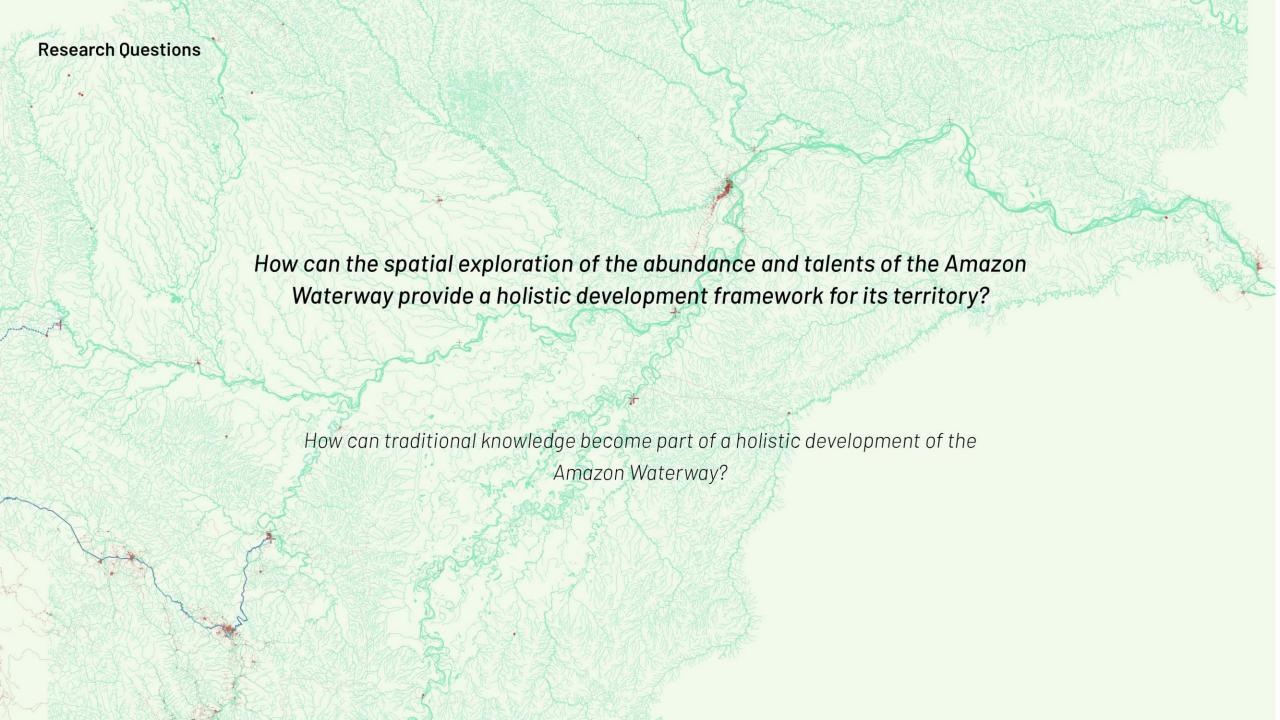


"Instead of dredging, why, rather, your boat, which is wrong, you modify it, you change it to the way of the river that is natural? [...] Several communities, several populations, and not only of this generation, but the children who are coming: What heritage are we going to leave for them?"

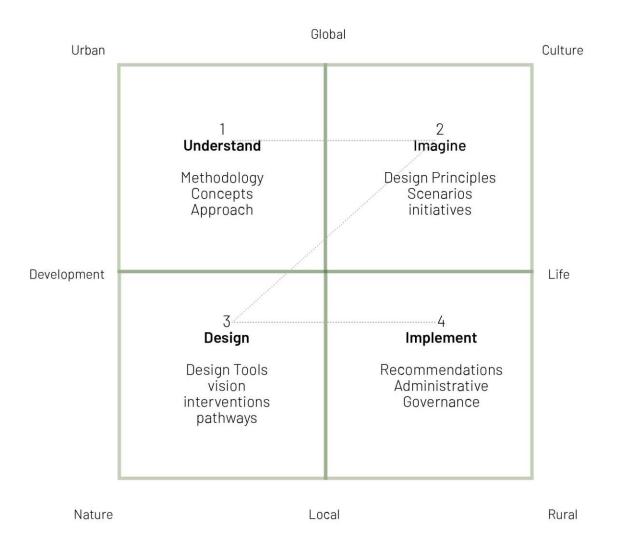
"What we have here it is understood that development thinks not further than cities, where the municipalities are. That's it. From there to the communities, from there to the hamlets, there is nothing."

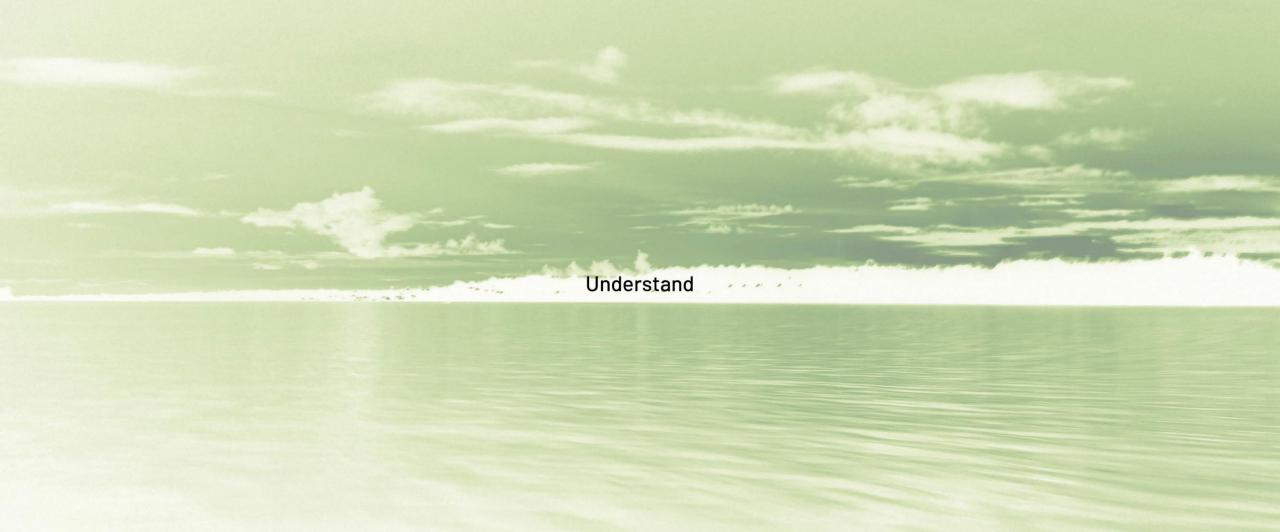
Lizardo Cauper
Contamana, Peru, 1975
Director of AIDESEP, the Interethnic Association for the Development of the
Peruvian Rainforest



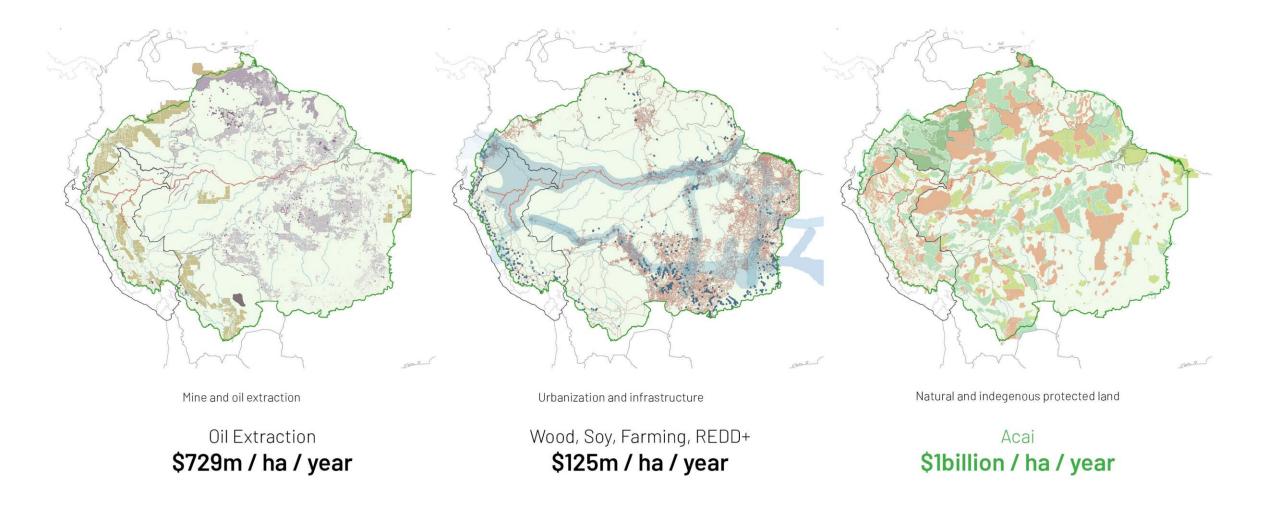


Research Design





Amazonia Potential



Peruvian Amazonia Path-Dependance









Social and spatial patterns transformation

- XVI: Evangelization

- 1890-1920: Rubber Boom

- 1970: Oil, timber, drug, mining trade

- 2000: Infrastructure crusade

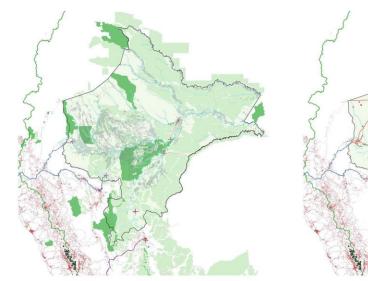
"Much of the indigenous population in the Peruvian Amazon lived in interfluvial settlements. Smaller settlements organized based on kinship and proximity relationships.

There were no bosses or structures that don't work like tody. They do had prestigious leaders, for example, a fisherman, that in a time of tension, could lead a defense ... but ... that was handled very well."

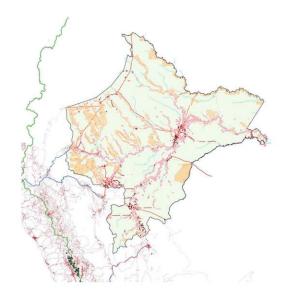
Alberto Chirif **Lima, Peru, 1943** Anthropology expert on Amazonian Indigenous Communities



Loreto







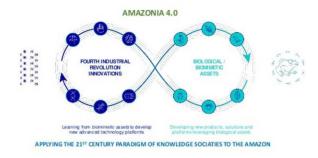


Complex Portrait

- 19% Oil Based economy
- Unattended Indigenous communities
- Structural uneveness / depend on amazonian cities
- Rivers as backbones fof regional develpment.
- Fragmented Infrastructures
- High biodiversity and protected areas.

