# A Story of Placement

A habitat solution for communities in a situation of displacement

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# Abstract

A Story of placement looks at displacement in Colombia during three different time periods**:** 529 years ago during colonization, today, and a speculative scenario in 10 years.

The project springs from traditional ecological knowledge developed by indigenous Colombian communities, and applies it to create a habitat proposal for a displaced community in Medellin.

How can we generate stories of placement in the near future?

The Kogi, Arhuaco, Kankuamo, and Wiwa descendants from the Taironas, have been living in the mountains of the Sierra Nevada de Santa Marta after being displaced from the lowlands during the colonization. They have remained isolated from the western cultures preserving their knowing and being and living harmoniously with their territory.

Colombia has today around 5.6 million people in a situation of displacement because of the armed conflict, natural disasters, or big land acquisitions by corporations.

The project develops a progressive, sustainable, portable, and productive housing solution for communities in  a situation of displacement, inspired by indigenous communities from the Sierra Nevada de Santa Marta in the North of Colombia.

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# 1. Introduction

In previous projects I looked at Traditional Ecological Knowledge TEK developed by indigenous communities. Colombia is the second most ethnically diverse country in the Americas with nearly 87 ethnic groups and 65 different languages[1]. This was the starting point for looking at indigenous communities in the country.

Due to internal displacement, many Colombians are living in very hard conditions away from their original territories and cultural traditions. Thus resulting in the loss of traditional practices and knowledge developed in generations.

My project aims to value this traditional knowledge by placing it as an answer to today's internal displacement situation, and develop a habitat solution for displaced communities.

[1] https://www.colombia.co/en/colombia-country/colombia-facts/colombias-indigenous-groups/

# 2. Background

## 2.1 Displacement in Colombia

Nearly 34 % of the Colombian population is living in poor conditions and the country has been experiencing violent internal conflicts for more than 50 years. Nearly 8 million people have been displaced from 1985 to 2019, and around 5.6 million are still in a situation of displacement today. In the first half of 2020, there were 19,000 new displacements associated with conflict and violence and 11,000 as a result of natural disasters[2]. People from rural areas are being forced to leave their houses and lands and wander into the cities finding themselves in very hard conditions.

Communities in a situation of displacement end up living in the city's suburban areas with improvised shelters and no access to basic services such as water and energy. In many cases they are evicted by the police as they are living in private lands and have to start over again elsewhere. The protection provided by the Colombian government is limited.
As these communities come from the rural parts of the country (fig 1) their working skills are usually related to agriculture. In the cities they don't have the possibility to work the land so they end up doing informal jobs in the city.

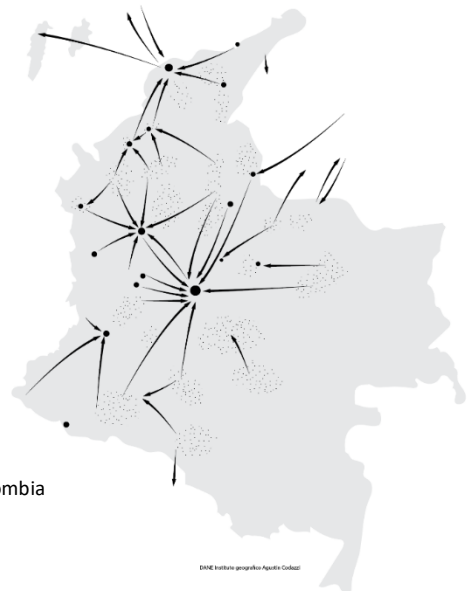

Figure 1 Displacement in Colombia

[2] https://www.internal-displacement.org/countries/colombia

The design context for my research is an informal[3] settlement in Medellin's Metropolitan area called Vereda Granizal (fig 2,3), which is the second biggest informal settlement [4] in Latin America and is home for nearly 30,000 people and 5,000 houses. The Vereda Granizal is located in the Bello municipality and is divided into 8 different sectors: San Jose del Pinar, Regalo de Dios, Oasis de paz, Manatiales de Paz, Sector el Siete, Portal de Oriente, Altos de Oriente I, Altos de Oriente II.
I will try to tell the story of Granizal and the story of displacement in Colombia trough the stories of Jhon Jairo (fig 4) and Diana (fig 5) who live in Granizal today.
Jhon Jairo runs the hardware store so he is in contact with a lot of people and is a recognized leader in the community. He has helped me put together a group of people from different areas with whom I have had Zoom meetings.
Diana is also a recognized leader in Granizal and has been living there for 24 years.


Figure 2 Map / Location Vereda Granizal

[4] Informal settlements are private or public land occupations in the peripheries of the cities.

Figure 3 Vereda Granizal  / Photo Felipe Mesa @felipemesafoto

**This is the story of Jhon Jairo Yepez**
(Zoom Interview 03/02/2021)

Figure 4 Jhon Jairo Yepez
zoom interview
03/02/2021

I'm not displaced but I live in Granizal because my family bought a little farm below el Pinar (Pine forest) where I used to come every 15 days to have some rest. One night in 1995, we began to hear chainsaws, the next day almost all of the pine trees were cut down and we started to see a lot of people with black plastics and wood beams from the pines, and that is where Vereda Granizal started.

To protect our farm, we built a little building with a lot of effort and in the first floor we put up the hardware store and a grocery shop. A family member who ran the grocery shop was giving food to the people living in Granizal hoping he would get paid one day.

The situation was difficult, the children were sick, the people were hungry, and they had no water nor energy.
There was a big water pipe coming down to Medellin next to Granizal, so to find water they made a hole in it and managed to bring some water into the community. This water was taken before the water treatment plant. It came from a dam that was not very clean. People started to get very sick and some kids died. The Universidad de Antioquia did tests on the water and they found it had 75 % of human feces. Because this was the only water they had, they kept on using it for drinking and washing.

In 2015, we won a popular action against the state and since 2020 we have water tanks coming up here twice a day with clean water.

In the beginning, the Police evicted the settlements several times because they were using private lands and because they were in zones of great risk of landslides. But after some years they were left alone and the settlements began to grow. The land here used to be yellow, so when we went down to Medellin or Bello our shoes turned yellow so they called us los Patiamarillos (The yellow feet). We are waiting to be included in the Bello POT (Territorial Ordinance Plan) as Bello's 12th commune and not be treated anymore as the Patiamarillos.

