



Building Resourcefulness

Case Studies of Building with Communities in Peru and Sierra Leone

Mikaela Patrick (STEMA, Helen Hamlyn Centre for Design)

mikaela.patrick@network.rca.ac.uk / twitter @mikaelapattick

Nicole Minckas (STEMA, UCL Institute for Global Health)

nicole.minckas.16@ucl.ac.uk

Global Health Challenges: Universal Health Coverage



Goal

Goal 3 – Ensure healthy lives and promote wellbeing for all at all ages.

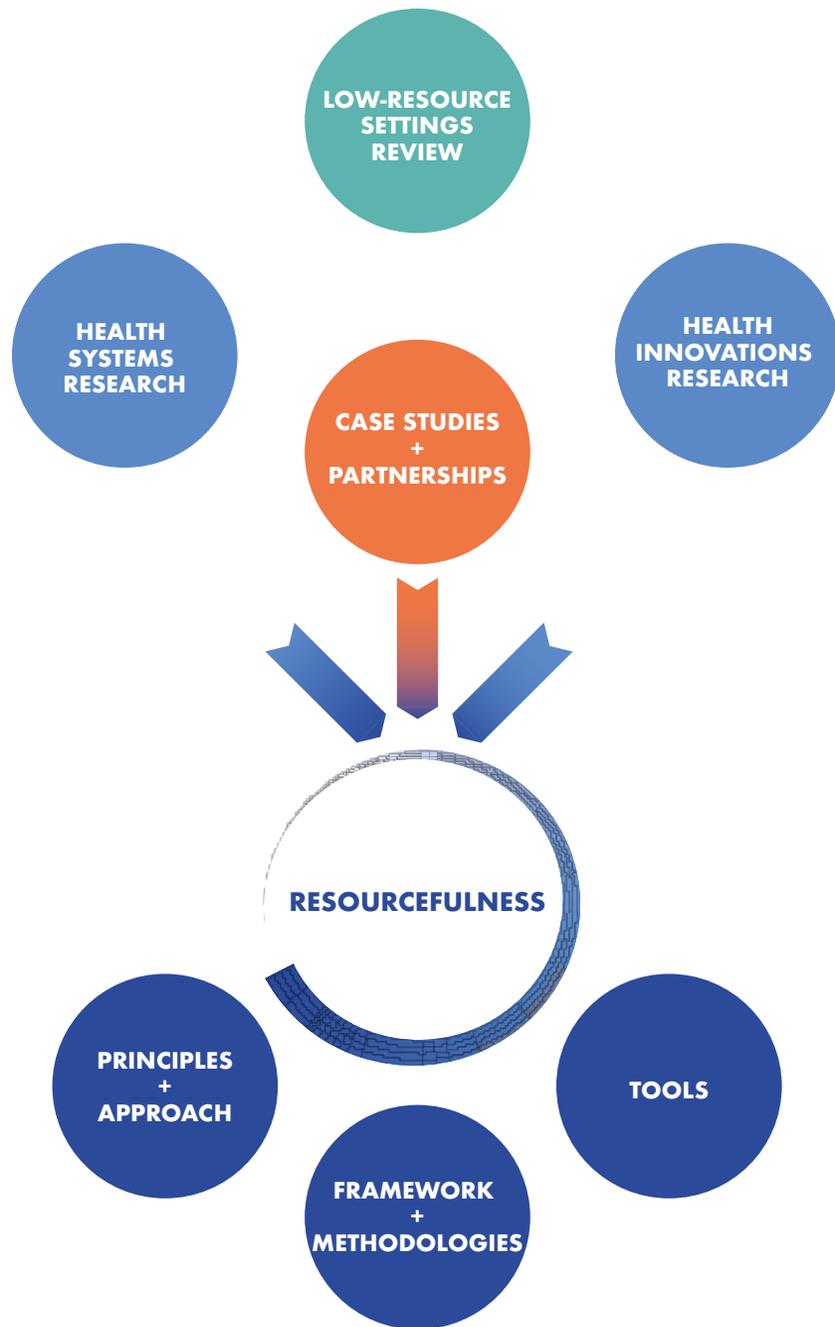
Target

Target 3.8 – Achieve universal health coverage, including financial risk protection, access to quality essential healthcare services and access to safe, effective, quality and affordable essential medicines and vaccines for all.

Indicators

3.8.1 – Coverage of essential health services (defined as the average coverage of essential services based on 16 tracer interventions across four WHO-defined categories: reproductive, maternal, newborn and child health; infectious diseases; non-communicable diseases; service capacity and access).

