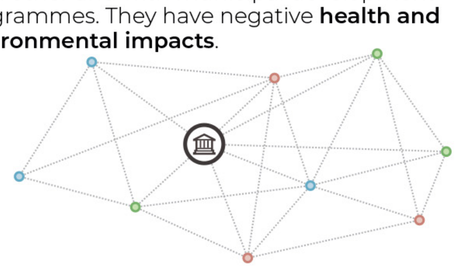
8th ICBR Lisbon | Nov 2018
Building 4Humanity
DESIGN COMPETITION
Category 1: Resilient Projects (**Built**)
Team Project Coordinator(s): *Belen Desmaison*
Team Members: *K. Espinoza, U.Vásquez, F. Carpio, PUCP Students*
Date of Conclusion: *05/2018*
Project Location: *Iquitos, Loreto, Peru*
Team Code: **B4H-DC1108**

CO-CONSTRUCTING SUSTAINABLE AND INCLUSIVE LIVELIHOODS
IN RESETTLEMENT PROJECTS IN THE PERUVIAN AMAZON

PUBLIC-COMMUNITY
PARTNERSHIPS FOR DEVELOPMENT

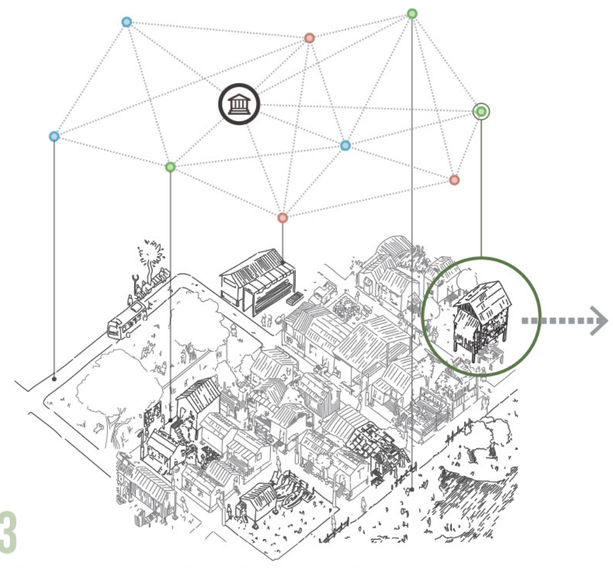
1

Already-existing activities are not articulated with each other and with municipal development programmes. They have negative **health and environmental impacts**.



2

We propose co-designing a network or system of **sustainable productive activities** articulated with municipal **development programmes.**