I once went away from Colombia to Costa Rica to work for some time, but I was missing a lot my people so I decided to come back and work with the community. Since then, I have held different positions as a local leader.

**This is the story of Diana Alvarez**
(Zoom Interview 03/02/2021)

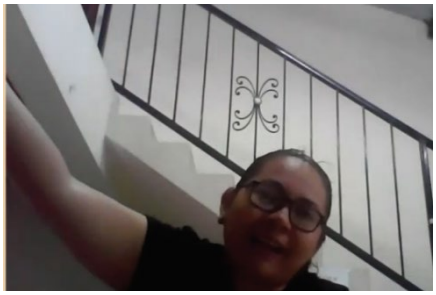

Figure 5 Diana Alvarez
zoom interview
03/02/2021

I'm 35 years old, I arrived to Granizal when I was 10 and I have been living here for 24 years.

My first forced displacement was when I was 4. I used to live in Frontino Antioquia with my mother, father, three sisters and my brother. There were Guerrilla groups operating in the area and one guerilla commander fell in love with my oldest sister, she was 12 at the time. He told my mother that he wanted my sister to move in with him. My father agreed with the idea but my mother didn't, so the next day my mother sent my two older sisters to Medellin to an uncle's house. Then she sold two pigs, and that night we ran away with her to Medellin. It was my other sister, my brother, me and my mother with a box with chickens and two more carton boxes with our stuff.

We were sitting outside of the bus station for quite a long time and my mother had no clue on what to do. She just told me to play with the chicken's, so I put them in and out of the box. My mother was crying and looked desperate so a woman on the other side of the road approached us and invited us to stay at her place for a couple of days while we were able to find my uncle where we would stay for almost a year.

From there we went to live in El Picacho a neighborhood on the west slopes of Medellin. My mother bought a little piece of land for 50,000 Pesos (12 euros) that my uncle had given her. This was in the 90's when the war between the state and the drug cartels was happening, so the situation was pretty violent around the house. My mother worked as a maid so she lived with the family and only went home to us on the weekends, so during the weekdays my siblings and I had to take care of each other.
One day, when I was 6 years old, I came back from school around 5 PM and there was a guy called el Mello, who I knew from the neighborhood, firing his gun down the slope. He called me Chiquita and grabbed me by my arm, it was like being in a movie. Then a woman came out of a house and took me into her house. After that they told my mother what had happened, so she decided to move again.

It was a Sunday 1996 on Reyes Magos day. We arrived at Granizal to a hill that had been occupied the year before. The black water ran on the ground and the houses were made from plastic and cardboard. My mother bought a piece of land for 250,000 cop (59 euro). She made a simple structure with

four beams and some clear plastic where we had sunlight during the day and could see the stars and the moon at night. We cooked with firewood and went to the bathroom in a latrine that my brother had built with a hole and a bucket.
We came to the higher part of the neighborhood because the lands were much cheaper, but there was a landslide in 1999, so 40 families including us were moved to the lower part in Valles de Paz.

In 2000 we were evicted again because the land had a private owner so we were given one of the last spots in el Pinar. We moved what we could and built another house but this time with black plastic, wooden beams and metal roof tiles.

I now have a 15-year-old daughter with whom I live, my mother died three years ago and all of my siblings also live in Granizal. And this is my house today (fig 6).

Figure 6 Photo Diana Alvarez / Diana's house

Talking to the community in Granizal was a vital part of the project, as it validated a lot of the research done on the internal displacement situation in Colombia but it also gave the project a real context.

Some of the most important findings during these conversations were that even though these communities are living in hard conditions, some are very happy where they are and don't want go back to their homeland, nor do they want to move to a concrete project in the city. For them this is their home, where they have built a community, that they want to improve in order to have better living conditions.

They feel proud about their community because they have built it by themselves. So in this sense any intent to help them improve their life quality has to have them included as a vital and active part of the solution. It cannot be something imposed with little possibilities to be adapted.

In the next part of the text I will take you through my journey researching about Traditional Ecological Knowledge to see how these learnings can be included in creating a habitat solution for displaced communities.

## 2.2 Traditional Ecological Knowledge (TEK)

In previous projects I have been trying to understand why we as humanity have become so distant with nature.

This journey took me to look at knowledge developed by indigenous communities during generations and see how it could be applied to solve some of the challenges we have today, and how we could find inspiration to face the internal displacement situation in Colombia.

The different biological timescales of insects, plants, animals, earth and humans represent a challenge to our coexistence on the planet. Johan Rockström, " Over the last 250 years we humans have emptied deposits of oil in the earth's crust that had taken 100 million years to accumulate" [5] and have treated earth as an endless resource.

We live on a world of immediacy and want everything fast and easy without thinking where things come from, how much time it took to create them, and what traces or scars they left behind. Most humans live in cities apart from the natural world making it difficult to synchronize with nature's biological timescales.

For my project, I went to a forest near Stockholm in Nacka, Saltsjö-Boo. The surroundings of lake Glasbrukssjön are full of life. I spent around 20 hours on different days walking, sketching, observing, photographing, and filming. Everything around me had different lifespans which could go from weeks to years to billions of years. This made me realize that one of my deepest disconnections to nature is my anthropocentric notion of time, which blurs my understanding of everything around me. I was sitting on a rock that was 4.5 billion years old, looking at a beaver that lives 10 years, a dragonfly that lives 7 weeks, a deer that lives 15 years, a crayfish that lives 20 years, a tree that lives 200 years, and me who will live for around 50 more years.

I thought that one way to change my notion of time, would be to spend more time in this place, come back more often, and really observe how nature changes around me. I needed to use as many senses as possible and really focus on the details because it changes quite slowly for some and quite fast for others.

[5] Johan Rockström and Mattias Klum, Big World Small Planet, 2015

Having a picture frame would enable me to look at things from the same angle and focus on one spot. Drawing the same image, through the frame, several times would enable me to record through images the passing of time in an analogue way. To do this I developed a tool (fig 7) that I call Putting Time in Perspective an analog time-lapse sketcher.