3.8.2 – Proportion of population with large household expenditures on health as a share of total household expenditure or income.



The STEMA proposal

Through researching health systems and innovations, STEMA aims to understand the barriers to accessing health in low-resource settings.

The findings of this research are being questioned through case study projects giving us experience and taking action *in place*.

Through these findings, we aim to develop a decision making tool for developing health interventions in low-resource settings

Current Health Systems Frameworks

WHO HEALTH SYSTEMS BUILDING BLOCKS

THE WHO HEALTH SYSTEM FRAMEWORK

SYSTEM BUILDING BLOCKS

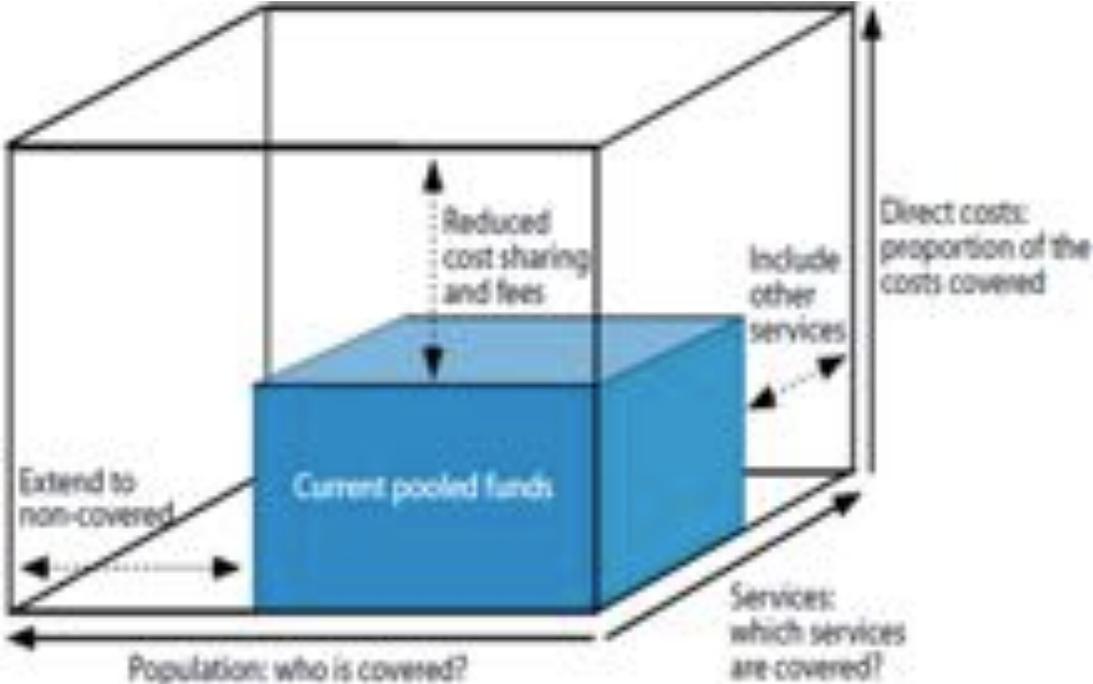


ACCESS
COVERAGE
QUALITY
SAFETY

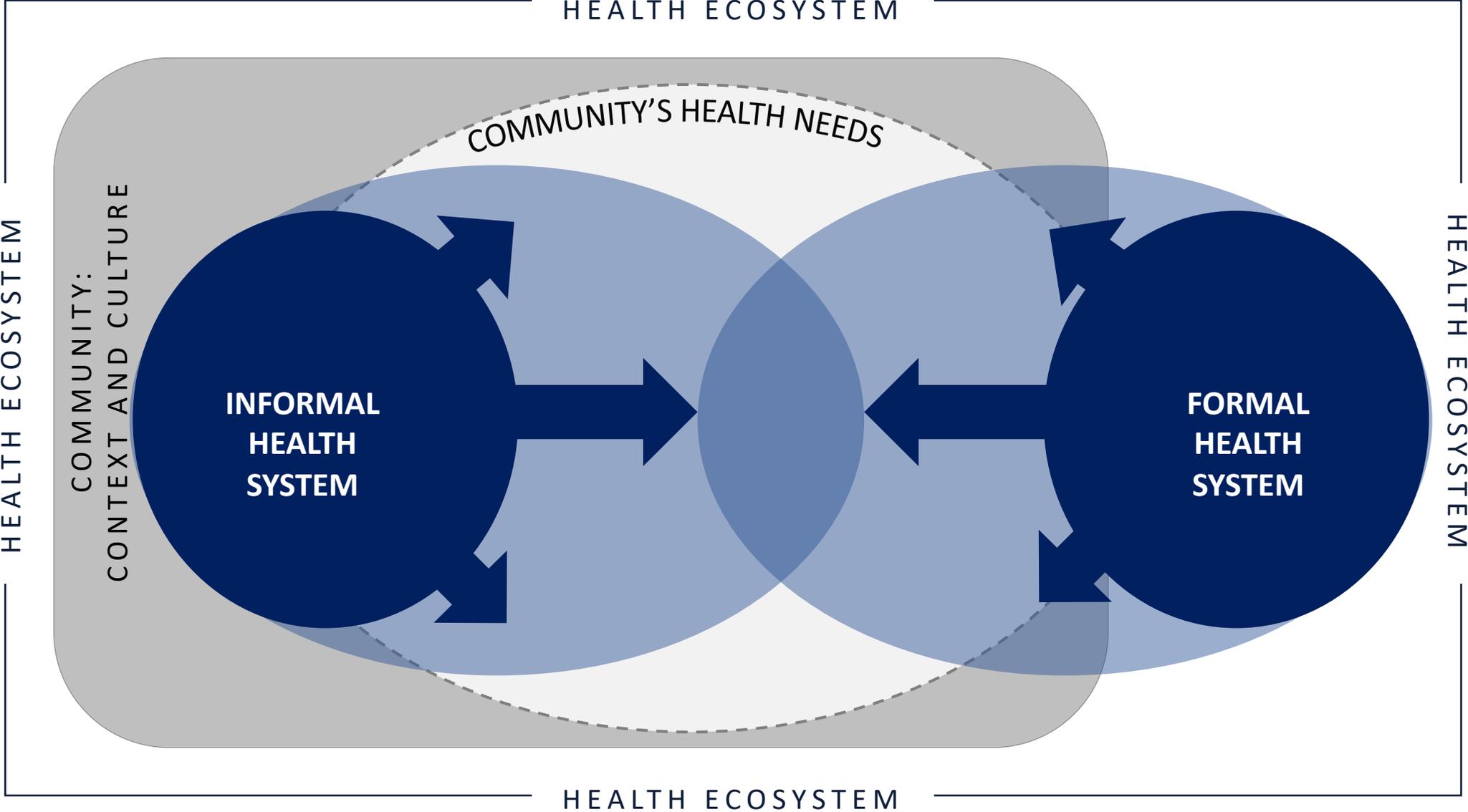
OVERALL GOALS / OUTCOMES



UHC THREE DIMENSIONS CUBE



Systems beyond Health Systems



Health Innovation Landscape



Image source: 'Health Innovation' at <https://aibusiness.com/health-innovation/>

- Overly focused on technology, which particularly in low-resource settings can be unsuitable
- Innovation considered a 'solution' in itself, a justification, but does not have a clear, useful definition
- Focus on biomedical viewpoint
- Need to step back to thinking how proposed solutions are achievable, accessible, appropriate and acceptable
- Human-centred design offers some pathways to inclusivity but focuses on the individual more than the community, or ecosystem of challenges
- Understanding process of realization on the ground is crucial so a case study approach to testing our insights seemed appropriate

Case Study Aims

To develop two built environment health interventions in Sierra Leone and Peru through a community-led approach, understanding how they would form part of an ecosystem of health and development.

Yiben, Sierra Leone

- Northern, rural Sierra Leone, nearest town Fadugu, a 4 hour hike, no complete direct access to village with car (at least 3km hike)
- Subsistence agricultural society
- Cycle of poverty and health burdens
- Women's health issues mainly around reproduction
- Men's health issues labour related such as hernias and injuries
- For children, malnutrition, stunting and lack of vaccinations a challenge
- State health system not reaching Yiben and its catchment area of around 10,000 people