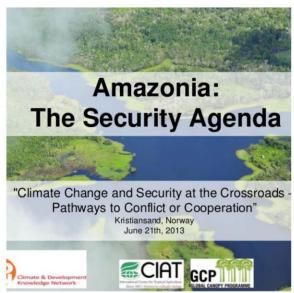
Reference Methodologies & Cases

HE AMAZON THIRD WAY COMBINES THE WORLD OF BIOLOGICAL/BIOMIMETIC ASSETS WITH ADVANCED TECHNOLOGIES IN A VIRTUOUS CIRCLE



Amazon 4.0





Amazonia Security Agenda



Floating Amazon FabLab



Oil Plan

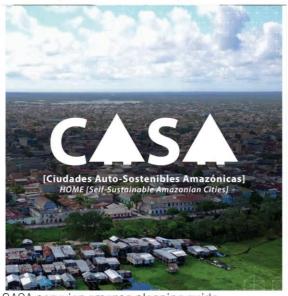




Post-oil Plan

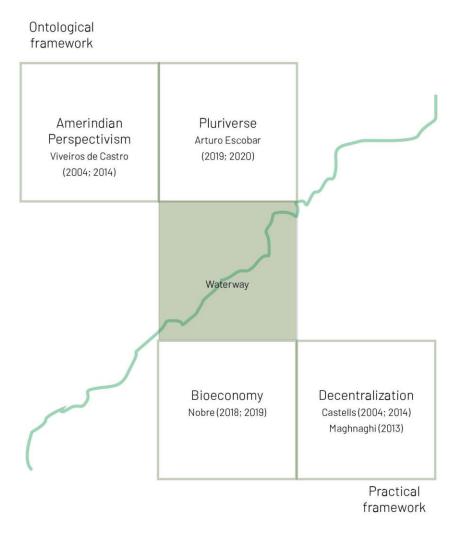


Kukama Spiritual & Cultural Map

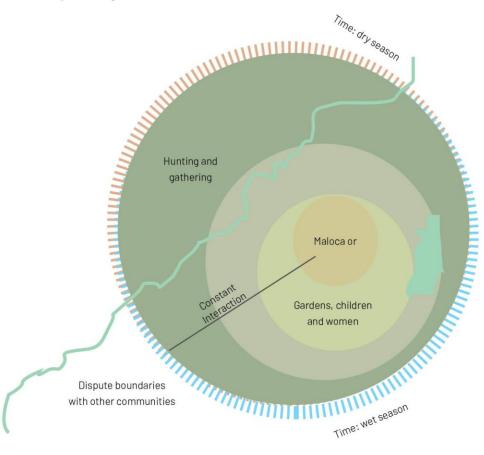


CASA peruvian amazon planning guide

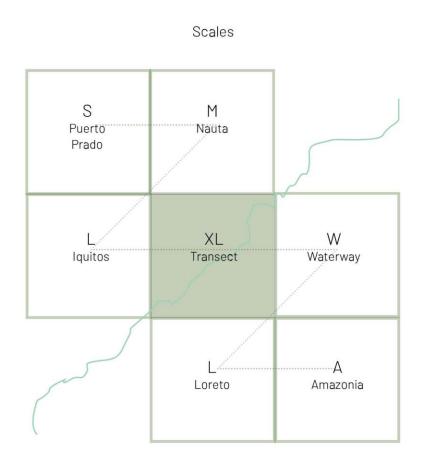
Theoretical Perspectives & Cosmovision

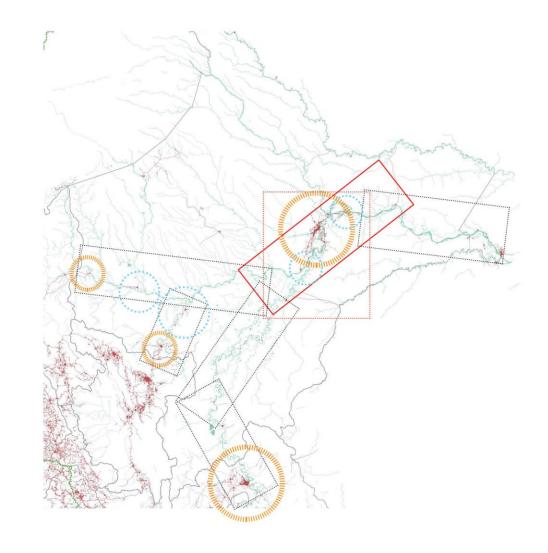


- Time and space continuity
- Human and non-humans are the same
- Experience-practice based Knowledge
- -Spirituallity and wisdom are central



Territorial Analysis



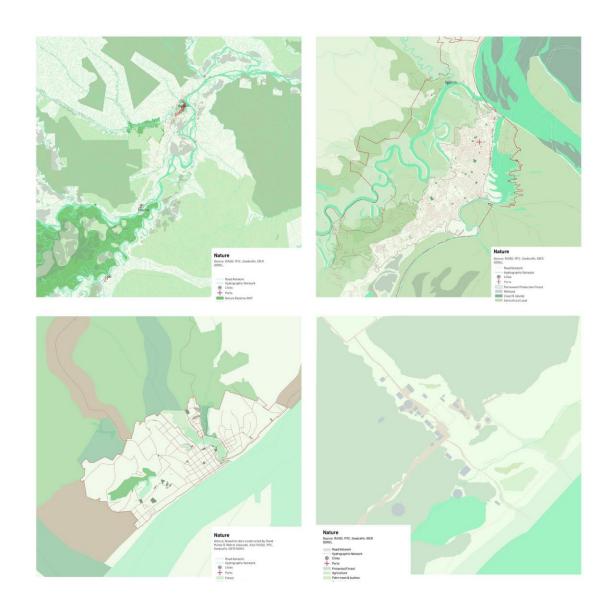


Central Transect



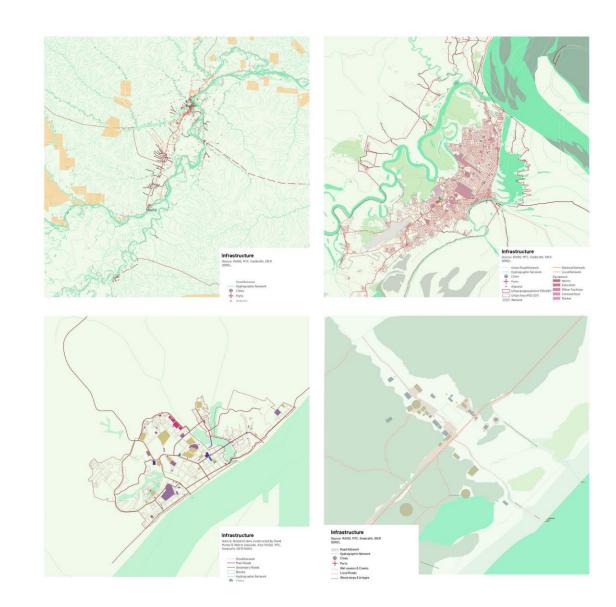
Nature

- Transect: Protected Areas, Managed Forests
- Iquitos: Actual Green Belt, Pollution, Suburbanization
- Nauta: Potential Green Belt and Riverine Biodiversity Protection
- Puerto Prado: Potential for Agroecology & Fishing



Infrastructure

- Transect: Nodes connection, projected highways
- Iquitos: Deficient basic services provision in peripheries
- Nauta: Regional Waste collection plant
- Puerto Prado: lack of social services and basic infrastructure



Occupation

- Transect: Territorialize services
- Iquitos: Controvorsies of land use vulnerable periurban neighborhoods
- Nauta: Logistic Riverfront, Ecological Creeks. Rirverine urban expansion.
- Puerto Prado: Potential for Ecotourism & Conservation



Perception

- Transect: Articulator with the rest of the Amazonia.
- Iquitos: Potential of Militar, under and overused spaces. Erased Forest Identity. Reorganization of Ports.
- Nauta: Services nodes and ecological infrastructure. Riverfront Cluster
- Puerto Prado: Need for alternative and better services.



Territorial Characterization



Puerto Prado



Nauta Iquitos



Learn from Seed Initiatives

- Agroforestry
- Fishing & biodiversity management
- Bio-industry
- -Water, Sanitation, Energy, Housing
- Waste Treatment
- Community Center & Services
- Capacity building



Familiar Agroforestry - IIAP - MIDIS



Yana Allpa - Sachamama Institute



Yacu Tayta Biodiverse Zones



D'Souza Bioproducts



CASA: Auto Sustainable Amazonian Cities



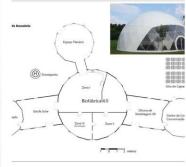
Sumaq Wasi - Rural Housing National Program



Nauta Waste Treatment Plant



PIAS & TAMBOS



Amazon Creative Labs

Share Memories of Hope

- Global overview of Amazonian Development
- Technical knowledge of the Waterway Project
- Specific potentials, resources and opportunities in Loreto
- Complementary technical knowledge
- Personal-affective knowledge



















Scenarios

Bioeconomy

- Limits to Natural resources use
- Research & Development culture
- Biomaterials are nurtured

Decentralization

- Redistribution of wealth
- Democratization of decision-making
- Selfsufficient settlements

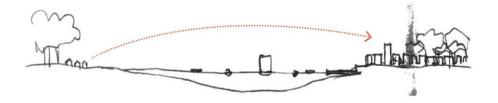
Bioeconomy Preserved Holistic Centralization Descentralization Abandoned Overflowed

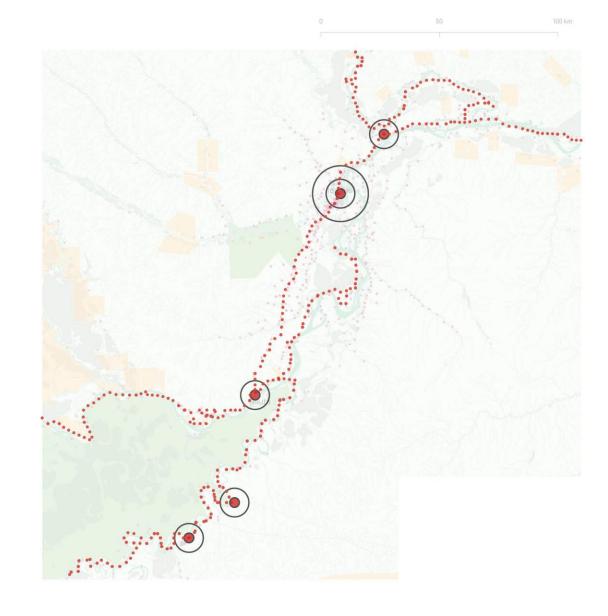
Extraction

Preserved

No dredging is done for the Waterway to take place.

- Bioeconomy capacity enhanced.
- Communities still depend on cities for service provision.
- No economical redistribution.
- Top-down decision-making.





Abandoned

The dredging of the Waterway undermines the conditions for living in communities.

- Extractive economies increase.
- Communities are abandoned and cities spread.
- No economical redistribution.
- Top-down decision-making.

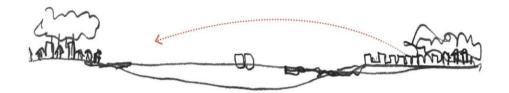




Overflowed

The dredging of the Waterway seeks to compensate local communities services but with extractive economies.

- Extractive economies increase.
- Communities overflow their capacity.
- Economical redistribution is based on extraction.
- Top-down and bottom-up decision-making.