Figure 7 Putting Time in Perspective / Esteban Gomez

This worked very well and made me understand a bit better what was happening around me. I realized, however, that to really connect and understand nature, I would need to spend not hours or weeks at the site, but years or even generations, like the indigenous communities around the world have done throughout history.

That was the starting point. I asked myself, how have Indigenous communities managed to live in harmony with nature? This is when I came into Traditional Ecological Knowledge (TEK) which is a cumulative body of multigenerational knowledge, practices and beliefs – sophisticated in design and sustainable in nature [6].

[6] Julia Watson , LO-TEK Design by Radical Indigenism, 2019

I draw on Raymond Pierotti: "We are now looking, as humanity, at different ways to reestablish earth's balance through a scientific approach and are ignoring the TEK (Traditional Ecological Knowledge) developed by indigenous communities around the world, by categorizing it as primitive knowledge without scientific validity".[7]
The Rationalist/Materialist tradition established by Bacon, Newton, and Locke asserted that only information provided by measurement and experimentation could provide understanding of phenomena, which implied that science, as defined by the Western European intellectual tradition, was the only legitimate interpreter of the natural world.[8]

Indigenous communities have been in close contact to nature (fig 8) since the beginning of humankind. They have managed to establish a symbiotic relation where both people and nature benefit in perfect harmony. They consider themselves as part of nature and don't see it as a resource at their disposal. Experiencing trough deep observation over long periods of time and understanding the different timescales and lifecycles of every animal and plant species around them, have led them to understand that everything is there for a reason and works in a perfect system carefully balanced.


Figure 8 Kogi people / Photo Felipe Mesa @felipemesafoto

[7] Pierotti, Raymond, "Indigenous Knowledge, Ecology, and Evolutionary Biology", 2011
[8] Pierotti, Raymond, "Indigenous Knowledge, Ecology, and Evolutionary Biology", 2011

An example is the Khasis in Meghalaya India, who “plan their root living bridges a decade in advance, planting rubber fig trees at critical crossings across rivers, and after thirty years of training the roots across the rivers, a bridge can carry a load up to fifty people. Under ideal conditions, the lifespan of a living root bridge can be several hundred years. Over time the roots grow stronger and are low in cost, maintenance, and embodied energy”.[9]

Indigenous communities share many things in their vision of the world and their connection to nature, and in many cases simultaneous innovations have been proven to take place between tribes that didn't have contact with each other but managed to develop very similar things due to similar living conditions and challenges. Almost every tribe in the world thinks of themselves as the beginning of the universe and feel responsible for the wellbeing of earth. This is something I think we should look at because this gives them a sense of belonging and responsibility towards our planet that has enabled them to establish such harmonic relations with nature. It is not a competition between western knowledge and indigenous knowledge. I believe we can learn from both to be able to move forward as humanity because it is clear that there are things that we are doing wrong.

"Traditional Indian teaching say that all things including man come from the land. The Indian born of the land, had no need to own or control it, because there is no ownership of something of which you are an active part."[10]
According to Pierotti, this relation to their territory and their vision of ownership might be one of the biggest differences from the western world. Indigenous people manage to work as communities in a very efficient way taking care of everything around them and taking care of each other. In contrast, in the western world we are acting as individuals who own stuff and people are valued for what they own and not for what they are.
This materialistic approach to life has disconnected us from our spiritual being and has kept us distracted to understand our place in this earth.
Feeding our Egos with stuff to prove that we are greater than the other, has led us to live in a meaningless present always thinking about the future and what more stuff we want in our lives to show an external ideal of ourselves.

[9] Julia Watson , LO-TEK Design by Radical Indigenism, 2019
[10] Pierotti, Raymond, “Indigenous Knowledge, Ecology, and Evolutionary Biology”, 2011

The Map shows the indigenous territories in Colombia and the Sierra Nevada de Santa Marta in the northern part (fig 9), which is the home of the Kogis, Arhuacos, Wiwas and Kankuamos. Four indigenous communities we will study on this project.

In the next section of the text we will look at These four indigenous communities as inspiration to develop the design concept.