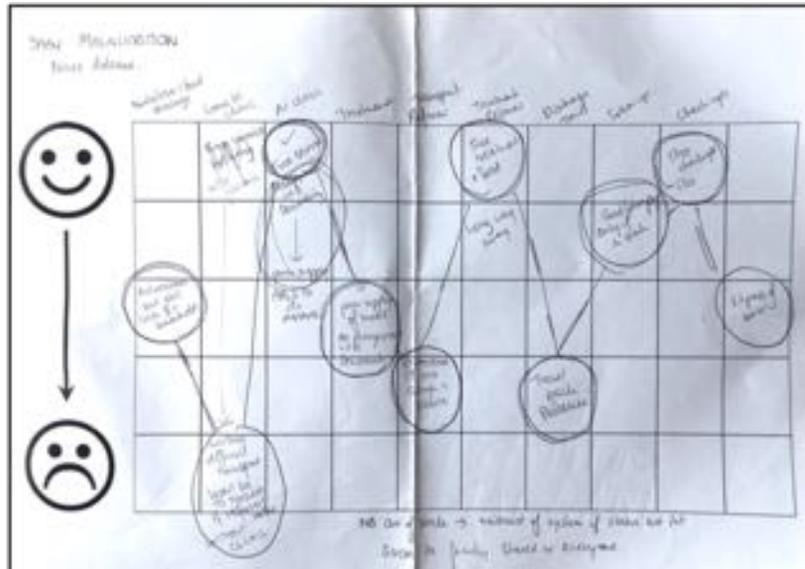




Community Engagement

- Initial clinic built prior to STEMA involvement and research, need for access to health clearly identified but further research and engagement was suggested to understand the health ecosystem and its barriers
- Multi-level engagement with health system to understand issues at different scales
- Focus group discussions with key stakeholders, visits to surrounding health posts, journey and body mapping exercises were all employed to draw out community insights on health needs
- Unreliable state information meant the clinic in its current state does not meet regulations so cannot be granted approval

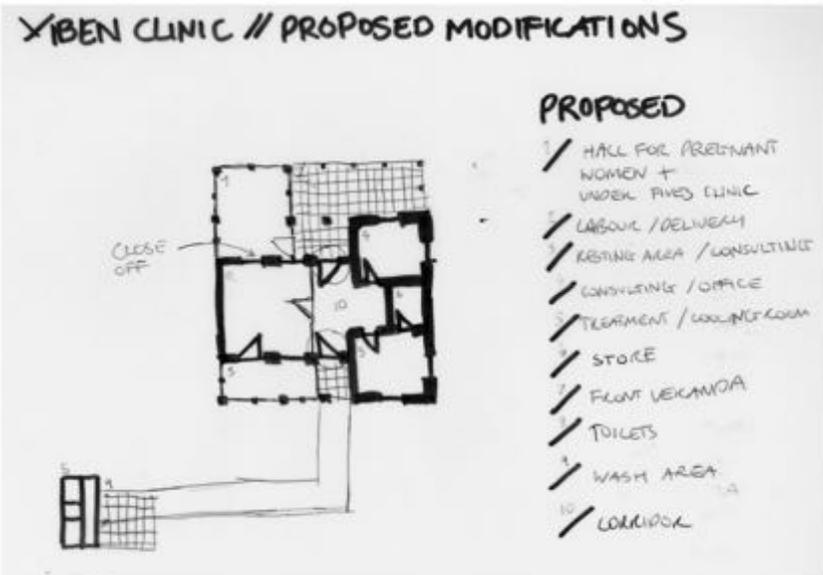
Needs Assessment / Design Brief



- Need to modify clinic space to offer more privacy for labour spaces
- Need to accommodate nurses, develop strong relationship between community and nurses
- Sanitation facilities need improving and some solar power is recommended
- Community engagement with community health workers is important, the buy-in from the community is essential to long term success, the community trusts the traditional healers, so understanding and acknowledging the informal health system is crucial
- A lack of knowledge of collective health burdens points to an urgent need to develop a registration and record system for providing care in the community