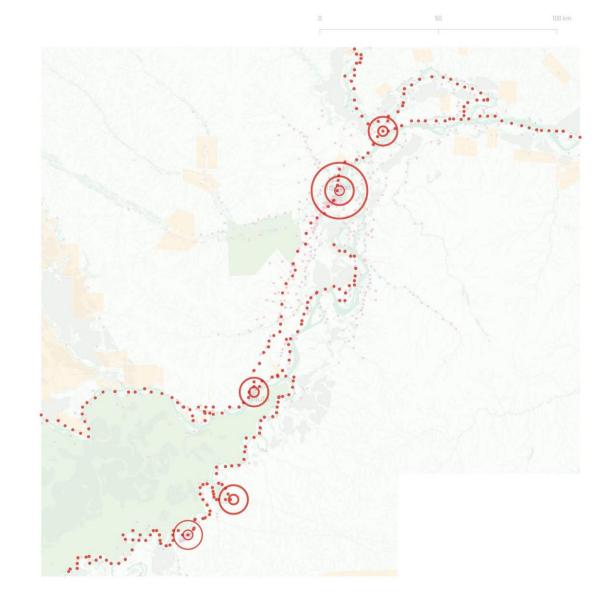


Holistic

The Waterway dredging takes place only in ports and known traditional spaces with low biodiversity.

- Bioeconomy increases.
- Communities and cities grow balanced.
- Economical redistribution is based on biodiversity.
- Top-down and bottom-up decision-making.





"First nations are building a path towards economy and territorial management that allows full self-determination creating an alternative to modernity that includes them, and that means generating business, monetizing the communities...

While Life Plans have shown unpractical to public policy, we might be ready for the emergence of a new concept for intercultural planning"

Diego Saavedra Lima, Peru, 1985 Indigenous development specialist, DAR.









Vision & Strategy

The Stratey fosters an integral landscape economy caring for social wellbeing and ecological health.





Social

Services

network



Biodiversity, Food & Trade

Ecological Productive network

Conservation & Tourism



Health & Education

Community Hubs & Knowledge

Communal landscape economy infrastructures,

opportunities

abundancebased

services &

Basic Services network



Navigation & Logistics



Water, Energy, Waste & Communications

Networks

The systems, hubs and dispositives become networks for interventions at the regional scale, and axis for implementation for the waterway project.



Ecological Productive Network



Bioindustry, Food & Waste



Conservation & Tourism



Basic Services Network



Navigation & Logistics



Water, Energy & Communicatons



Social Services Network



Identity & Knowledge



Health & Education

Design Principles

- Increase biodiversity by nurturing the soil through agroforestry in interstitial spaces: forest edges, waterfronts, urban peripheries and borders, degraded areas, vacant lots.
- Improve the ecological connectivity of protected patches through indigenous protected land.
- c Incorporate water sensitive design in floodable zones and waterfronts.
- d Develop strategic punctual interventions with local resources and compensation actions.

- Connect communities and cities improving navigation systems and harbors.
- f Improve waterfront trade hubs as strategic places for development.
- g Implement decentralized services (water, sanitation, energy, waste, communication) in public hotspots & private lots.
- h Create flexible infrastructures that allow expansion and retraction of components

- Foster multipurpose use of communal houses, schools, sports facilities as community centers.
- Multiply laboratories for research and development innovation and technologies.
- Replanning and implementation of projects.
- Reorganize collaboration through communal landscape governance processes.

Ecological Productive Network



Bioindustry, Food & Waste



Conservation & Tourism

Interconnected Hubs Network







Health & Education

Selfsufficient Settlement Network



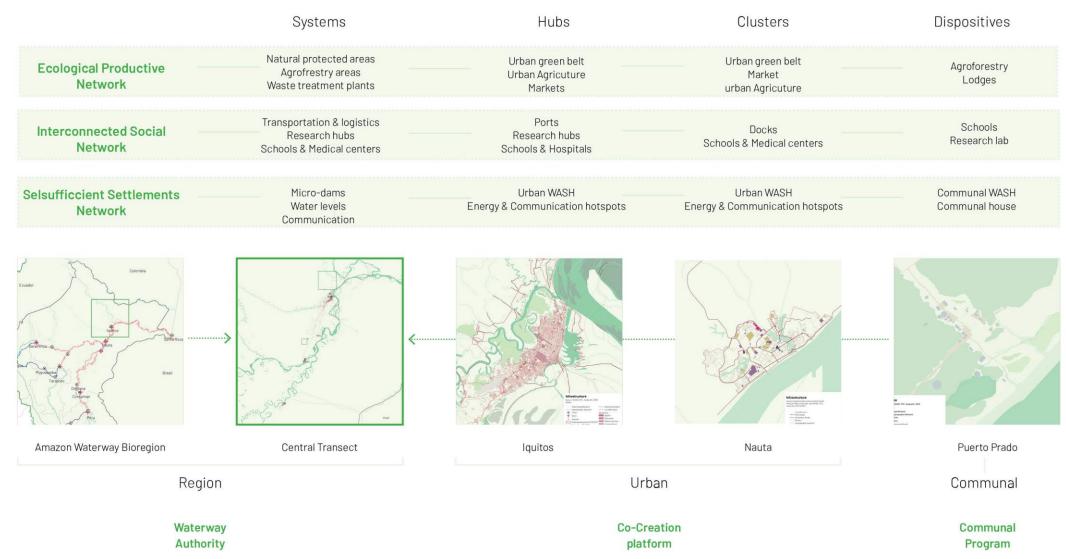
Identity & Knowledge



Water, Energy & Communications

Interventions

The Interventions are composed by systems, clusters, hubs and dispositives that integrate the Networks.



Co-Creation Process

1

Common Understanding



Local Data Collection

Local methodologies for retrieveing data, knowledge and practices.



Communal Committees

Multiactor Committees, rotative responsabilities. Discussion of needs and desires

2

Co-Design



Dialogue Spaces

Organic levels.

Focus groups differentiated by Woman, Wise, Young.



Designing Actions

Design workshops, meetings, feedback

3

Decision Making



Adaptive Roadmap

Designing alternatives and scenarios for decision making



Agreements

Public agreements and calendar stablishment shared responsabilities.

4

Implement



Protocols

Consolidation of indicators.

Monitoring Adaptive
pathways. Two years review.

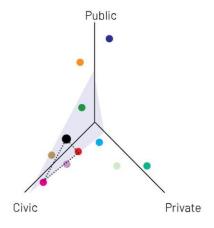


Evaluation

Adjust & replication of pilots, start of different phases.

Adaptive Roadmap

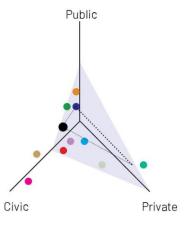
- Entrepeneurs
- NGOs
- Municipalities
- Regional Government
- National Government
- Social Organizations
- Producer Organizations
- Indigenous Groups
- Informal workersReal Estate Developers
- Designers (Academia)



Civic led intervention

Civic and public cooperation and finance

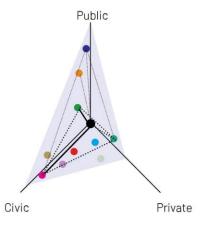
Social organziations, NGOs, entrepeneurs, CBOs, indigenous communities



Private led intervention

Private and public cooperation and finance

Industries, enterprises, public-private concessions, retail, real state developers



Public led intervention

Public guided cooperation and finance with private and civic organizations

Municipalities, Regional and National Government, Development agencies.



Puerto Prado



1. Dock 2. Maloca

Communal House
 Pre-School

5. Primary School

^{4.} Footbal field & Forest route

Puerto Prado



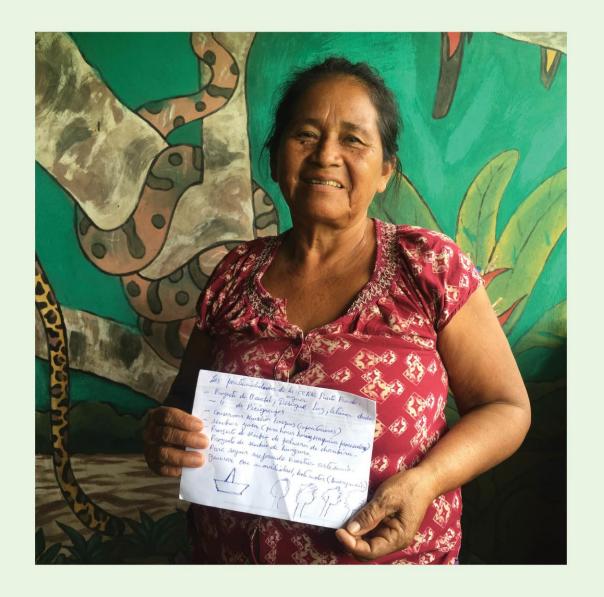
Co-creation: Common Understanding

"For me nature is very good, because we know how to take care of her, because we live for her, from her we heal, is house of the animals, then for me, nature is life for us"

"Caring for the forest is what we must do, for the forest gives us life, we need to give life back to it."

We have a diversity of potentials. Conservation, agriculture, artisanries. We could plant bamboo to later use them to build, create fishing farms to have healthy fishes, provide light for each home"

Ema Tapullima 1961, Puerto Prado, Peru Leader of the Native Community



Riverfront

- a. Increase biodiversity in interstitial spaces
- c. Incorporate water sensitive design in floodable zones and waterfronts

