Olla sobre la llama.
The way to safe, healthy and efficient stoves for Villa Clarín.

Universidad del Norte
DISCA Lab
Laboratorio Experimental de Diseño para la innovación social del Caribe

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Aknowledgements.
Community of Villa Clarín, el Colorado, el hobo and vereda 66 san juan de Nepomuceno especially women who kindly opened the doors of their homes.
Context.

Villa Clarín, San juan de Nepomuceno, el hobo y el colorado are informal or underserved neighborhood where women usually cook and spend as much time near fireplace stoves as younger children they take care of, exposing them to these pollutants from early childhood. These vulnerable population who are constantly exposed to wood smoke have a higher risk of developing chronic obstructive pulmonary disease, and to experiment more frequent and severe symptoms of the disease.
The project.
“Olla sobre la Llama” is a project of co-creation of stoves with the community which uses resources available in their environment and seeks to inform people the risks of exposure to firewood smoke and through participatory design tools to improve the quality of life of the community by the empowerment of solutions.
The design process.

1. Diagnostic of the situation.
2. Analysis of conclusions.
3. Session awareness raising of the problem.
5. Alternatives Evaluation.
6. Prototyping
7. Verification with the community
8. Implementation
This is a neighborhood of informal nature endangered or threatened by legal uncertainty of land, with a survival economy and housing, underserved of basic infrastructure services, and in the absence of state residents have to organize themselves to improve their living conditions before being evicted or to prevent emergency situations by the characteristics and location of the land.
Participatory design was used since it open the possibility of developing raising awareness processes, collective learning, empowerment, among others. It was carried out in a participatory way with the community, especially women heads of household in the neighborhood. People took part from diagnosis, to stoves construction.
Through training workshops and co-design for empowering building techniques with clay, a new generation of "makers" is created. These "makers" have the necessary tools to perform stoves maintenance, adjustments or new developments; while transferring this knowledge to new families arriving to the neighborhood or other communities with similar situation.
This project seeks to prevent damage to health by reducing the impact of the conditions that expose informal settlers to high levels of pollutants from the smoke of adapted firewood stoves. However, despite still using firewood as fuel for cooking activities at home, in this case, small pieces of pallets that are abandoned by commercial sector companies around are used.
In terms of consumption, “Olla sobre la llama” seeks to reduce the health impact of neighborhood families, allowing a cleaner combustion and carbon monoxide redirection. Also includes an open layout as each person can make their own stove and its adaptations. Finally collection center of supplies and molds is taken for the collaboration of community leaders who open their home voluntarily; and construction of the stoves is done communally where everyone can participate in the sessions.
Through this kind of projects is given the opportunity to have a closer contact with reality, to the problems faced daily by vulnerable communities in our region and this sensitizes the students. Under this new methodology of work, participatory approaches where community members feel connected to the design process from start to finish are used, and these are tools that the students must learn to develop their projects.

**Skill Training and Design Education**

- **Participatory methods**
- **Sensemaking through everyday problems**
- **Talk aloud and think aloud protocols**
The stove design was contemplated from the beginning to be built with materials that could be found in the territory. The neighborhood has a brickworks where the material to build the stoves is extracted, which is the clay. And the people of the community are empowered to build their own stove and do some maintenance if necessary. This training allows people in the community to know the benefits of the material so that they can build other objects with the same technique.
Visualization and storytelling have been very helpful tools both for the student to organize ideas and to communicate to community and other external stakeholders the relevance of the project to be replicated, the process and results.

**Storytelling and Visualisation**

- Document the experience
- Submit process to other stakeholders
- Conferences, papers and community talks

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