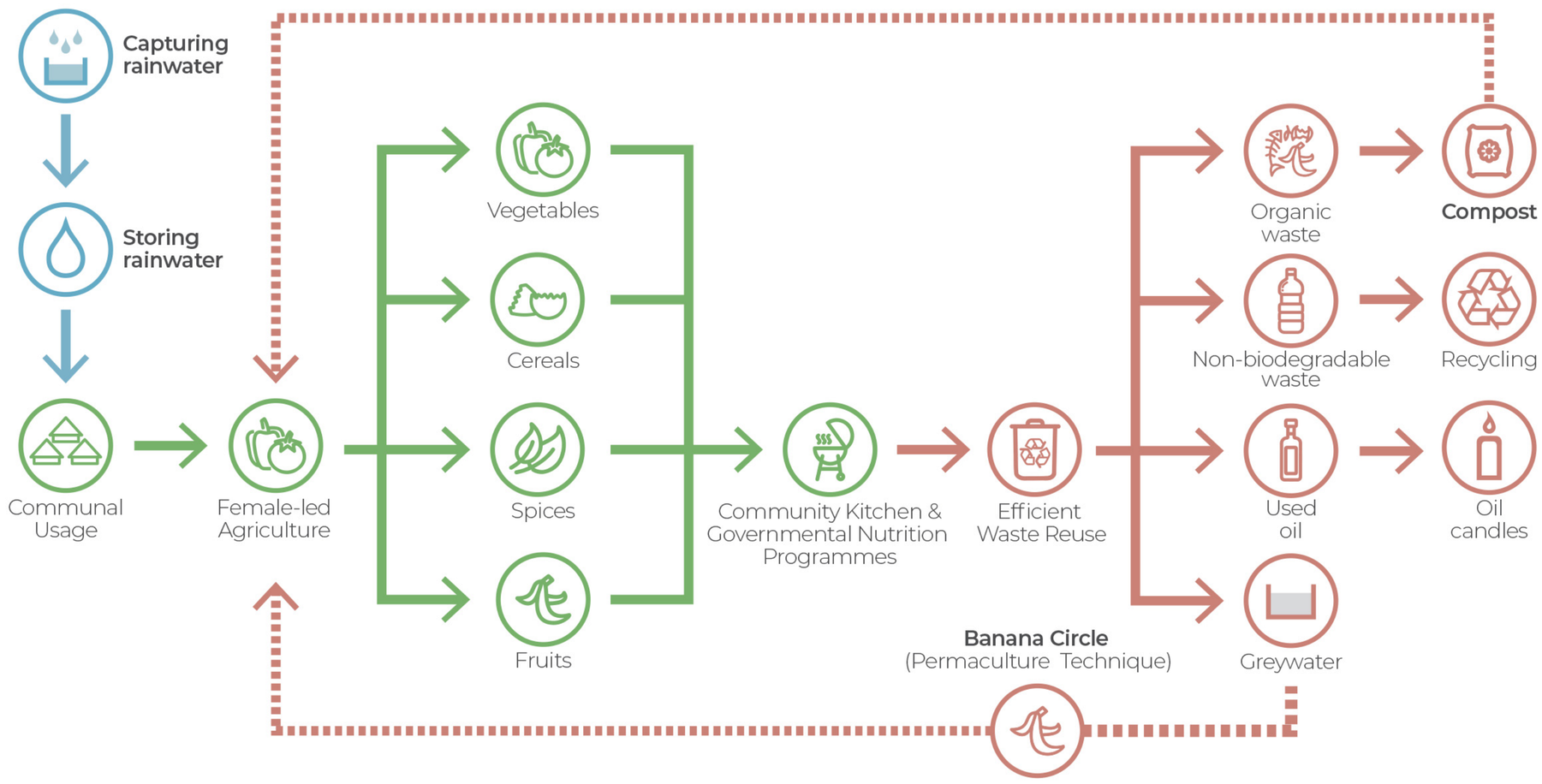


3

This system must be articulated with **urban development plans** to be spatialised, that is, providing proper spaces/platforms to promote the development of these activities.

AMAZONIAN PRODUCTIVE
SYSTEM

WATER SUPPLY | PRODUCTIVE INITIATIVES (PROMOTED BY COMMUNITY AND/OR LOCAL GOVERNMENT) | WASTE MANAGEMENT



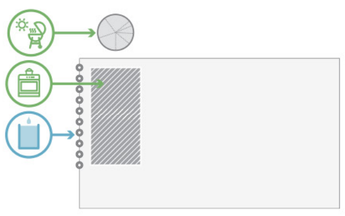
LA MALOCA

La Maloca is the name for communal spaces that were the central places of Amazonian settlements since before the colonial period. It was the chosen site for work given its social value.

COMMUNITY PARTICIPATION & CAPACITY BUILDING

The community and the local government actively participated in decision-making, implementing, maintaining, monitoring, and evaluating both the proposed system as well as the chosen catalytic components. They are now capable of replicating the proposals elsewhere, thus generating alternative forms of employment through the construction process itself.