Fishes

Sabalo

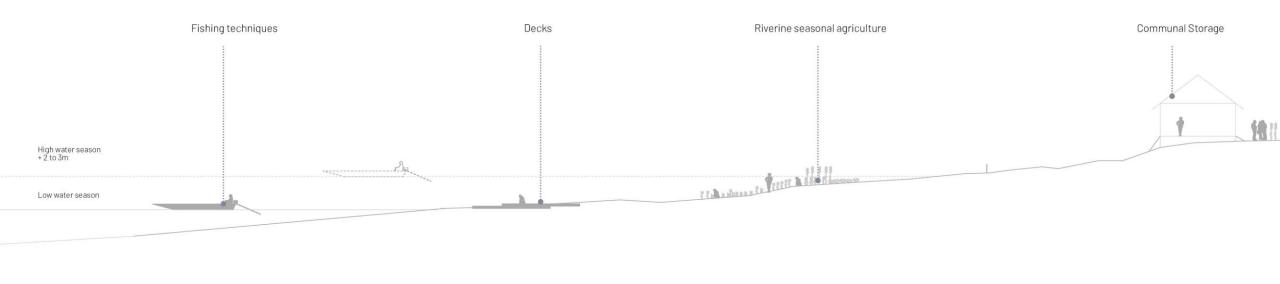
Palometa

Carachama

Zungaro

Boquichico

e. Connect communities and cities improving navigation systems and harbors



Crops

Rice

Beans

Banana

Manioc

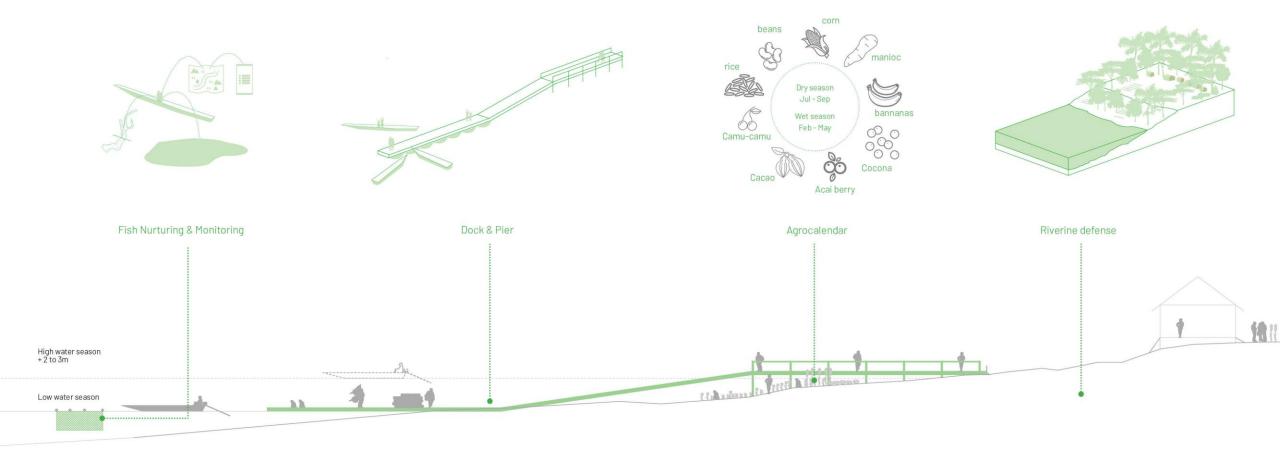
Store

Wood

Food

Canoes

Riverfront



Fishes: Boquichico Sabalo Palometa Zungaro Carachama Paiche Dorado

Crops Manioc Rice Beans Banana Kudzu

Fixate the soil Diffuse inundation Prevent erosion Enrich the soil Construction material Bamboo

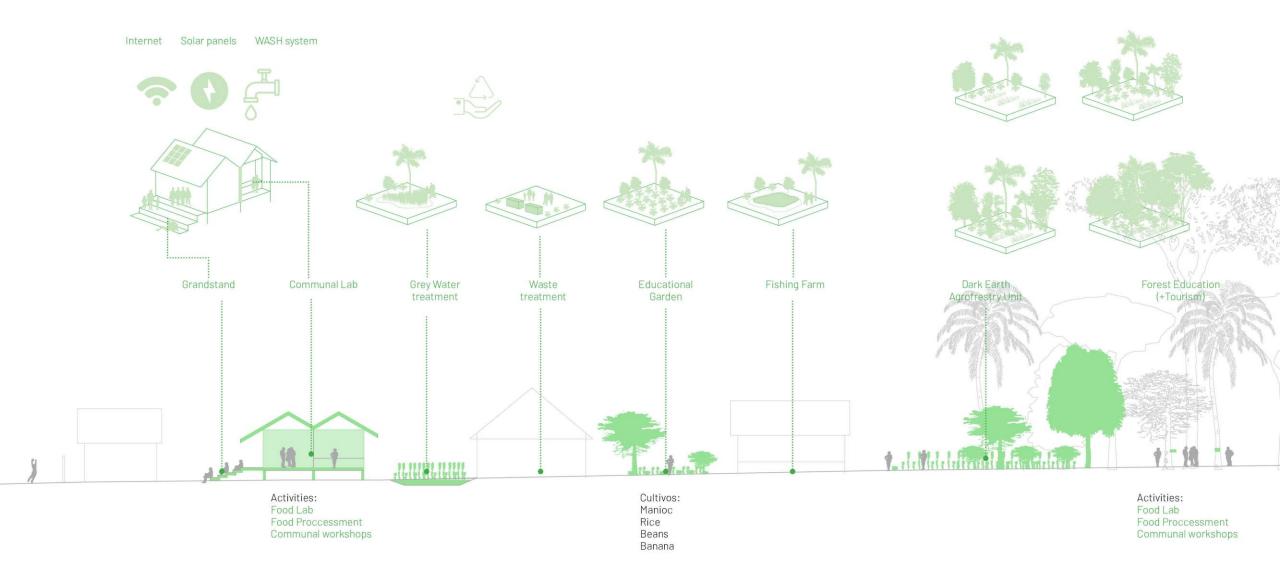
Settlement & Forest

- d. Develop strategic punctual interventions with local resources and compensation actions.
- g. Implement decentralized services (water, sanitation, energy, waste, communication) in public hotspots & private lots.
- i. Foster multipurpose use of communal houses, schools, sports facilities as community centers.
- h. Create flexible infrastructures that allow expansion and retraction of components

Leisure space School Canopy Forest.

Animals: Insects Frog Monkeys Rice Beans Banana

Settlement & Forest













Riverfront



Open space



Market Street

Nauta Waterfront
 Sports Court

3. Modelo Market4. Central Square

Fixed Street Market Ш

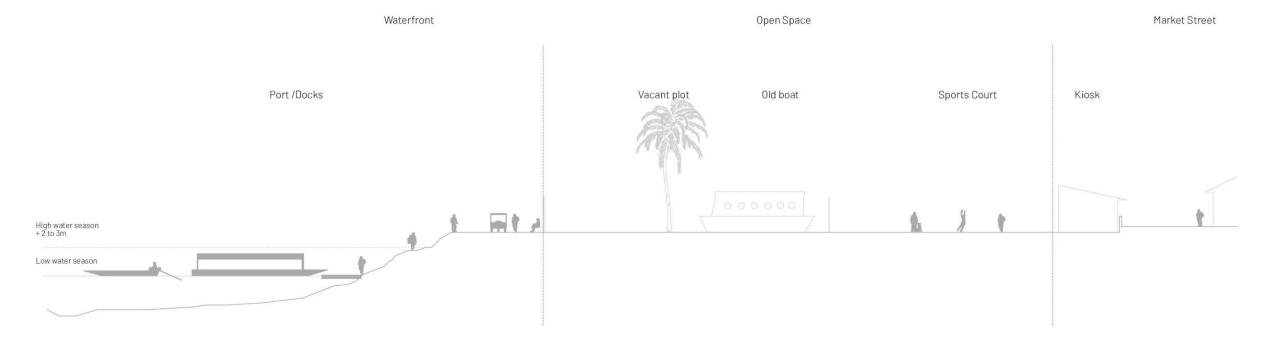


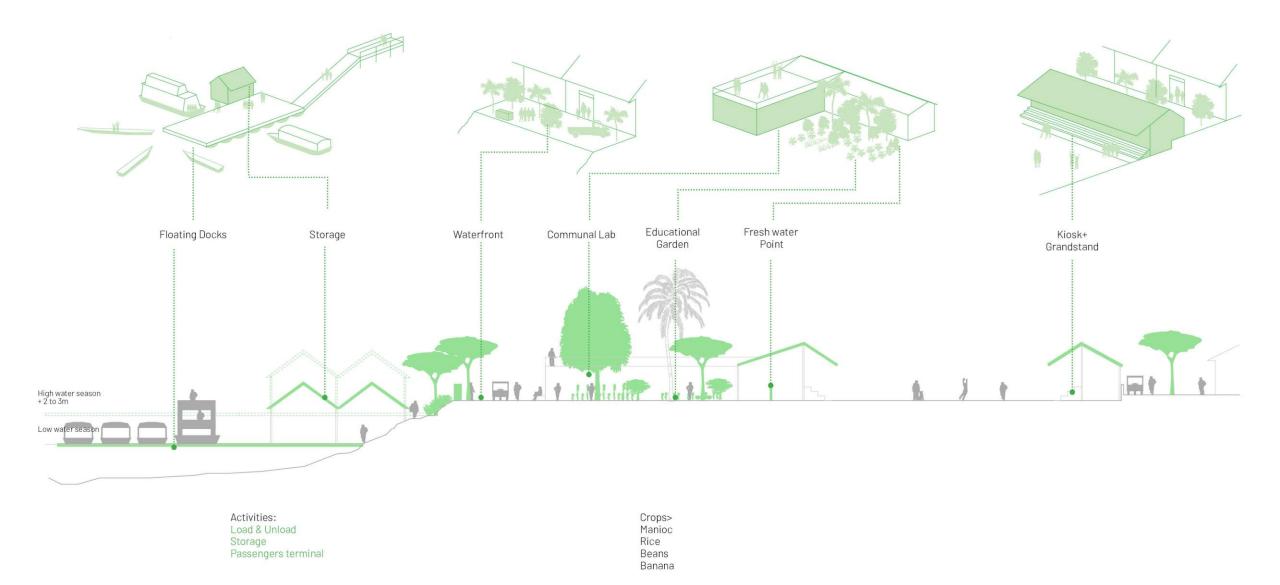
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Co-creation: Co-Design





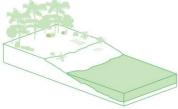


Biofood Hubs

Spaces for agroforestry practices, biodiversity conservation and communal basic services





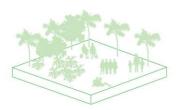


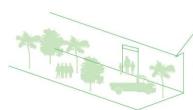


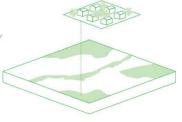
Green Belt

Beaches & Boulevards

Agroforestry plots



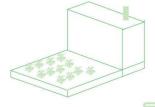




Parks & Squares

Slow Corridors

Public & Military Sites as reurbanizaton testbeds



















Scenarios

Existing Situation



Housing

Communal spaces

Communal Garden

Wet Season Bridges

Public Building
Shared Forest



Scenarios

Civic led interventions





Scenarios

Private led interventions

Wet Season Bridges
Commercial Street
Housing
Communal spaces
Communal Garden
Wet Season Bridges
Public Building
Shared Forest



Scenarios

Public led interventions

Wet Season Bridges
Commercial Street
Housing
Communal spaces
Communal Garden
Wet Season Bridges
Public Building
Shared Forest



