

Colombia

**SAFE
AGUA**

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About Safe Agua

● ART CENTER COLLEGE OF DESIGN STUDENTS
✂️ CO-CREATE WITH FAMILIES 👤 IN ALTOS
DEL PINO, BOGOTA 🇨🇴 COLOMBIA, A COMMUNITY
LACKING BASIC SERVICES, ⬆️ TO DESIGN 🗣️
INNOVATIVE SOLUTIONS TO OVERCOME 💧 WATER
POVERTY AND MAKE 🏠 A REAL WORLD IMPACT.

Design Innovation w/the Base of the Pyramid:

Driven by field research, trans-disciplinary teams design innovative water solutions and create full-scale working prototypes, to be tested by the community, and implemented with NGO, governmental, and industry partners. SAFE AGUA Colombia builds upon the 2011 SAFE AGUA Peru and 2009 Chile projects.

An Educational Partnership for Social Change:

designmatters

● Art Center College of Design

hosted by: Environmental Design



COMPARTAMOS CON COLOMBIA



ANSPE

TECHO



socialab

Design Challenge

Objective:

How can we work with families living in Colombia's asentamientos to design and develop solutions — products, systems, and services — around water, to help overcome the cycle of poverty?

Design Goals:

- _ Co-create radically affordable products & systems with Base of the Pyramid families
 - _ Sustainable, scaleable, real-world implementation
 - _ Address specific problems, with both quantitative benefits (illness reduction, water conservation, increased time for self-improvement, opportunities to generate income) and qualitative impacts (sense of dignity, aspirations)
 - _ Solutions at the scales of: products for individuals & households; systems, spaces and services for the community & beyond
-

Social Innovation & Entrepreneurship:

- _ “Make sure your approach has positive measurable impacts that can be brought to scale. Make sure it can reach at least a million people and make their lives measurably better” – Paul Polak
- _ “If we stop thinking of the poor as victims...and start recognizing them as resilient and creative entrepreneurs and value-conscious consumers, a whole new world of opportunity can open up. Four billion poor can be the engine of the next round of global trade and prosperity. They can be a source of innovations.” - C. K. Prahalad

Field Research

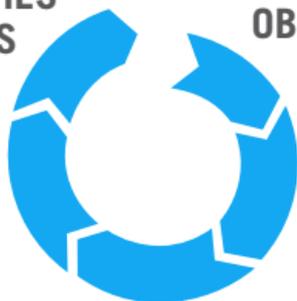
Research Process Spiral:

**OPPORTUNITIES
& SYNTHESIS**

OBJECTIVES

RESEARCH

**HYPOTHESIS/
ASSUMPTIONS**



METHODS

adapted from Frog Design

Topics of Research Focus

Individual & Community:

Day In The Life
Aspirations / Limitations
Resilience & Networks
Maps & Resources

Specific Water Focus:

Obtain / Contain
Carry / Move
Use / Reuse Water

Goals of Field Research:

- _ Seek the most powerful opportunities
- _ Identify important, relevant problems to address, that apply both locally and to 1000s of villages worldwide
- _ Empathy and deep connections with families we meet
- _ Gain understanding of people's dreams, needs, and constraints through: Participation and direct experience; qualitative and quantitative questions & analysis; listening to people's stories

Day in the Life



Catalog a day in the life of individuals and families, with special attention to water's role.

How can we best impact this area?

Day in the Life

Suggested Methodologies:

Timeline: Using paper and crayons ask a family member to draw a timeline of their day. (You can start by drawing the line and a sun & moon at beginning / end. Consider space before the sun for those that get up before sunrise). Together, draw activities on the timeline even if they sound mundane. Next, draw with a different color another line below it. Now have them narrate to you their kids' & spouse's day to day to see how they relate to each other.



Quantitative Questions:

Aim for measurable answers. Ask questions like: How much time do you spend working? on specific household chores? How much time do you spend with your family? How often do your kids get sick?

Qualitative Questions:

Based on the timeline, your own observations, and photos/videos, construct a rich storyboard of the family members' typical day. When you follow up, ask questions about favorite / least favorite daily activities & why.

Consider:

People can change behavior when they are being observed. Be aware of moments when their words and actions are incongruent. Become genuinely interested in people's life and demonstrate sincere appreciation.

Aspirations / Limitations



What are people's goals and aspirations, and what keeps people from achieving them?

How can we best impact this area?

Aspirations / Limitations

Suggested Methodologies:

Photo Sharing: Ask family members to share their photos, as a tool to talk about their past, and transition to aspirations for the future. Bring pictures of your family to share in exchange.

Aspiration Cards: Print a set of images ahead of time & gather aspirational images in Colombia (build on IDEO cards & include blanks to draw on). Ask participants to choose 3 cards that represent what you hope for your future. Ask, what did you choose and why? If appropriate, ask people to choose the three pictures that represent what they fear in the future, and why?

Qualitative Questions:

Ask people what steps are people taking to achieve their dreams and goals. Find out what people believe they are able to accomplish, at the individual and community level.