CO-PRODUCED PROPOSAL

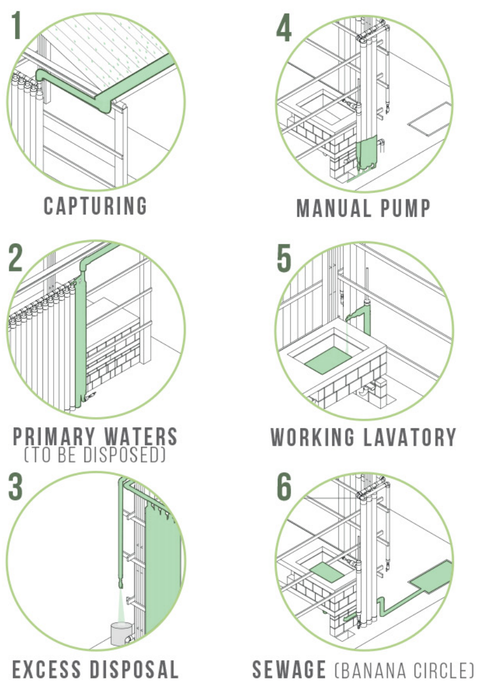


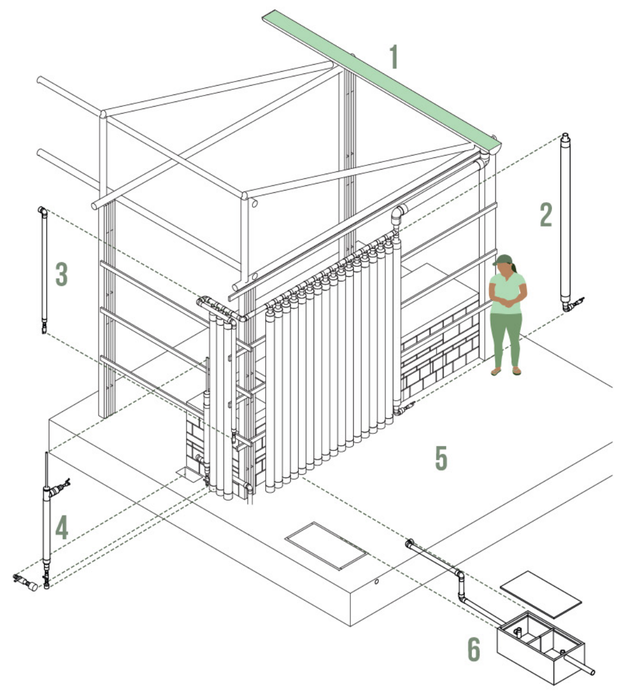
COMMUNAL ECO-KITCHEN = A **CAPTURING STORING & TREATING RAINWATER** + B **EFFICIENT STOVE & GRILL** + C **SOLAR GRILL**

INTEGRATED TO *LA MALOCA*

CO-DEVELOPED APPROPRIATE TECHNOLOGIES

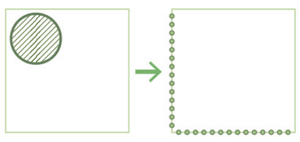
A



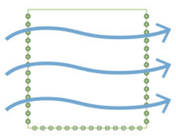


BENEFITS

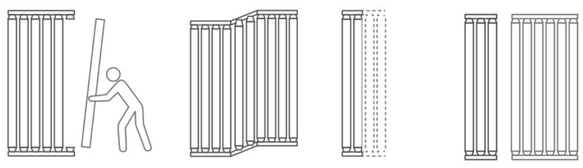
Saves space compared to traditional water storing tanks.