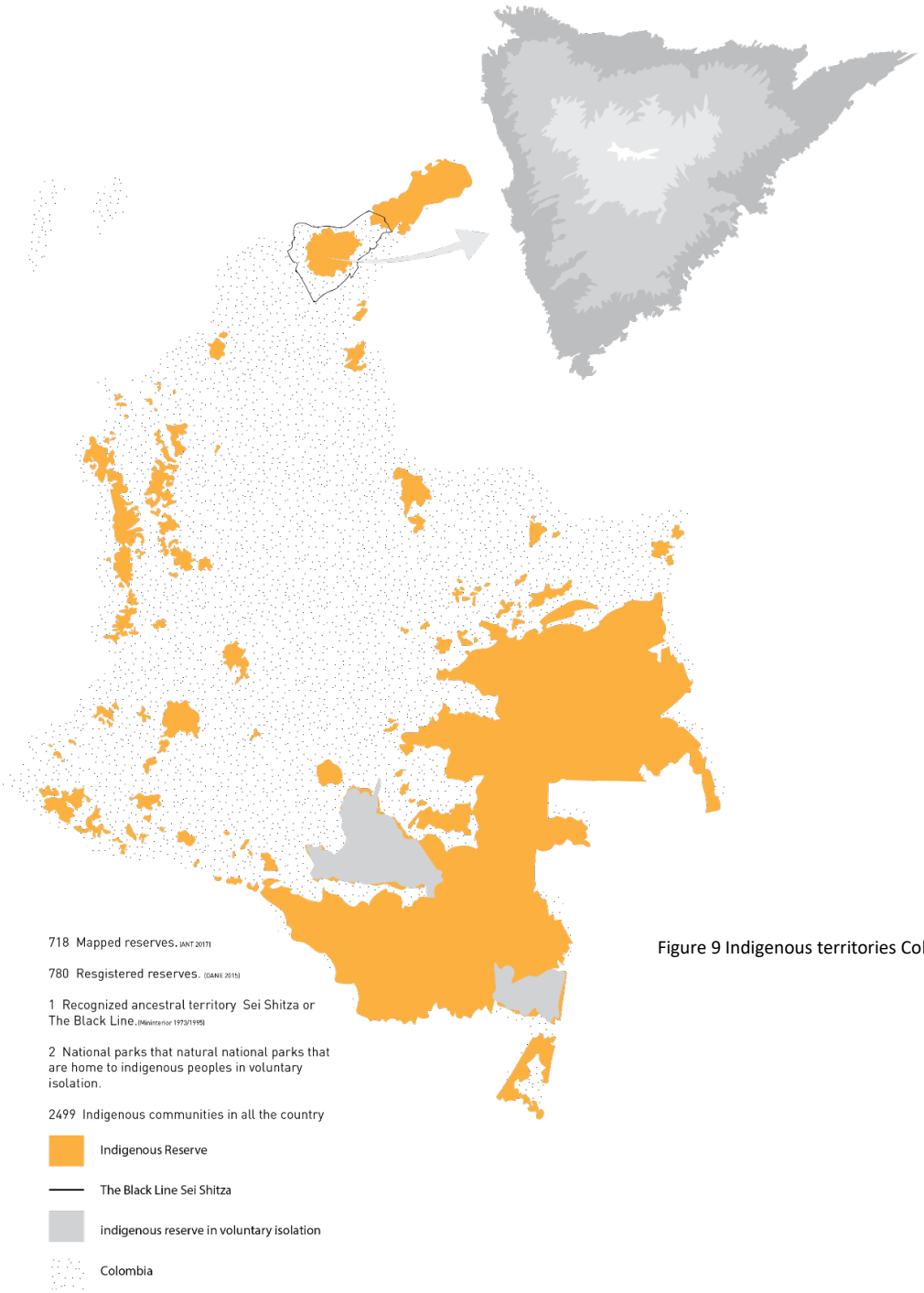


Figure 9 Indigenous territories Colombia

## *2.3* The Kogis, Arhuacos Wiwas and Kankuamos

The Sierra Nevada de Santa Marta is a pyramidal shape mountain range reaching an altitude of 5775 meters above sea level just 42 km from the seashore of Colombia (fig 10). It is the tallest mountain range in the world this close to the ocean. The Sierra contains all possible Neotropic climates from coral reefs, to deserts, to wetlands, to rainforests, to tundra, to alpine lakes, to glaciers. The Sierra has 35 rivers and 4 big hydrographic basins. It can be thought of as a small-scale model of the earth.[11] The Kogis call it The Heart of the World.

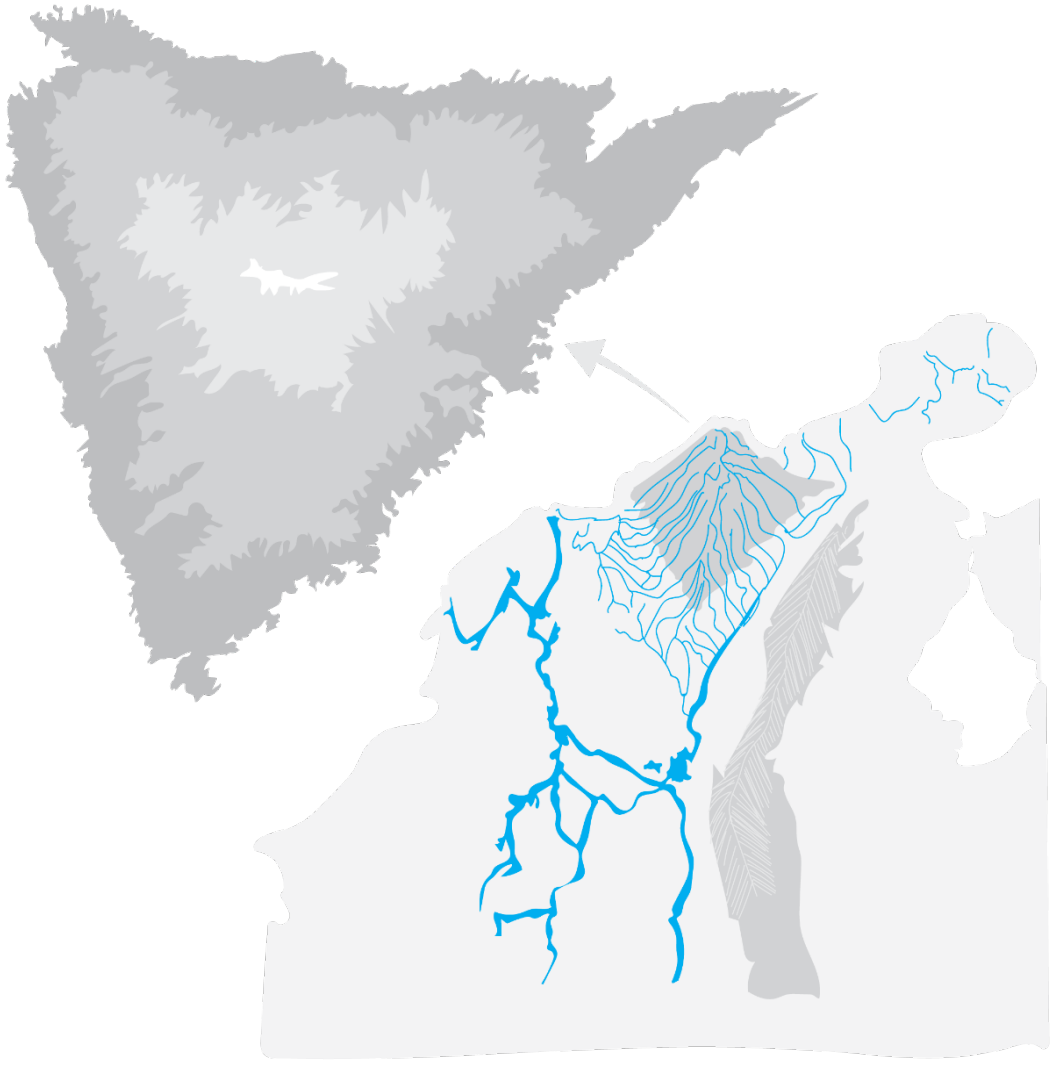

Figure 10 Sierra Nevada Santa Marta

[11] Parra Witte, Falk Xue', "Living the Law of Origin: The Cosmological, Ontological, Epistemological, and Ecological Framework of Kogi Environmental Politics", 2017

The Sierra is the home of four indigenous communities (fig 11) , The Kogis, Arhuacos, Wiwas and Kankuamos. All of them are descendants from the Taironas, who lived in the lowlands before colonization, and then were forced to hide in the mountains, making this the first story of displacement in Colombia.