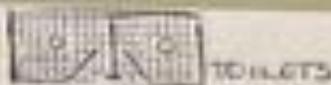


Process



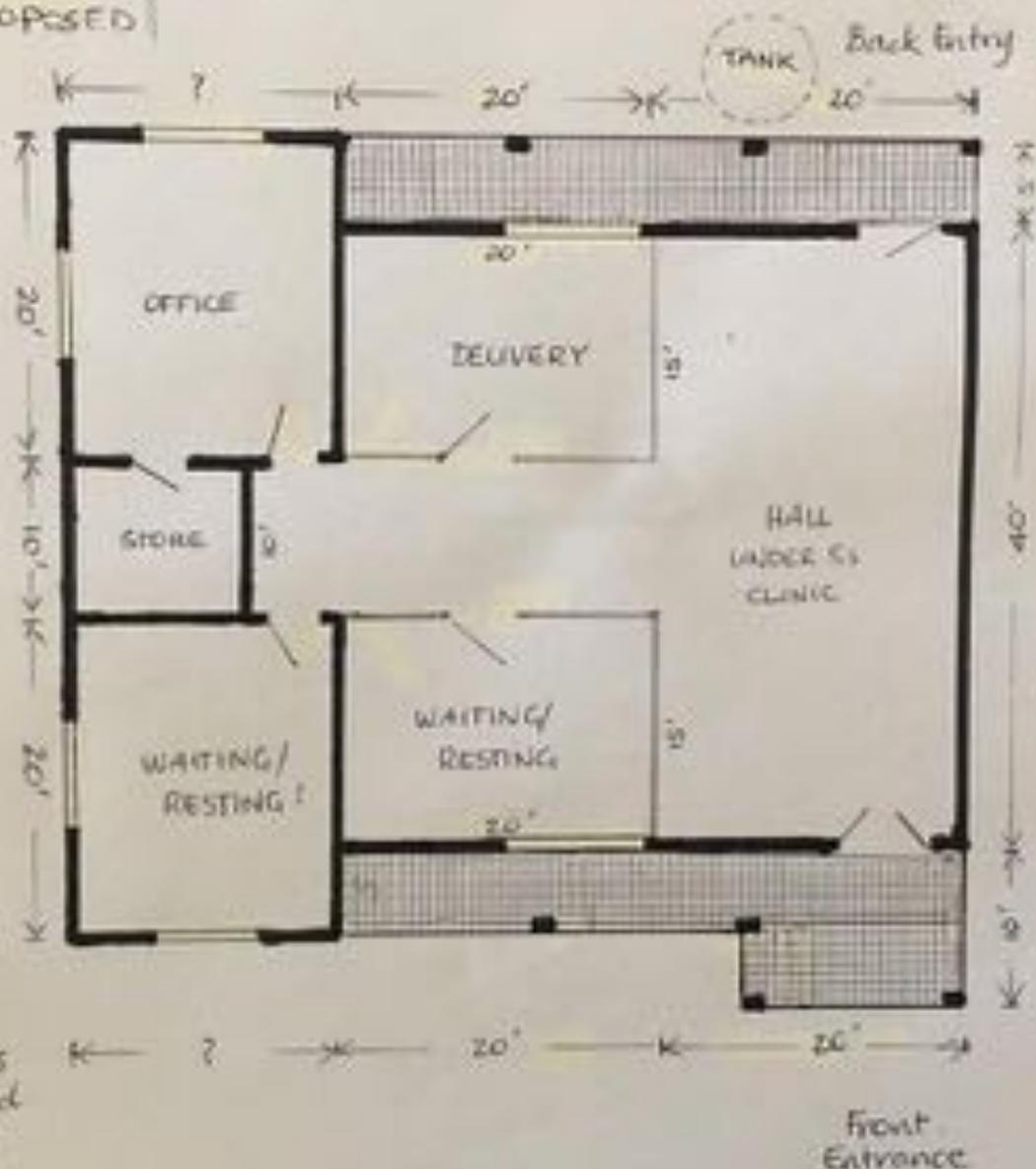
YIBEN CLINIC

MODIFICATION AS PROPOSED
AND MEASURED BY
BUILDERS



- Birth rooms at 15'x20'
- Existing external doors remain.
- New internal walls to be hardwood frame & ply sheeting.
- Wash area to be included in Delivery Room
- Front entry area and verandah will be used for waiting/reception.
- No requirement for enclosing or extending outside areas

• NB. Actual measurements of building greatly exceed the original plan. 😊!!





Challenges & Findings

- Under 5s clinic, antenatal care and births taking place in the clinic
- Clinic received well by community
- Intervention spark for systems level changes
 - The local well which had been delayed is now also under construction
 - Health awareness spreading to surrounding communities, investigation of one malnourished community taking place
 - Nurses quarters being built to provide accommodation
- Future environmental challenges anticipated with the proposed construction of a dam nearby
- Maintenance and registration/health awareness needs to be monitored and evaluated

Lower Napo River, Peru

- Peruvian Amazon, nearest city Iquitos
- Remote communities with near to 0 access to healthcare due to geographical remoteness, financial instability and cultural barriers
- Nearest health post around 4 hours by boat
- Lack of knowledge and reporting on community health needs
- Seasonal flooding requires consideration in building