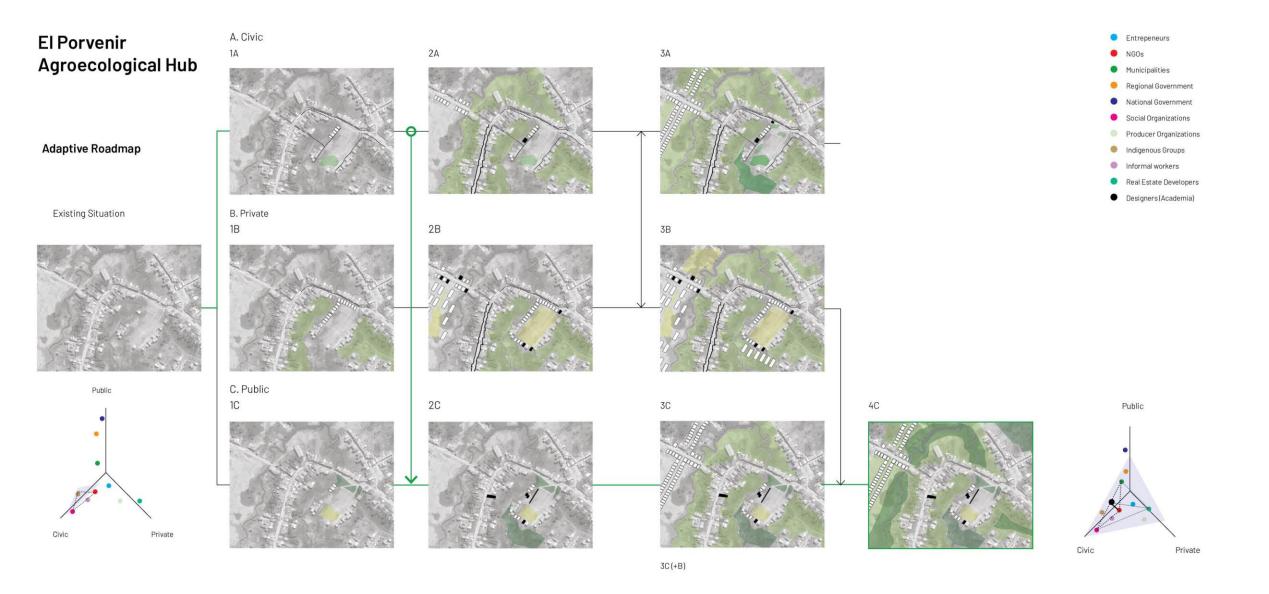


FIG. 1.4 The EI Porvenir Agroeocological Hood

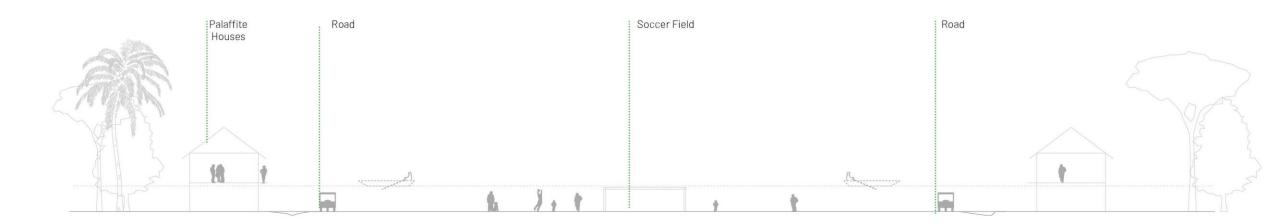
Amazon Way

El Porvenir Agroecological Hub

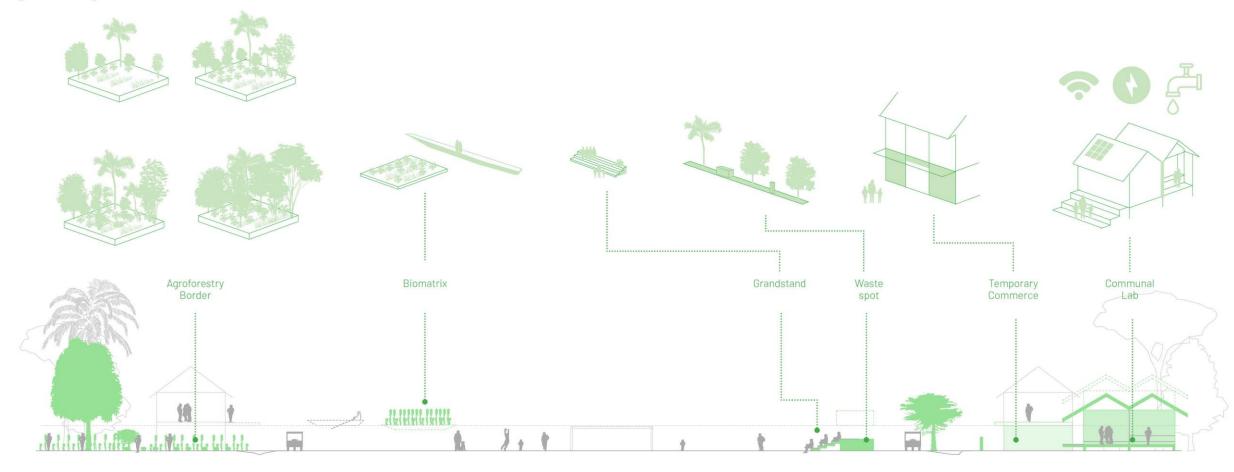
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- i Foster multipurpose use of communal houses, schools, sports facilities as



El Porvenir Agroecological Hub



Crops: Manioc Rice Beans Banana Activities: Food Lab Food Proccessment Communal workshops





Trade Hubs

The Hubs are composed by a mixture of ports and markets, together with green commercial corridors, green-blue-grey public spaces.







Modelo Marke







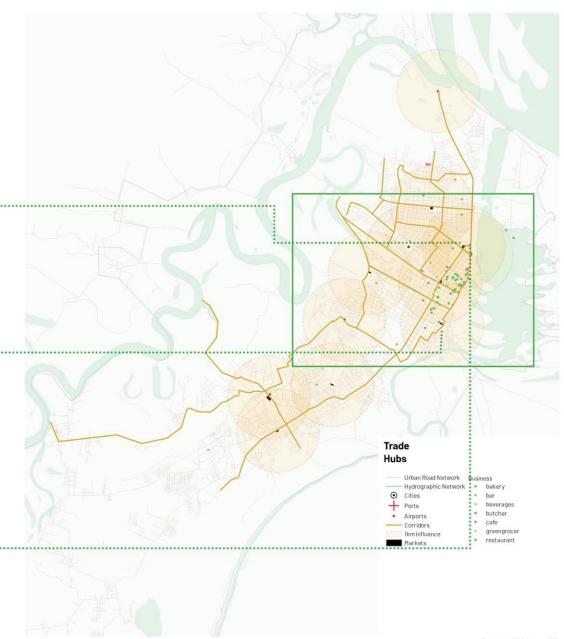
Belen Market



Puerto Lao Port









The role of markets and ports is redistributed in bigger frameworks using the existing networks and learning from the flexibility and dynamics use of these places.









Productores Market
 Productores Port Modelo

3. Modelo Market

4. Tourist Port

Fixed Street Market

Pedestrian itinerant Market



Central Trade Hub Scenarios

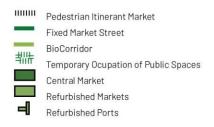
Existing Situation





Central Trade Hub Scenarios

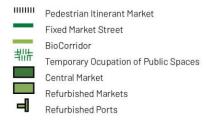
Civic led interventions





Central Trade Hub Scenarios

Private led interventions



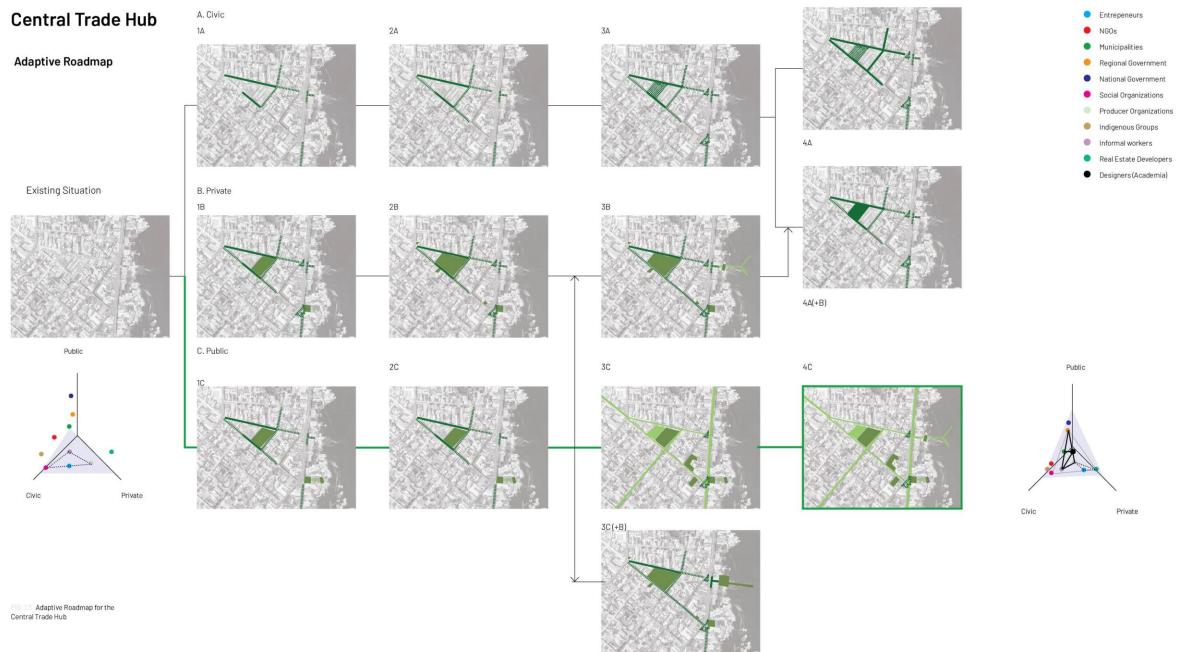


Central Trade Hub Scenarios

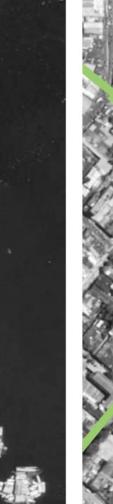
Public led interventions













1. Productores Market 2. Productores Port Modelo 3. Modelo Market

4. Tourist Port

Fixed Street Market

Pedestrian itinerant Market

1. Productores Market 2. Productores Port Modelo 3. Modelo Market

4. Tourist Port

Fixed Street Market

Pedestrian itinerant Market









1. Productores Market 2. Productores Port Modelo

3. Modelo Market

4. Tourist Port

Slow Corridors

Pedestrian itinerant Market









1. Productores Market 2. Productores Port Modelo

3. Modelo Market

4. Tourist Port

Pedestrian itinerant Market

Slow Corridors

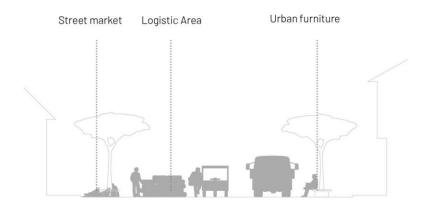
1. Slow Corridor 2. Flexible Areas

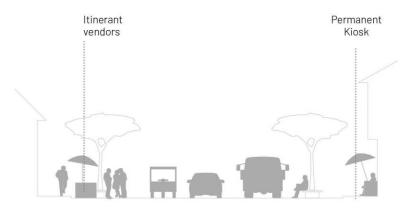
3. New vertical connections 4. Extended Dock Storage

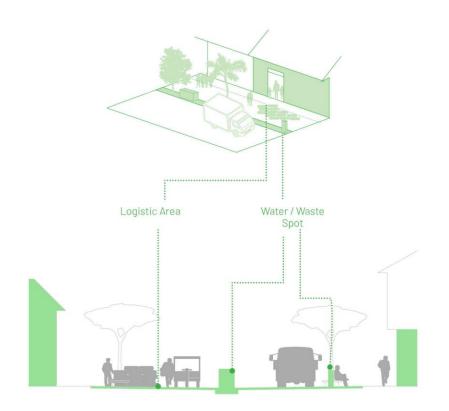


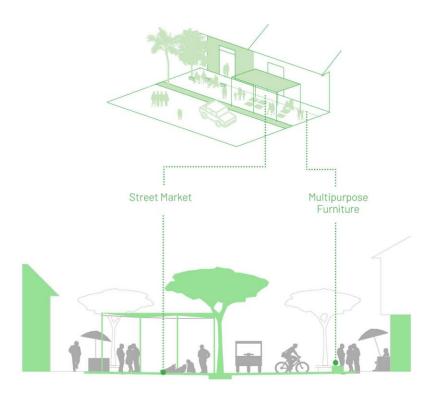


- e. Connect communities and cities improving navigation systems and harbors.
- c. Incorporate water sensitive design in floodable zones and waterfronts.
- d. Develop strategic punctual interventions with local resources and compensation actions.