Tubes can be used as a **permeable** non-bearing wall that permits

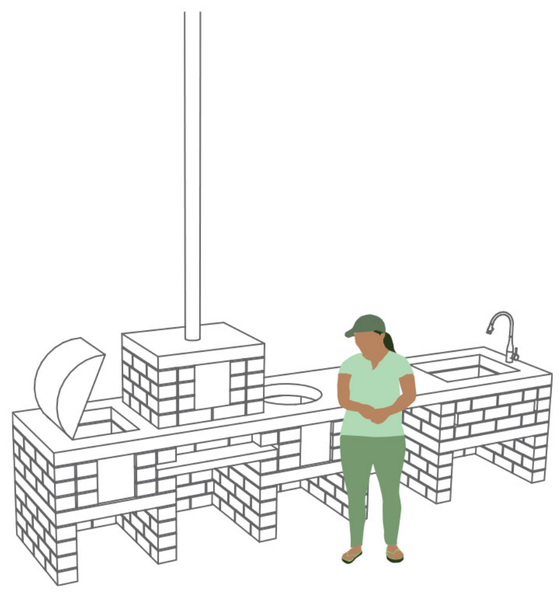


Replicable **Adaptable** **Modular** **Economic**



RAINWATER

B



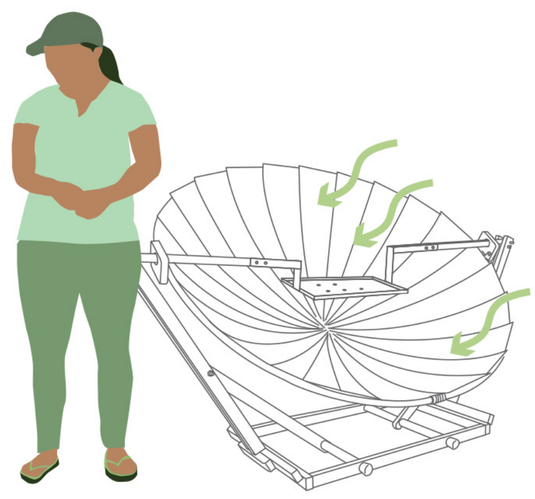
Uses **less fuel** to cook than traditional stoves and grills.

Reduces exposure to smoke and subsequent **respiratory and visual health** impacts.

Reduces **burn risks.**

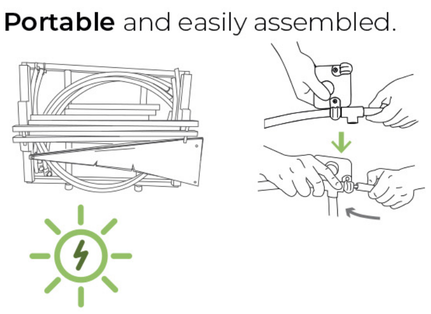
WOOD CHARCOAL SAWDUST

C



Free and unlimited thermal solar energy.

Portable and easily assembled.



SOLAR ENERGY

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CLIMATE REFUGEES

According to UNHCR (UN Refugee Agency) **by 2050**, an estimated **250 million people** worldwide will be **displaced** due to the effects of **climate change**. Currently, **state-led relocation projects** face many challenges due to their **environmental, social, cultural, and economic impacts**. For these reasons, they are referred by UNHCR as **the last resort**. However, in the upcoming decades, this will be the **only option available** for many displaced communities. Therefore, there is an **urgent call to improve current models and processes of relocation projects.**

We seek to **co-produce recommendations to improve current models of relocation projects**. We actively engage the local subnational government, academia, NGOs, and the population in urban and architectural design architectural strategies that seek to **provide spaces** that foster **socially just and climate compatible development.** We see the co-produced strategies and the **collaborative decision-making process itself** as crucial for the **strenghthening of adapting capacities** towards the flourishing of resilient citizens.

BELÉN: A HISTORIC NEIGHBORHOOD

We work in Iquitos, the capital of the Peruvian Amazon, where the Ministry of Housing is leading the relocation of 16,000 citizens that live in the "Zona Baja de Belén" (ZBB) (Fig.1), a historic neighbourhood of Iquitos located in an area with seasonal flooding (Fig. 5). 85% of its inhabitants work in the local market, the most important one in the Peruvian Amazon (Fig. 3), with a close relationship with the Itaya river. The neighbourhood is being relocated due to the changing course of rivers, which will eventually join the Itaya and the Amazon rivers. When this happens, no infrastructure will be able to withstand the volume and speed of the Amazon.