Figure 11 Photo Felipe Mesa / Kogi people @felipemesafoto

The Traditional Ecological Knowledge developed by these communities in terms of how to live as a community in harmony with their territory and in coherence with their belief system, makes them a great source of inspiration to face today's displacement situation in Colombia. Therefore, we will go through some of their pillars of understanding and look at their relationship to the material world and how they have managed their territory.
The Kogis, Arhuacos, Wiwas and Kankuamos share most of their way of living and knowledge. For this part of the project, I will focus more on the Kogis from whom I managed to find more information for my research.

In the Kogi culture, Aluna (Mother Earth) is their mother and they call themselves The Elder Siblings (Brothers) (fig 12),[12] in charge of maintaining the harmony of earth; we, western society, are the younger siblings. The Law of Origin considers Earth as a living organism, so if a part of it is hurt or damaged the well-being of the whole body is in jeopardy[13].

Figure 12 Photo Felipe Mesa @felipemesafoto

[12] The Kogis call themselves The Elder Brothers but in this Thesis I will refer at them as the Elder Siblings
[13] Parra Witte, Falk Xue', "Living the Law of Origin: The Cosmological, Ontological, Epistemological, and Ecological Framework of Kogi Environmental Politics", 2017

**The four pillars of Kogi understanding** are Origin, Order, Function and Relationality

Everything has an **origin**, a Source.
Everything has an **order** and its place.
Everything has a **function**, a reason to be.
Everything is **related** in mutual sustenance

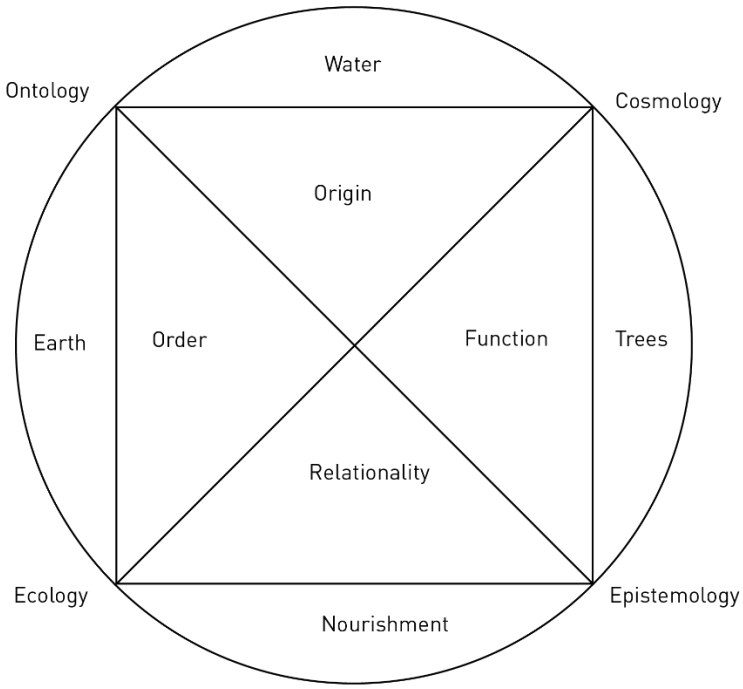


Figure 13 Kogi Cosmic model

All of these principles are related to their ecology (relationships), epistemology (function), ontology (order), and cosmology (origin) in their cosmic model (fig 13)l. Also related to water, earth, nourishment and trees.[14]

Every material representation in the Kogi culture has a meaning and a reason to exist from their architecture, to their clothes, to their agricultural practices. By doing so, they have managed to maintain their traditions and material language and have avoided being influenced by any kind of fashion or throw away consumerist culture

[14] Parra Witte, Falk Xue', "Living the Law of Origin: The Cosmological, Ontological, Epistemological, and Ecological Framework of Kogi Environmental Politics", 2017

The Kogi model of the universe (fig 14) is represented by the conjunction of two cones where the upper one represents the visible which for them is the Sierra and the lower one represents the invisible or the underworld. The axis of the two cones represents the center of the universe.
This model is lived in many of their everyday objects like the Nuhue (sacred house) and the spindle.

The kogis use rituals around everyday practices with profound meanings that make them reflect and connect to Aluna (Mother Earth). This connection to their everyday objects keeps them in a permanent reflection and connection to their territory and aware of their role in this planet.[15]

In the Kogi culture you are not valued for what you have but for what you know, so in a first glance from a western perspective they might seem as people with a lot of needs and little resources but actually it is the complete opposite. The Kogis don't see any value in material possessions, have a very minimalistic approach to life and don't understand their little siblings' (us) interest in having so many things. They have everything they need around them provided by the Sierra.

Their knowledge has not been written down, it has been passed from one generation to another trough specific rituals that have maintained their culture trough time. These rituals are represented among all of their material possessions. For example, in architecture, often the location of the houses, the materials used, and each part of a house has a reason to be. In some tribes, their houses are the medium to pass their knowledge from one generation to another as it is in this sacred places where the young are taught.