Front view of the Productores Market



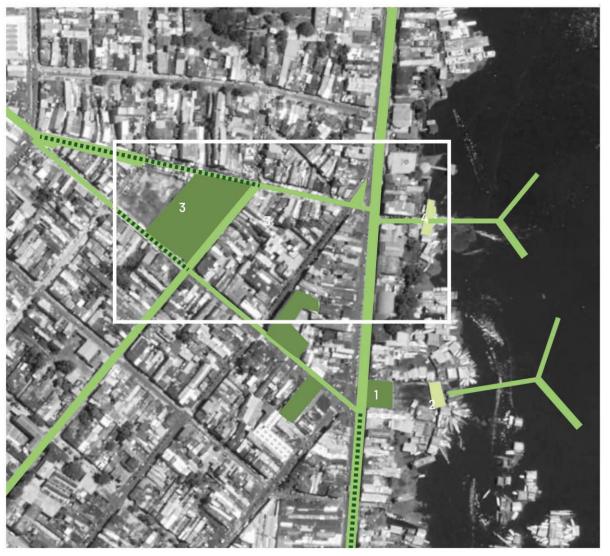


Productores Market & Port dynamics





Central Market & Puerto Lao Port









1. Productores Market 2. Productores Port Modelo

3. Modelo Market

4. Tourist Port

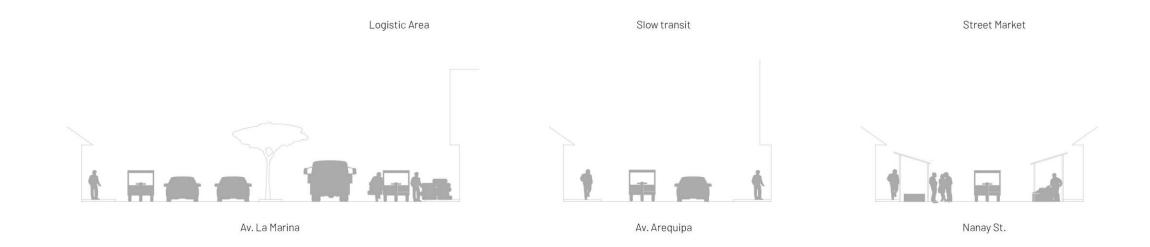
Fixed Street Market

Pedestrian itinerant Market

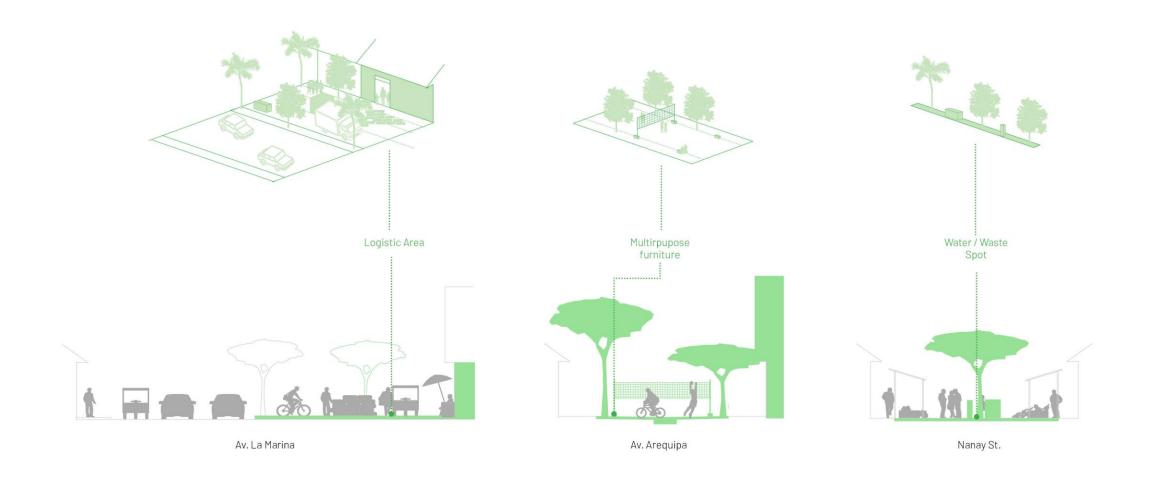


Central Market & Puerto Lao Port

- e. Connect communities and cities improving navigation systems and harbors.
- c. Incorporate water sensitive design in floodable zones and waterfronts.
- d. Develop strategic punctual interventions with local resources and compensation actions.



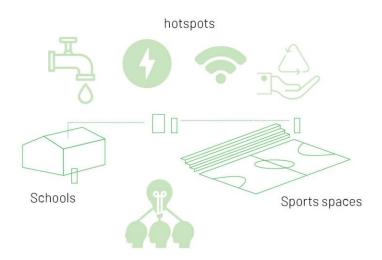
Central Market & Puerto Lao Port

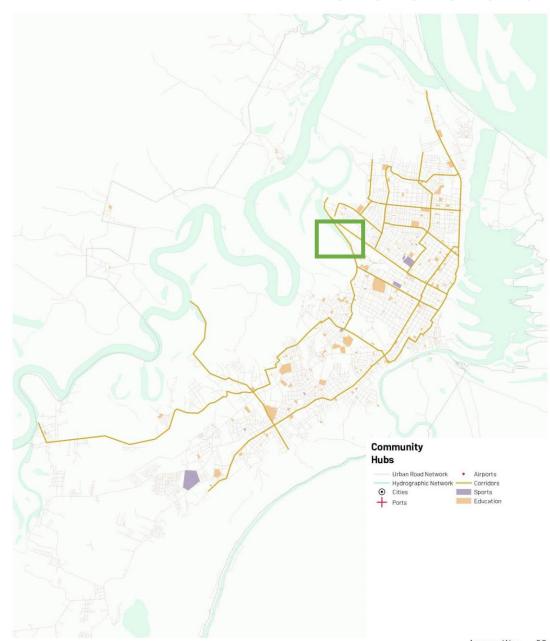


Community Hubs

Spaces for communal services, knowledge exchange & research, leisure

- e. Connect communities and cities improving navigation systems and harbors.
- c. Incorporate water sensitive design in floodable zones and waterfronts.
- d. Develop strategic punctual interventions with local resources and compensation actions.
- e. Connect communities and cities improving navigation systems and harbors.
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Scenarios

Existing Situation



Private Port

Public Space

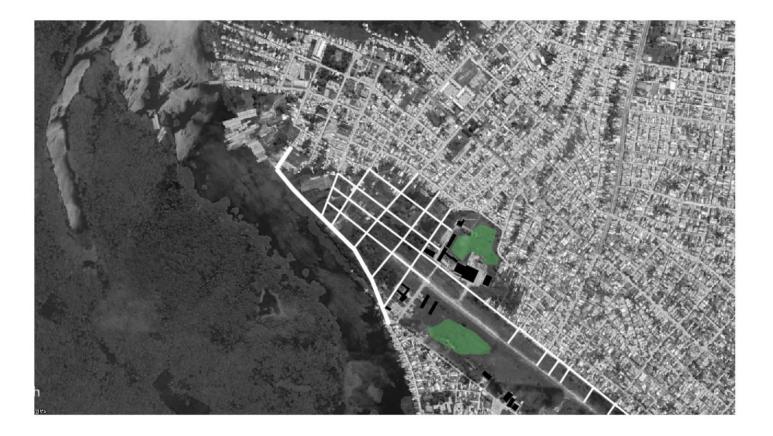


Scenarios

Civic led interventions



Public Space



Scenarios

Private led interventions



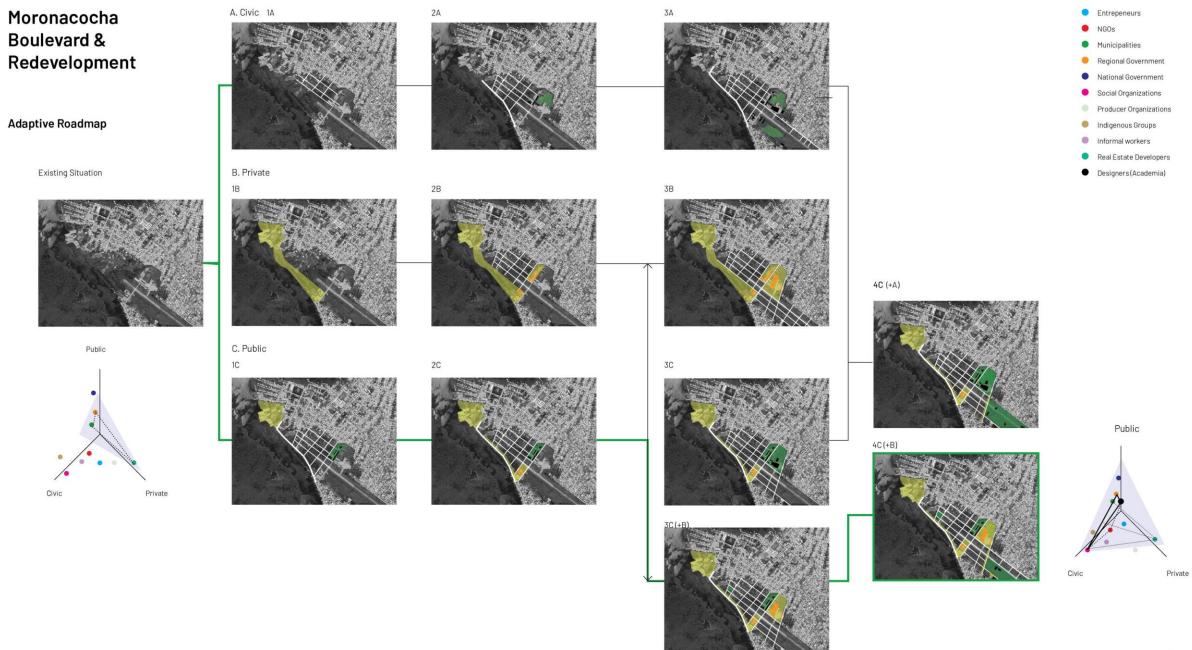


Scenarios

Public led interventions







Co-creation: Agreements

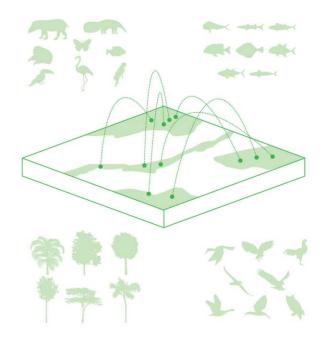




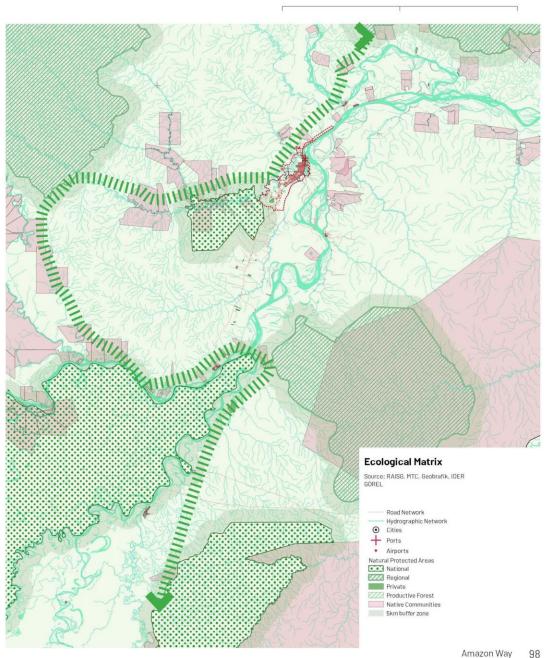


Biocorridors System

The systems create the conditions for the hubs and the dispositives to take place. They are large infrastrutcres and services that structure the territory for thriving.