NCB: STATE-LED "CITY"

The new settlement, Nueva Ciudad de Belén (NCB), is located 13.5km away from ZBB, in the buffer area of a Natural Reserve (Allpahuayo-Mishana), more than an hour away from the Market, and away from the Itaya, greatly affecting the population's livelihoods.

CHALLENGES

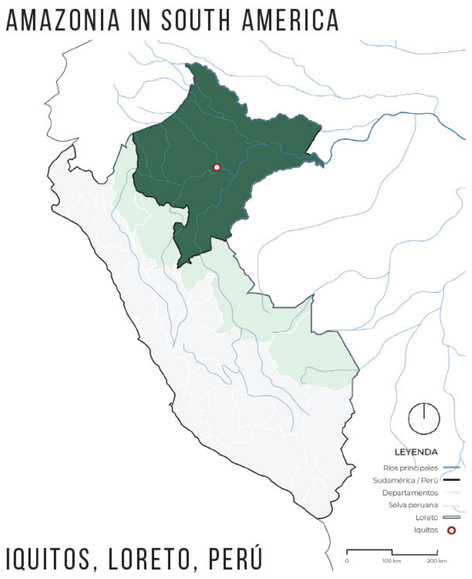
- Lack of access to **water and sewage** systems in settlements in the Amazon (both formal and informal and in flood-prone and dry areas).
- Absence of integration of **socio-economic development programmes** and pre-existing economic activities in resettlement projects.
- **Already-existing productive activities** with harmful environmental and healh impacts.
- **Urban and architectural state-led proposals** that fail to adapt to the Amazonian social and enviromental context (Fig. 2, 4)
- High levels of **gender** violence, lack of participation of women in economic activities, and urban conditions that promote both.

PROPOSAL

We sought to co-design a **network of sustainable livelihoods** that could be **integrated in the urban design** of the new settlement. Following this, all actors involved collaboratively chose **"catalytic prototypes"** from the system that could be further elaborated and implemented in a communal space.

The design challenge consisted in formulating ways in which these prototypes could promote the consolidation of **communal activities and spaces to foster platforms of dialogue and inclusion**. The chosen site was the "*maloca*" (traditional communal typology in the Amazonia) that was already built at NCB and where a communal kitchen already functioned (Fig. 6). Building the prototypes allowed the collection of evidence of their efficiency to promote policy change at the subnational and national levels. The catalytic prototypes had to address the identified challenges in the short term while promoting a longer term vision through the consolidation of the proposed network of sustainable livelihoods.

AMAZONIA IN SOUTH AMERICA



IQUITOS, LORETO, PERÚ

DESIGN CONSIDERATIONS

- **Low-cost**
- **Rapid implementation**
- Promote use of **renewable energies**
- Made using **locally available materials and technologies**
- **Improve already-existing activities**
- Include manuals for installation and implementation to be locally distributed to promote **replicability by community and local government.**

RESULTS

The chosen prototypes were: a **rainwater storage system,** an **efficient stove & grill,** and a **solar grill**, that were **integrated with each other and with *la maloca* in a communal eco-kitchen** to be used by already-existing community organisations and by residents of NCB.

The community actively participated during the implementation process as the project sought to create **alternative employment opportunities** not only by **using the selected prototypes** but also by providing **construction knowledge** so that they could **replicate the prototypes in other communities** with similar characteristics.

The community welcomed the new additions to their *maloca*. This is evident in how they created a **medicinal garden irrigated by excess water** from the rainwater system (Fig. 7) and how they **continue to make improvements** to **protect and take care** of their communal eco-kitchen (Fig. 8).


1


2


3


4


5


6

7


8