Also explore larger structures (policy, class, etc) that might prevent people from achieving their goals. What could change that might allow them to achieve their desired future?

Qualitative Questions:

If you had to run out of your house in a fire, what would you take?

Tips:

Gather direct, unfiltered quotes.

Ask “why” 5 times, to get to the real why.

Resilience & Networks



How do families & communities endure and thrive in resource-constrained conditions?
Document water-related social networks.

What are opportunities to boost resilience?

Resilience & Networks

Suggested Methodologies:

Document water-related social networks: Ask who a family relies on & who relies on them in different scenarios (get water, run out of water, borrow money, etc.) Diagram the networks.

Resourcefulness, Innovation & Entrepreneurship: ask people to show you things that they've made and why they make them (recreation, income, problem-solving, etc). How can people's skillsets generate income and entrepreneurial opportunities?

Community Collaboration Stories: Gather stories from multiple perspectives about how the community has collaborated on a project to achieve a shared goal. Storyboard the process from different viewpoints. Ask what worked well and lessons learned?

What is Resilience?

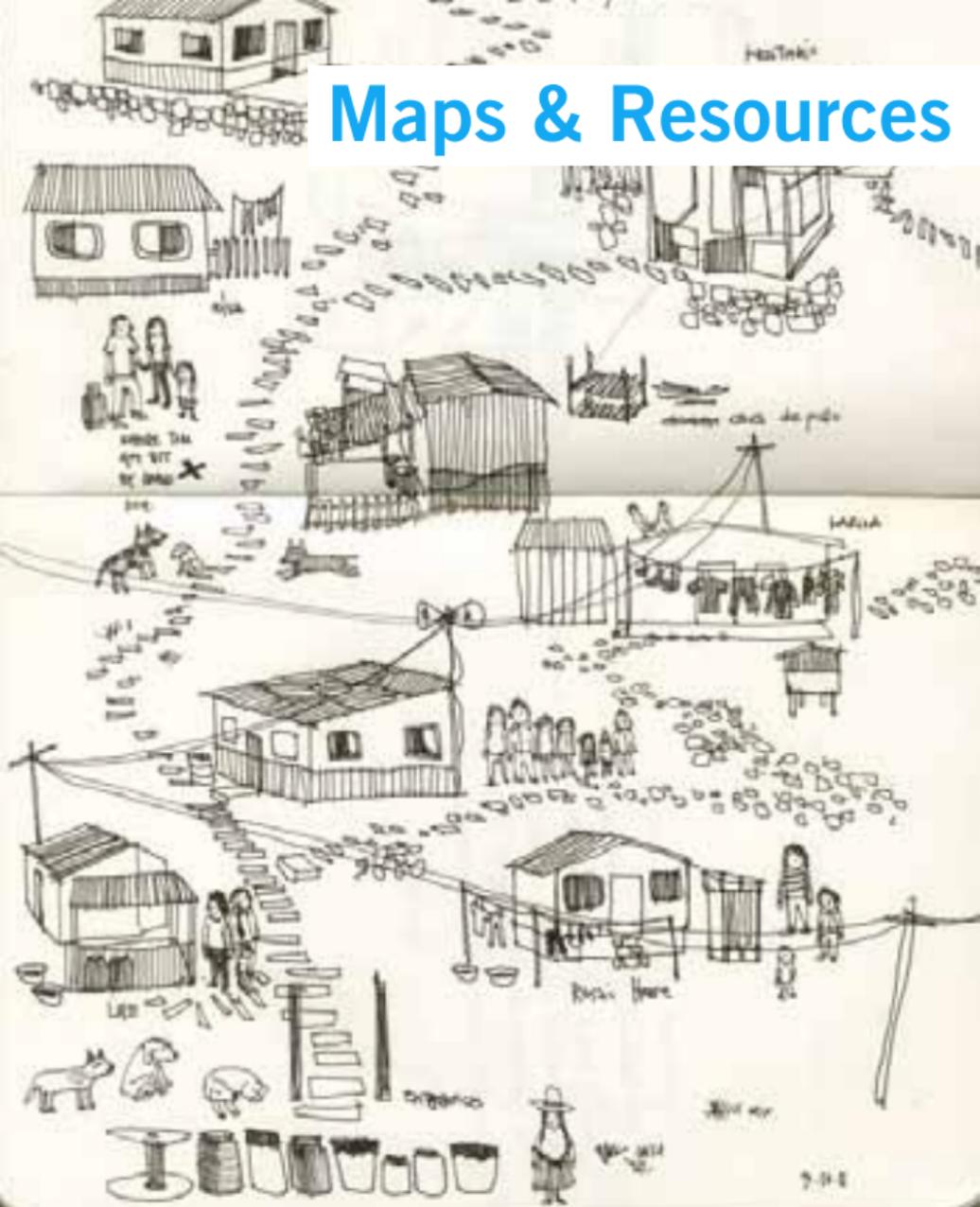
Resilience: a system's ability to mitigate and withstand disturbances and to bounce back, while continuing to function... At both the individual and community levels, social capital provides resilience... For an individual, social capital is about relationships with family, friends, and colleagues. [State of the World 2013]

Community Resilience: is a measure of the sustained ability of a community to utilize available resources to respond to, withstand, and recover from adverse situations. [RAND]

Tips:

Consider reputation & gossip. Notice how people talk about each other. What society thinks can vastly differ from what people want. If not socially acceptable a product/service is unlikely to work.