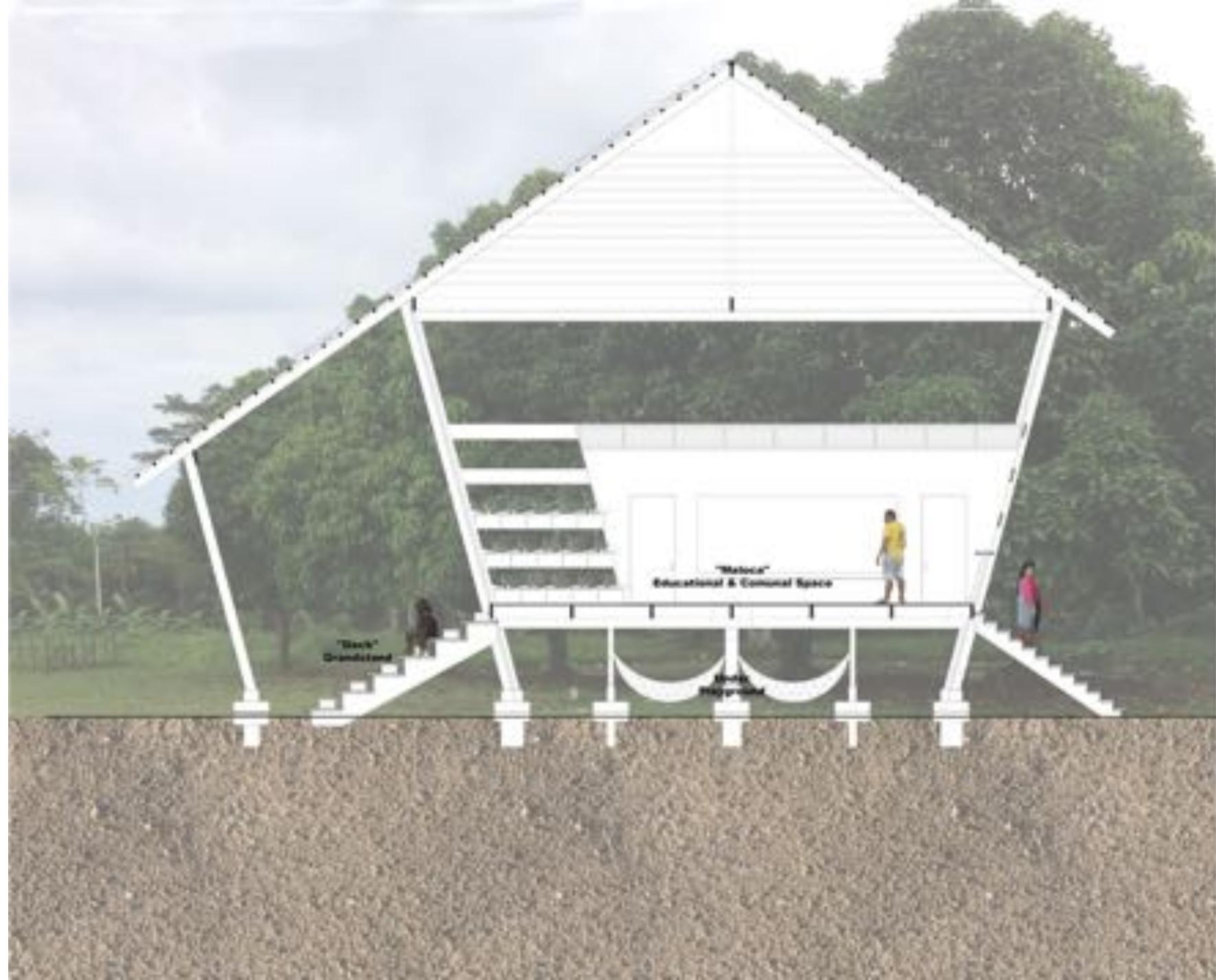
Community Engagement

- Project developed out of long term engagement with local NGO (DB Peru) and communities through a previous research project on Gender-Based Violence
- Time spent in community built trust and a deep understanding of the community through being in place
- Collaboration with the Altro Foundation gave opportunity to address wider healthcare access needs
- Setting up a strong partnership network was essential to developing the project



Needs Assessment / Design Brief

- Need for access to essential medicines
- Need for secure storage + protection from insects
- Need for healthcare delivery within the community
- Develop a network of community medicine delivery spaces (botiquins) across 5 sites
- Facilitate community engagement through design & construction
- Enable a network of care through installing radio devices in each botiquin so the community health workers can communicate
- Build a structure that can integrate community activities