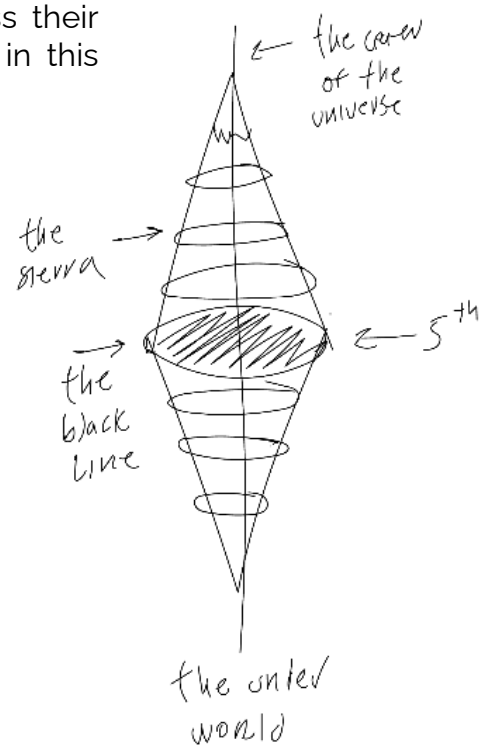


Figure 14 Kogi model of the Universe

[15] Aluna , film https://www.youtube.com/watch?v=ftFbCwJfs1Iz

## Architecture

The Nuhe (sacred house) (fig 15) is made up of a conic shape with a diameter in the lower part of about 8 to 10 mts and 10 to 12 mts height. The circle in contact with the land represents the world in which we live in, the material world, the central axis of the cone represents the center of the universe. It has two opposite entrances as a horizontal axis aligned with the sunrise and the sunset. The 4 pillars creating the two entrances meet at the top and are the guardians of the Nuhue, from them the hamacs are hung holding the men between this world and the other.[16]




Figure 15 Kogi Architecture

[16] ALuna the film https://www.youtube.com/watch?v=ftFbCwJfs1I

## The Loom

The loom (fig 16) is seen as their main metaphor and it is related in many ways with their cosmic model and to their territory. Each corner of the loom represents one of the four people of the sierra and the cross beams of the loom represent the paths connecting them. While you go up and down the sierra you are walking on a big loom and therefore you are weaving your life. You also weave your life while you weave your clothes, so all of their thoughts are intertwined in everything that they wear giving a lot of spiritual value to them.

Their clothes are made out of cotton cultivated in their lands and turned into yarn with a spindle that represents the origin of the universe.

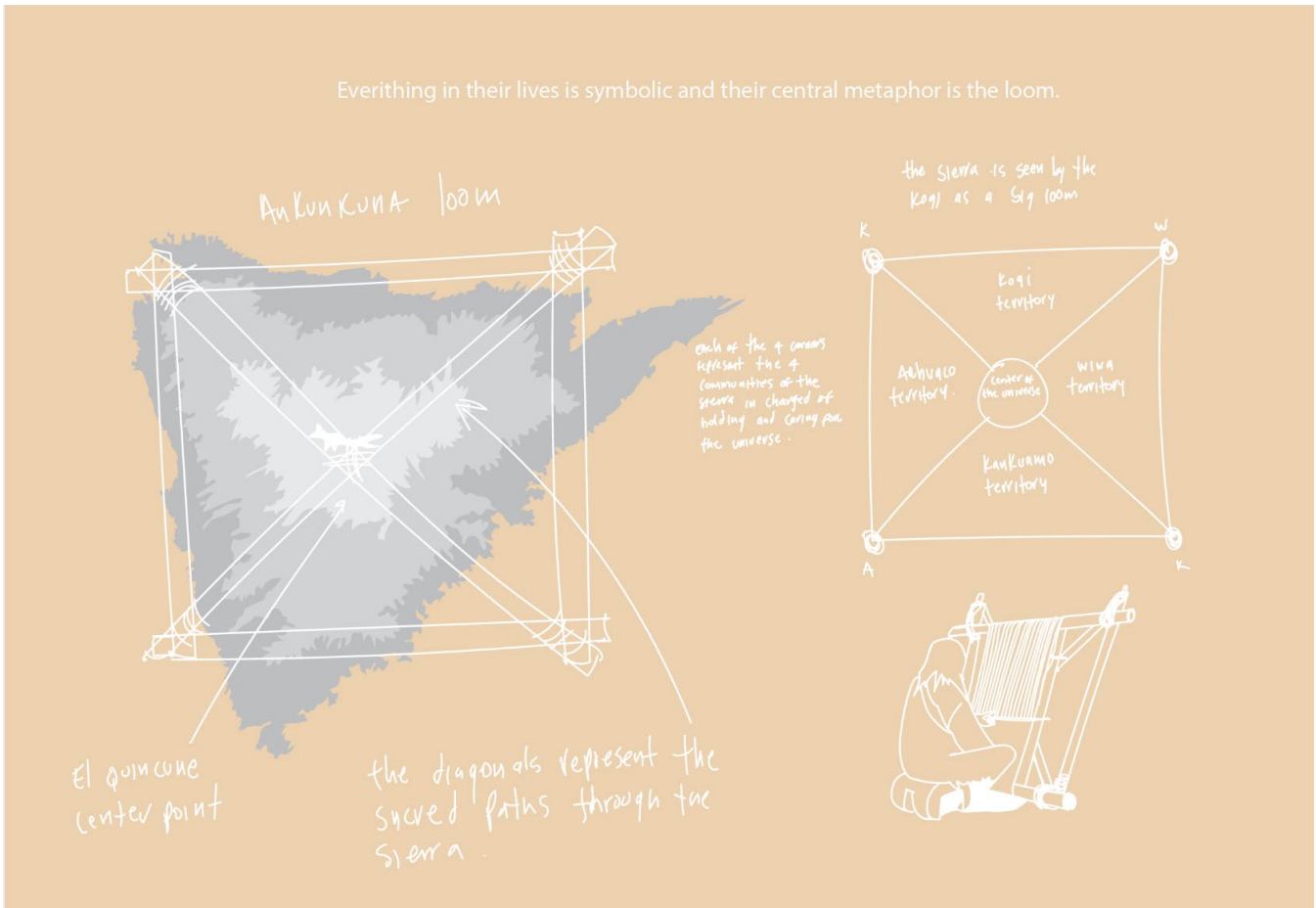

Figure 16 Kogi Loom

## Agriculture

Food is cultivated at different altitudes from the ocean to the snow peaks allowing a great variety of food (fig 17). Food is then exchanged through a network of paths between the different communities to guarantee that everybody has everything they need. With these agricultural practices, they maintain productive grounds avoiding monoculture practices and keeping the soil rich in nutrients



Figure 17 Kogi Agriculture

## 2.4 The learnings

The Kogi way of life could be very useful for the transition that people in a situation of displacement are facing to help them understand and overcome these circumstances.