Maps & Resources



Document spatial organization of the home and neighborhood, as well as resource flows.

What are key resources and opportunities?

Maps & Resources

Suggested Methodologies:



Resource Flow: Draw (or ask a child to draw) the household on a page. Ask the participant to list everything that brings money INTO the household on the L; then everything that takes money OUT on the R (education, food, medical costs, etc). Ask her to circle the largest income & cost; or to rank all items w/peso amounts.

Map house & neighborhood: Create rich plans and maps that show materials, facades & dimensions, as well as family names and paths people take for water-related actions.

Ideal Home Layout: Draw an overhead plan of the home, with all existing furniture, outhouse, water storage, etc. Then cut the drawing into pieces and ask the head of household to rearrange the pieces to create her home ideal configuration. Ask why...

Collect Materials & Colors: collect artifacts, objects, and materials that reflect the community and Colombian culture. How can local materials and making processes become resources?

Quantitative Questions:

Ask: "how do you get there and how long does it take you".
How much money families earn vs. how much money they need?
How much do you spend on specific goods & services (soap, Dr...)?

Tips:

Measure your stride & pace out distances. Take flat-on façade/material photos with scale reference & stitch together panoramas.

Obtain / Contain



How do people obtain, store and protect water and other objects, food & valuables?

How can we best impact this area?

Obtain / Contain

Suggested Methodologies:

Guided Tour: Ask people if you can accompany them on a guided tour of how they store & contain water, objects, food & valuables.

Trace Water from Origin to End Use: Trace water from initial source > community access > household storage > systems for moving water in home > point of use. Identify at which points along the way: contaminants are introduced; money exchanges hands; municipalities, companies & broader policies are involved.

Quantitative Questions:

Aim for measurable answers. Ask questions like: “how much do you pay for water & how often do you get it” “how far do travel to get water,” “how many trips do you make to and from water source,” “how many people do you interact with when obtaining your water,” “Have you collected rain water - how and for what uses?”

Qualitative Questions:

How secure do people feel about the certainty of their water supply? What would make them more secure? Ask people how they feel about their social interactions to obtain water. Are there certain interactions they would rather avoid if they could and why?

Keep in Mind:

Consider differences between storing valuable vs. everyday objects. Also, families may not know if the water is potable or contaminated.

Move & Carry



How do people carry water and other objects?
What types of transportation do people use?
How can we best impact this area?

Move & Carry

Suggested Methodologies:

Flow Analysis: Document how people carry water (and any automated flows of water), and the paths the people & water take through all phases of use. Consider flows not only on a plan, but also up and down in section.

Create an action map of a water routine: select an important water routine (i.e. collecting water, cooking) and document the specific actions, capturing a great amount of detail. Take video & draw a map of each step of these actions.

Quantitative Questions:

Count and document how many tools, pots & containers people use in order to perform each water-related chore. Measure all physical touch points of water in the community in terms of: quantity utilized, size and capacity of the containers, time spent, productivity levels when carrying and moving water, amount of water spilled due to mishandling, etc.

Qualitative Questions:

What emotional, physical & health impacts does carrying water have on individuals? What do people carry around daily?

Keep in Mind:

How can minimizing carrying and moving water impact people's health and afford free time for self-improvement activities? Seek potential connections with community & recreational activities.

Use/Reuse Water



How do people use water for daily activities?
How is water re-used or discarded?

How can we best impact this area?

Use / Reuse Water

Suggested Methodologies:

Participate in water-related activities: With a family member, participate in daily chores (laundry, dishes, cooking, cleaning home, etc). Ask “teach me how you do laundry, etc?”

Design Probe / Camera Journal: Create a kit including inexpensive camera, prompt cards, etc for a participant to record aspects of their lives autonomously, independent of the designer. Ask each family member to take pix of specific activities then to narrate them. Useful for sensitive topics that warrant modesty.

Quantitative Questions:

Aim for measurable answers. Ask questions like: “how much water do you use in a day”, “how often do you wash clothes & how long does it take”, “where and how do you hang clothes to dry,” “how do you purify or boil water and for how long,” etc...

Qualitative Questions:

Ask where are potentialities and opportunities in this routine. What are alternative paths of action? Are there points in which a design solution might help support their action? Are there activities that people find undignified, embarrassing, or want to avoid being seen?

Keep in Mind:

Both participate in daily chores, and also observe people going about their day without interfering. For touchy topics (i.e. shower, latrine) ask people to reenact the activity or pantomime the steps.