ROOF TOP
SP1 +12.70m

ROOF BASE
SP2 +7.70 m

1st LEVEL
SP3 +2.20m

BASE LEVEL
SP1 4.000 m

"Back"
Grandstand

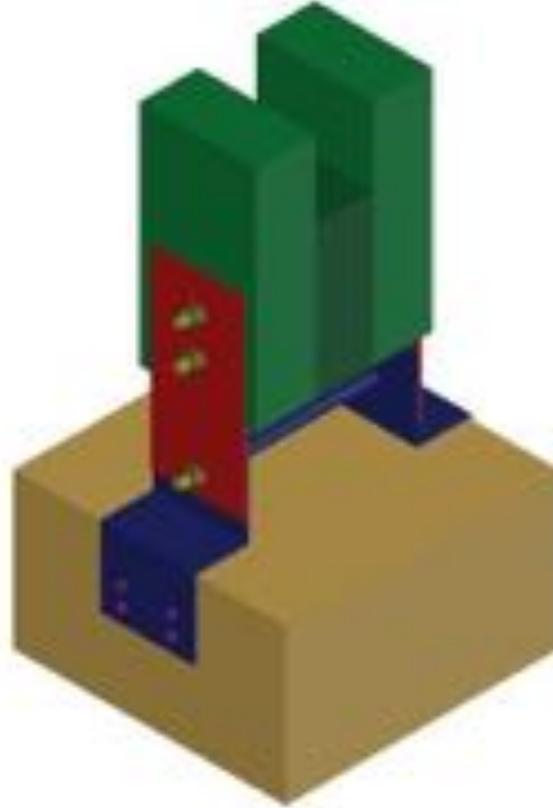
"Meloka"
Educational & Communal Space

Back
Platform

CORTE 1

Process



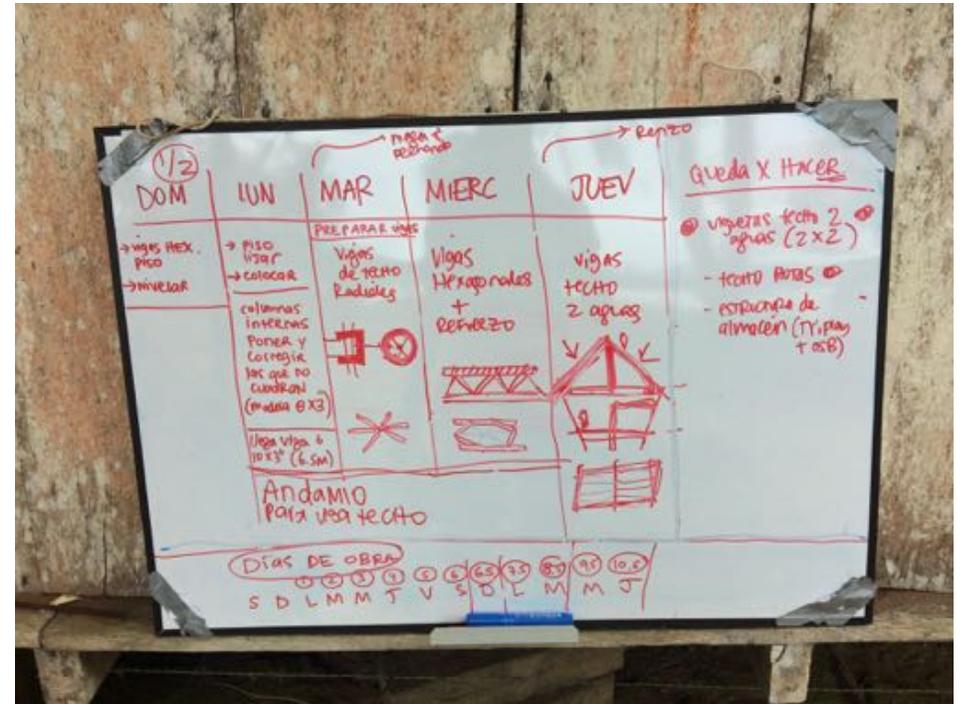


Challenges & Findings

- Design modifications in field
 - Timber difficult to work with
 - Structure twisted so the joints needed to be modified
- Seasonal challenges around rainy season, flooding and wood getting wet
- Making sure community remains engaged in construction and their contributions
- Construction time longer than anticipated
- Health & Safety

Next Steps

In Peru, construction is scheduled to continue in July and September, corresponding with the flooding clearing in each village. A baseline health access survey has taken place to be able to document change once the botiquins are completed.



In Sierra Leone, the completion of the building allowed medicine and equipment to be deployed. Transformation continues to take place with the development of the health services, partnerships are being organised to further training. Care is expanding to the surrounding communities and the team has just won an award for a solar-powered vaccine fridge to provide essential vaccinations to children.