Colombia is a very culturally diverse country. One of the biggest challenges that communities in a situation of displacement face, is that they find themselves living with a group of people from very different cultural backgrounds, and in a place quite different to where they come from.

The four pillars of Kogi understanding can be very useful in this transition towards building a new community, and I have adapted them as follows:

We all have a different **origin** and come from very different backgrounds.

We all have a **function** and a reason to be in this new community.

We are all **related** in mutual sustenance to help each other.

Everything has an **order** and a reason to be.

The Kogis **minimalist approach** to life could be an important tool, as people who come from rural areas are used to live with the essentials. Suddenly they find themselves in a city ruled by materialism where you are valued by what you own and not by who you are.

**Adding meaning** to your objects by putting your thoughts and beliefs in them adds value to what you have and enables you to have a meaningful life.

Creating a platform for **producing food** and enabling exchange within the community would be of great help to guarantee the wellbeing of all of its members.

Looking at the house as a Loom where every day we weave our lives can be a good metaphor for adding meaning to them.
Building not just houses but habitats.
Engaging the communities in building their own houses and use their TEK.

# 3. Form giving

Figure 18 Process photo / Photo Fredrik Sandin

## 3.1 Concept 1

After learning from the Kogis and looking at the reality faced today by displaced communities in Colombia, I will try to translate these learnings to a habitat solution.

As the project seemed directly related to architecture I started looking at some literature regarding the technical issues for building a house. At this moment I felt a bit out of context as the project seemed very distant from my background.
Talking to Anna Maria Orrù, my tutor I decided to step away from an Architectural approach to work on the project and decided to do it using my design knowledge for developing it.

I started materializing some of the first concepts and made a scale model where I was exploring joints and trying to make a house that was easy to put up and down.

This model was made using a type of joint commonly used on tables to attach the legs. I used this joint (fig 19) on the corners to hold the columns to the joists, resulting on a very stable and easy to assemble solution.

The model worked well structurally and was easy to assemble and disassemble but it was limited on terms of adaptability to different contexts and sizes.
After having this first encounter in building a house I was quite happy with the result so started to explore on a more modular version.

Figure 19 Process photo scale model / Photo Esteban Gomez

## 3.2 Concept 2

The main metaphor for developing this concept was to look at the house as a Kogi Loom so the square walls with the X in the middle have the same shape of a Kogi loom. The house can be seen as the loom where we weave our lives.

The second concept was a modular solution that could be adapted to the different phases of displacement, and that could also become a permanent house.

Currently one of the most commonly used solutions for this context is using the Media Agua (half water) houses designed in Chile as an emergency house after the 1960 earthquake in Valdivia[17], and which are used today in more than 16 countries in South America. The Media Agua is a 3x6 mt prefabricated wooden house. The Media Agua is a very affordable and fast solution but it doesn't adapt in terms of materials and size to the local resources or context where they are implemented.

I began by looking at easily accessible and not very expensive materials in Colombia, to build up a basic module that could be put together easily, and that could be attached with other modules and allow the house to be improved in a more controlled way through time.
But also that it enabled the users to use their building skills and traditions making it a solution more closely connected to their roots.
The basic module was made of wood and metal (fig 20). The floor was modulated by two 15mm Plywood sheets of 120 cm x 240 cm making a footprint of 240 cm x 240 cm. The columns were made out of cold rolled steel square pipes and the joists were made out of wood.

Figure 20 Concept 2 1:10 scale model / Photo Esteban Gomez

[17] https://www.plataformaarquitectura.cl/cl/02-361062/en-detalle-vivienda-basica-chile

The walls were made out of removable wooden frames that enable the user to cover them using local materials and traditional building techniques. In this case the walls were covered with a natural fiber woven material.
This version was easily put up and down, and worked very well as a modular house, it was flat packed in a small size to be easily transported.
Modules of different sizes and uses that can be arranged in different ways (fig 21) according to the needs of the user and can be flat packed small for easy transportation.

After estimating the cost of the module for building a 1:1 prototype the metal parts became a restriction as they were expensive and required a lot of precision for the welded joints. A third concept was then developed taking the learnings from concepts 1 and 2.

Figure 21 Concept 2 rendering configurations

## 3.3 Concept 3

This concept was developed from the learnings of concepts 1 and 2, incorporating the joint system from concept 1 to develop an all wooden structure frame (fig 22,23), and keeping the modularity and main features of concept 2.
In this concept the possibility to add one module on top of another was removed but a ½ second floor platform was added, and the roof was lifted to add more space. This second floor can be used as sleeping space, storage area or it can also be used to place one of the raised beds for growing food (fig 23) by replacing the roof tiles for clear tiles.

As its structure is built 100 % on wood it can be easily manufactured with very simple tools. All of the wooden parts are made out from 4.5 cm x 4.5 cm x 300 cm standard wood beams which are very easy to source.

Figure 22 Concept 3 1:10 scale model / Photo Fredrik Sandin

Figure 23 Concept 3 photo1:10 scale model  / Photo Fredrik Sandin

Figure 24 Scale 1:1 Prototype / Photo Esteban Gomez

Figure 25 House Assembly

# 4. Conclusion

## A Story of Placement

This Story starts with a real displacement in January 2021 from different parts of Colombia. The development of the story it is a speculative scenario were people build a story of placement with the habitat solution proposed in the project.

A community of 45 families and 135 persons coming from the Pacific coast of Colombia in the Choco region were displaced due to confrontations between guerrilla groups and local criminal bands [18]. These families are indigenous communities from the Embera tribe that have been living in the Choco rain forests for generations. They were displaced to the closest city, Medellin, a City of 3.7 million people. From here the story is a speculation of my version of **A Story of Placement**. These 45 families landed in Vereda La Esperanza (hope) (fig 25) where a new project is being put in place to welcome displaced communities and give them a temporary or permanent solution to their situation.