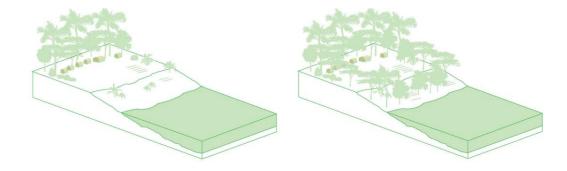
- Protected lantd Cultural and Natural reserves connectivity



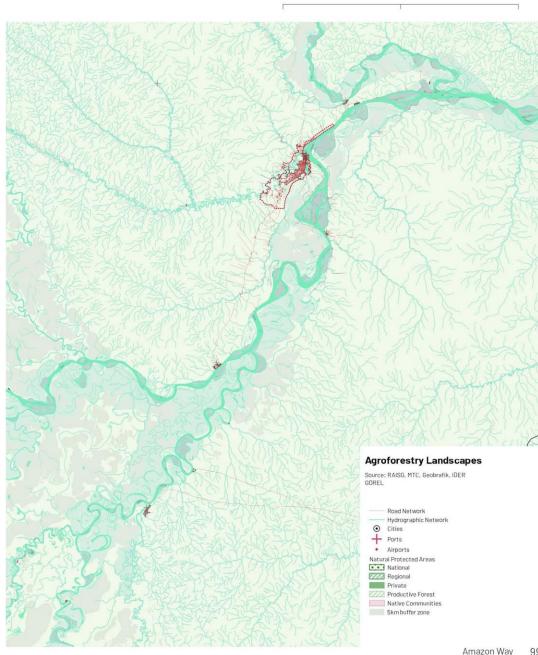
100 km

Agroforestry System

The systems create the conditions for the hubs and the dispositives to take place. They are large infrastrutcres and services that structure the territory for thriving.

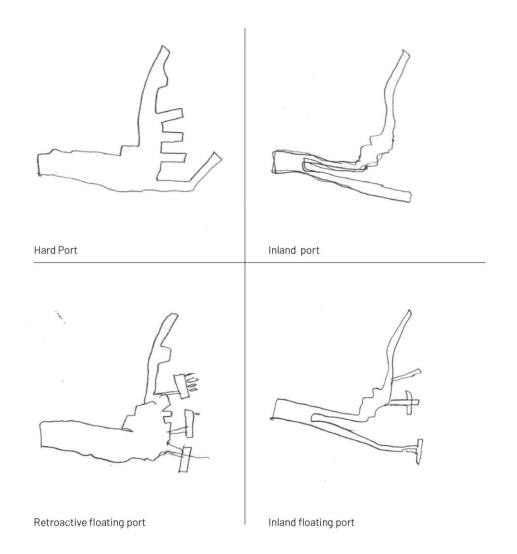


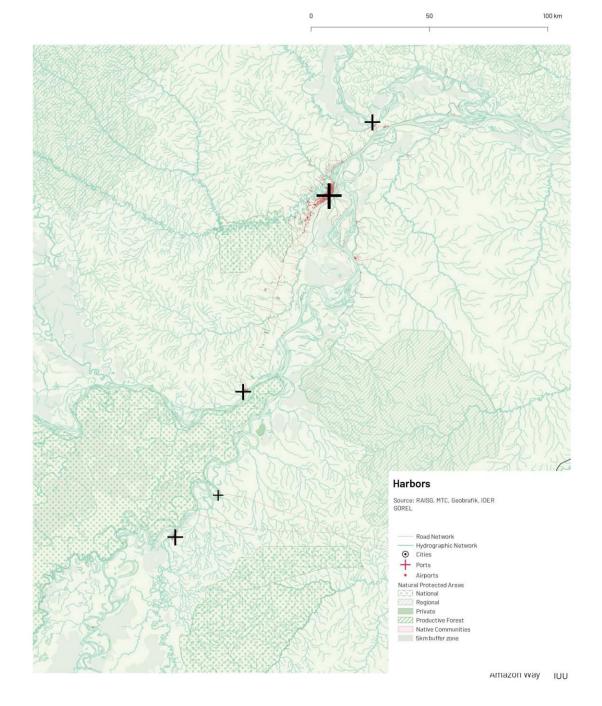
- Agroforestry areas Potential for production



Harbors System

The systems create the conditions for the hubs and the dispositives to take place. They are large infrastrutcres and services that structure the territory for thriving.





Strategic Landscape System

The systems create the conditions for the hubs and the dispositives to take place. They are large infrastrutcres and services that structure the territory for thriving.

- Micro-dams

Redisrtibuting energy

- Hydrodinamic Stations

Morphology, water, flooding

- Internet sublfluvial line

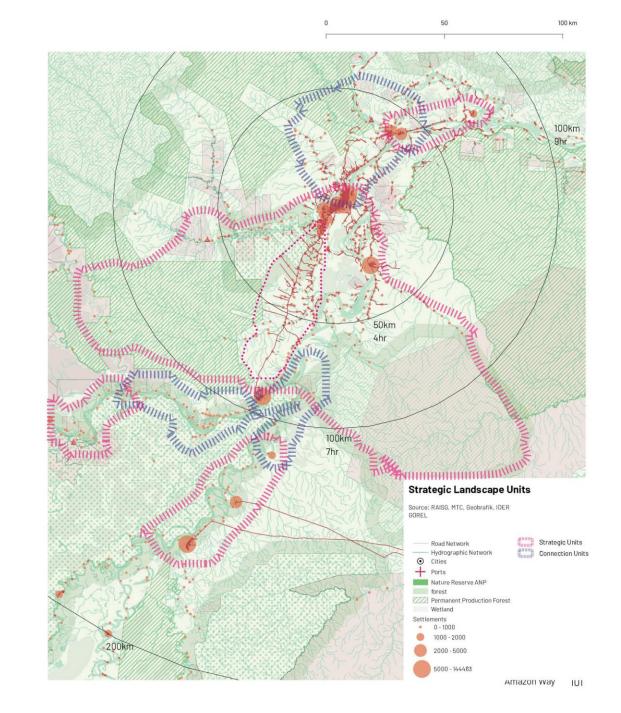
Yurimaguas-Napo project

- Education & Health

New rewaved Basic services

- Research Clusters

Traditional knowledge & Identity



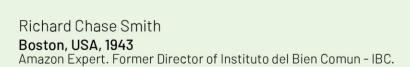
Replication

Design principles on the tested Transect can be replicated through the similar interventions in the categorized settlement:

- Main Cities: Iquitos, Pucallpa, Yurimaguas
- Mid Cities: Nauta, Requena, Santa Rosa
- Towns: San Lorenzo Lagunas, Jenaro Herrera,
- Communties: Tamishyacu, Sant Rita, Parinari



... We need to build an idea of areas, landscapes, territories towards a wider common vision, opening the consciousness that our future is linked to the future of the community, the river, nearby urban areas, and protected lands, as a challenge to manage them more wisely as a planning unit"