Reflections

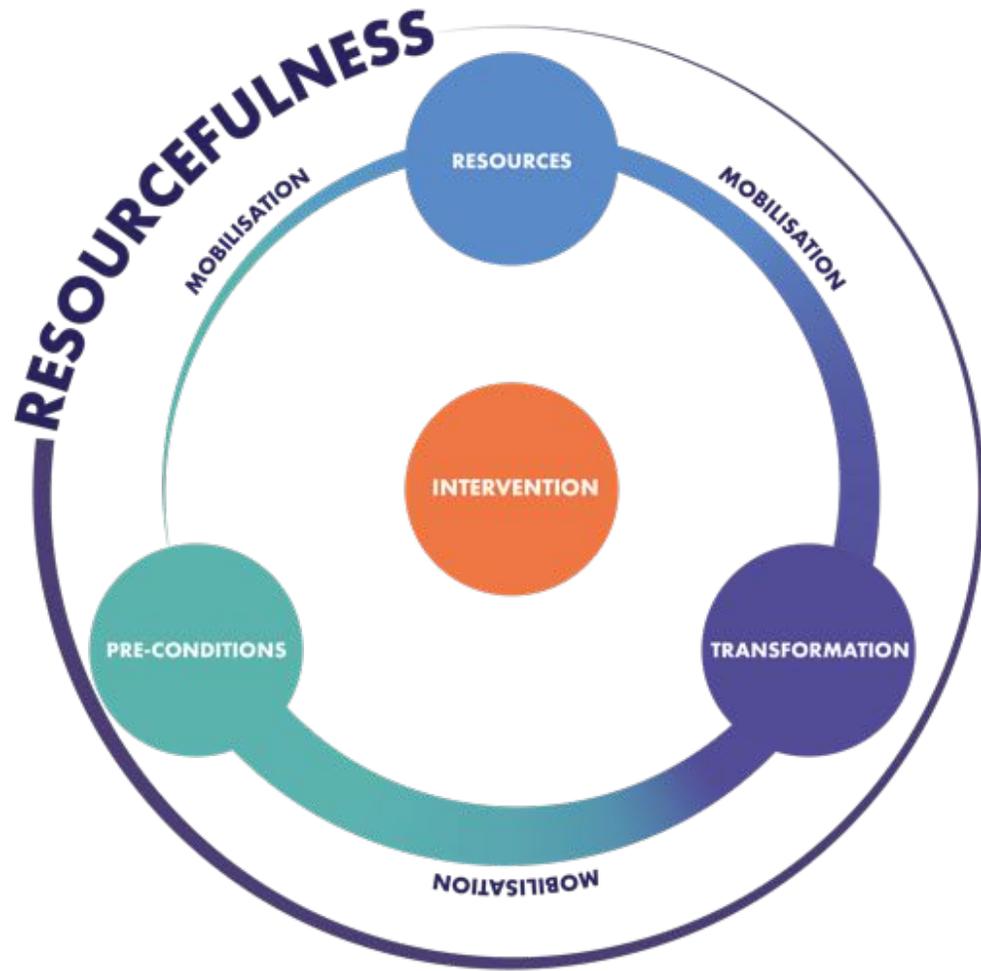
Common threads:

- Both sites are geographically remote
- At project beginning had 0 / extremely limited access to formal health systems
- Both identify access to medicines as crucial, but the intervention that enables this is built environment
- Some intervention of technology or external resources was necessary in both projects

These projects raised questions about the role of built environment interventions in health, which is complex and often draws on resources outside the formal health system and when designed and built in place with the community provides a way to solidify ownership and support for the project.

However, in resource-constrained setting, building can have a range of challenges and it is important to be adaptable and reflect on the process. We identified the importance of being able to evaluate the relationship between research, design, realisation and transformation and having the methods and funding available to do this.

Using design thinking to reflect on these and other interventions has allowed us to explore the complexities of health challenges in low-resource settings, but also the opportunity and creativity these settings can cultivate.



We identified that there can often mismatch between innovations and the communities in which they are deployed.

To overcome this, our research focus on building up from the community, understanding the ecosystem of resources (such as human, material, social, economic, political) that can be mobilised to improve a community's health and wellbeing.

We define this approach as *resourcefulness* and are developing a set of principles, tools and a framework that allow communities to develop their resourcefulness with regards to their long-term health and development.



Building Resourcefulness

Case Studies of Building with Communities in Peru and Sierra Leone

Mikaela Patrick (STEMA, Helen Hamlyn Centre for Design)

mikaela.patrick@network.rca.ac.uk / twitter @mikaelapattick

Nicole Minckas (STEMA, UCL Institute for Global Health)

nicole.minckas.16@ucl.ac.uk