Figure 26 A Story Of Placement/ Vereda La Esperanza

[18] https://reliefweb.int/report/colombia/colombia-desplazamientos-masivos-enero-2021

Vereda la Esperanza is a land donated by the city of Medellin and it is located in the outskirts of the city. The Vereda Esperanza has limited access to energy, and water provided by the state and it encourages the use of Traditional Ecological knowledge from the people moving in towards creating a self-sustainable solution.

Vereda la Esperanza is home to people from different parts of the country making it a very diverse community with Afro-Colombians, Indigenous communities, Campesinos (farmers from rural areas)  and people coming from other urban contexts as well.

The core of the project is a progressive, sustainable, portable, and productive habitat solution, as a starting point to rebuild a community. The house modules are 5.7 sqm and have a 2.8 sqm mezzanine for food production, sleeping space or storage. There is also a smaller module of 2.8 sqm that can be used as a bathroom or as a kitchen. The modules can be put together in different configurations to adapt to the needs and sizes of the families, or the different stages of displacement. The floor of the house is lifted from the ground making it a palafitic house for protection from the elements, and each leg can be adjusted to different heights to adapt to the terrain and minimize the impact on the environment. The houses are anchored to the ground with 1mt ground anchors that can be easily put in and out if the house has to be moved around, and also giving more stability to the terrain and preventing landslides. The height of the roof can be adjusted to the different weather conditions. The walls are constructed from wooden beam frames, but the covering material for the walls is meant to be with local materials encouraging the use of traditional building techniques, giving the possibility for every house to be different. Food production modules can be installed in the mezzanine combined with clear roof tiles for the roof section. Food production as a way to build a community is a crucial part of the project as if every module has a food production unit on the top this can become a substantial land to provide part of the food needed by the community and also foster food exchange. The modules come flat packed in a 2.4 x 1.2 x 1.2 mt pallet with 20 cms handles coming out on each corner. The modules are easily put up by 2 persons and it encourages the communities to self-build their houses and

make them unique by enabling the use of different techniques and materials for the walls, and by putting the modules together in different ways. The project wants to make the people proud of their house and give them a sense of belonging through these difficult times.

The design concept springs from studying The Kogis, Wiwas, Arhuacos, and Kankuamos from the north of Colombia who have managed to make a successful story of placement in their territory by building a symbiotic relationship with it.

Some of the most important findings in the research are intertwined within the development of the design concept.
The walls of the house were inspired by the Kogi Loom which is a rectangular frame with two cross beams. The metaphor within the walls is to look at your house as a loom where you are weaving your life while you live in it.
Having food production units on the roof of the modules fosters food exchange within the community and brings the community together.
Having a minimalistic approach to life by only having meaningful objects that have a clear function and reason to be, enables the users to live in a smaller space and not getting dragged into the materialistic way of life lived in the cities.
The four pillars of Kogi understanding are used towards building a self-sustainable community.

Vereda La Esperanza is a mix of public and private actors as the land and public services are provided by the state and the house modules are provided by private companies or NGOs.

When these 45 families arrived to Vereda la Esperanza each one of them was given a specific spot where they could start creating their new stories together with the existing community. Each family depending on their number were given one module for every 3 persons so that they can have a floor lifted from the ground and a roof. In exchange for receiving this piece of land and the first modules they were all assigned different tasks within the community which they had to complete in order to be able to stay there. The tasks went from building infrastructure, to cooking, to child care, to growing food, etc.

After some year's people added more modules to their houses making them proper homes with bedrooms, bathrooms, kitchen, and eating and social spaces.

With time the houses were equipped with rain water collecting systems in the roof and tanks under the houses. They made dry compost toilets to keep the soil in good condition, and solar panels for energy. Some members of the community specialized in making wall panels for the houses using traditional techniques and adapting them to the local resources. Each house specialized in growing different types of vegetables which were later on exchanged within the community. They had chickens under the houses and a lot of the basic needs were met within the work of the community.

After some years the community was informed that the conflict in their homeland had stopped and that they could return if they wanted to. Many of them had made a life on Vereda la Esperanza but some decided to go back. The ones that decided to go back disassembled their homes with the help of the community and the modules were transported by the state to their original homeland where they would put them up again.

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# 7. List of illustrations

# 8. Appendix

This part of my Thesis will be about reflecting on the spring exhibition (fig 26).

The exhibition was a big challenge for me as after the 75 % presentation I decided to build a 1:1 scale prototype of one of the house modules. The design concept was very defined at this stage because for my scale models I had worked on scale 1:10, and this scale demanded me to solve all of the construction details. The manufacturing of all the parts went very well and it all seemed that it was going to fit together in a nice way. The big challenge was finding a place to put up the house. A couple of weeks before the exhibition I managed to put up the house for the first time (fig 24) and I was very happy with the result. The proportions and stability of the house were very good and it was quite surprising for me how fast and easy it was to assemble and disassemble. This time I was in Seminariegatan in the place where I was going to exhibit some weeks later, so it was like a small exhibition for me, where a lot of people gave me nice comments on the project.

Figure 27 Spring Exhibition Konstfack

Building the 1:1 prototype taught me a lot on how the house should be constructed and having the resistance and weight of the real materials made the project very real for me. After this, I had to put the house down as the Bachelor exhibition was before us

During the Exhibition I tried to be there as much as possible and talked to a lot of people from very different backgrounds. This was a very important moment in the project as I realized that the project was not just about the housing solution itself but it became a vehicle to show a lot of people what is going on in different parts of the world, from which most of them only hear what the media decides to tell them.

To face a lot of the situations that we have today as humanity I believe that empathy is one of the most important qualities to develop, and for me this was one of the biggest achievements with the project as it really engaged people on this situation.

As for the future possibilities of the project, there were very interesting visits to the exhibition like the Colombian Ambassador in Sweden with whom I'm currently organizing an agenda to meet with different Swedish NGOs with operations in Colombia.

I'm looking for spaces to exhibit the project in the global north as a way to generate empathy and find funds to further develop the project in Colombia. At the same time, I will be meeting with Colombian private companies and NGOs to develop a testing prototype in Medellin and test it with the community in Vereda Granizal. I believe that after having a functional prototype in place the project could be scaled up and be seen as a possible solution to face today's internal displacement situation in Colombia.

Figure 28 Spring Exhibition Konstfack