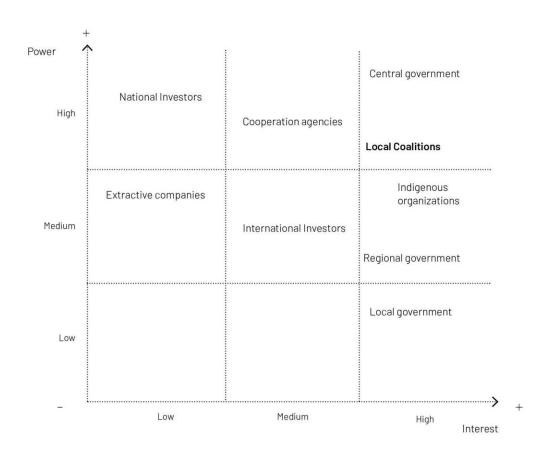




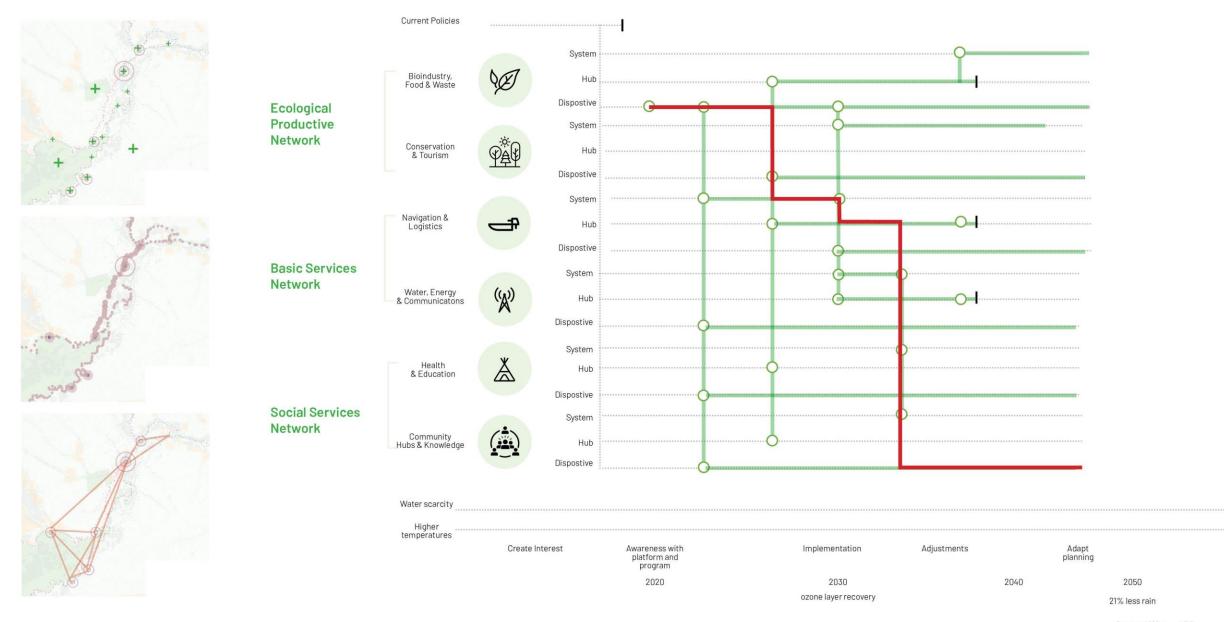


Stakeholders Power & Interest

	Stakeholder	Туре	Level
1	BID	Cooperation	International
2	AECID	Cooperation	International
3	CAF	Cooperation	International
4	UN	Cooperation	International
5	CDB	Cooperation	International
6	Global Forest Watch	Cooperation	International
7	Moore foundation	NGO	International
8	Wildlife Conservation Society	NGO	National
9	DAR	NGO	National
10	IBC	NGO	National
11	SPDA	NGO	National
12	COHYDRO	Private	National
13	PLUSPETROL	Private	National
14	LP0	Private	National
15	Peru petro	Public	National
16	MINEM	Public	National
17	ENAPU	Public	National
18	APN	Public	National
19	FONDEPES	Public	National
20	FONCODES	Public	National
21	GOREL	Public	Regional
23	Provincial Municipality of Maynas	Public	Local
24	District Municipality of Iquitos	Public	Local
25	District Municipality of Belen	Public	Local
26	District Municipality of San Juan Bautista	Public	Local
27	District Municipality of Punchana	Public	Local
28	ORPIO	Indigenous	Local
29	CORPI	Indigenous	Local
30	ORAU	Indigenous	Local
31	AIDESEP	Indigenous	National



Strategy Adaptation

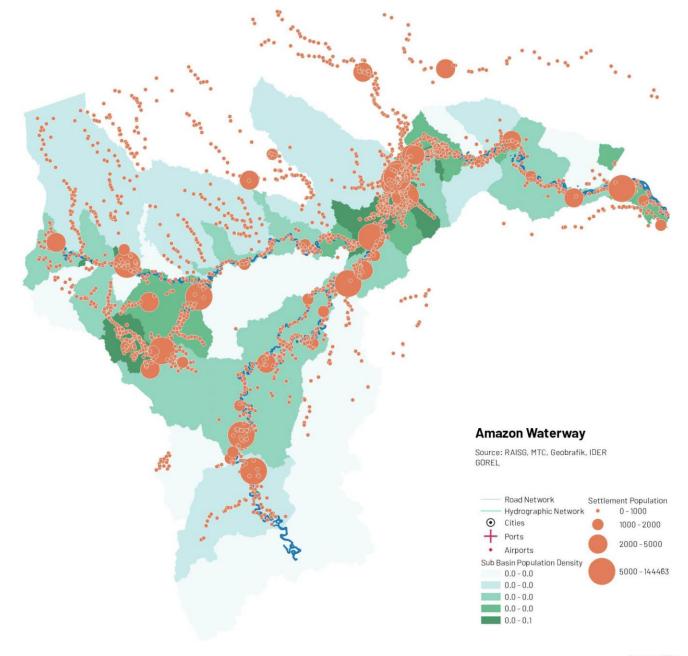


Implementation

Where to intervine, prioritization by:

- time-distance,
- microbasins as basic unit
- poorness levels,
- lack of basic services
- lack of health and education
- agrofrestry potentials

Planning process to define which settlements could develop which interventions



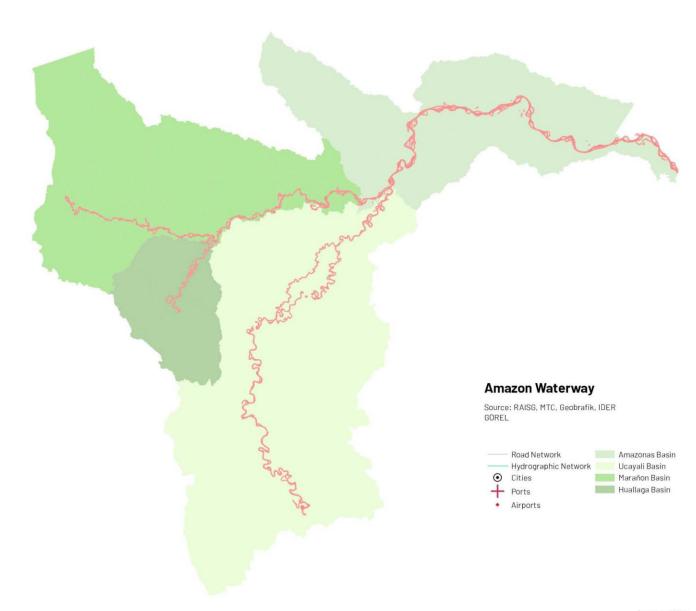
The Waterway **Agency**

Regional planning led by the Central & Regional Government

4 Planning Comittees Sub-basins & microbasins planning processes.

Involving Local governments, CBOs & NGO

Oil canon or Waterway fund for implementation

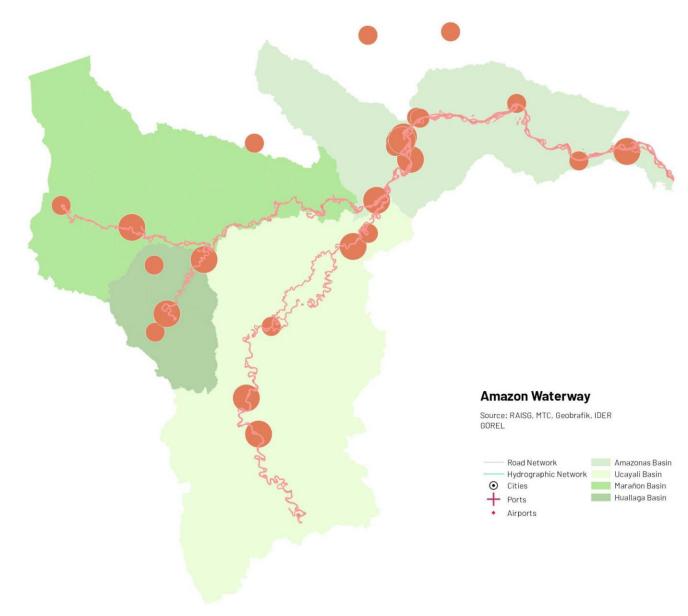


The Urban Amazon **Plattform**

Co-creation plattform to redesign Big and intermediate Cities.

Led by a committee composed by the Regional Government and local municipalities.

Committee involving local municipalities, CBOs & NGO

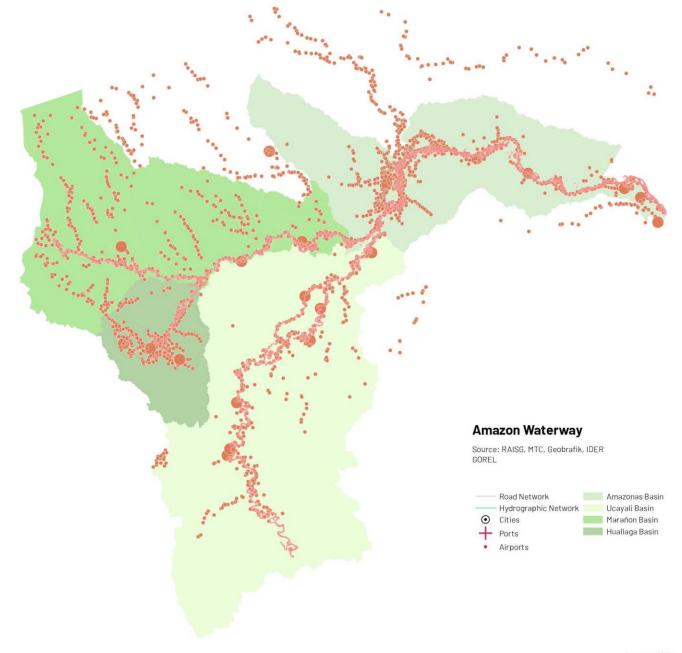


The Communal Wellbeing **Program**

A program to implement dispostives in an integral way, led by a committee composed by local municipalities & indegenous federations

Led by the Regional Government. Committee involving local municipalities, CBOs & NGO

Strategic towns as key developments for organic provision to communities



Recommendations

Public-Civic led planning benefits could have a bigger reach.

- a. New Territorial Governance & Planning: from previous consultation to co-creation
- b. Diversifying & Decentralizing tools for Action
- c. Territorial Approach Public Policy
- d. Autonomy and Affection: nurturing transitions (Material & Pedagogic)



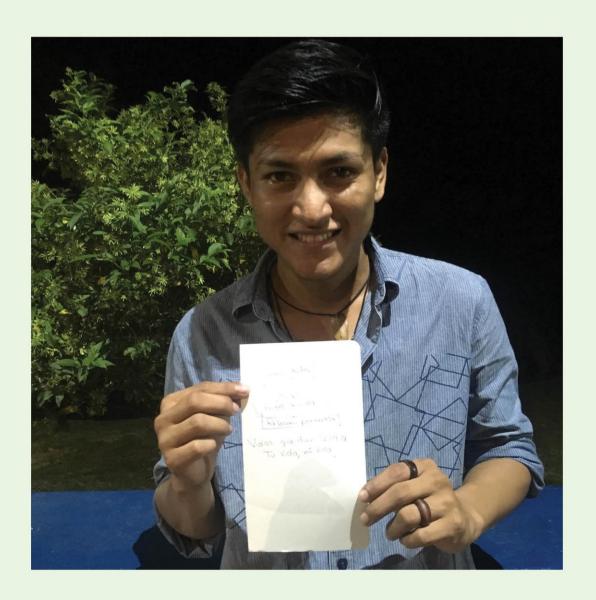
"I have learned I am one being, among many others: humans, animals, plants, spirits.

These beings are the life between life and need to have a reciprocal and harmonious relationship, since these other lives are the ones that give life back to you, to my life.. **Lives that give life**".

Pedro Grandez

Nauta, Peru, 1998

Kukama Kukamiria Musican and Performer



Challenges

- Difficulty to monetize the implementation due to actual uncertainity.
- Underrepresentation of indigenous communities and their desires to develop: Co-creation, building as a shared task
- Sectorial planning is the right tool? Or a comprehensive planning for the cycles and limits of landscapes with series of small actions for regeneration a better tool?
- Integral strategies and its coalitions could reassign traditional roles: public (observer), private (developer) civic (receptor). Using privileges for redistributing power horizontally.



Learned Lessons

- Translation of indigenous worldviews needs a fine grain study.
- Although structural changes are needed, many actions can be done with the actual framework.
- Spatial transformations structure the basis of the development model.
- Creation of local coalitions should bridge landscapes and institutions.
- A mid point between the state and communities needs to be reached for holistic development to happen; an initial input for a New Amazon Pact

Amazon Way

Territorial Co-creation for *Life* in the Peruvian Amazon Waterway

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P5

2020.06.02



