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Affordable and Sustainable Floating Houses

Submitted By: Think Playgrounds



Organization Profile

Organization Name: Think Playgrounds

Organization Type: Civil society

Website: https://sanchoi.org/

Practice Details

Country(ies): Vietnam

City(ies): Hanoi

Start Year: 2021

Ongoing: Yes

End Year: N/A

Main Adequate Housing Components:



Housing Thematic Areas:

- Housing Affordability & Financing
- Communal & Self-Build Housing
- Housing Rights & Social Inclusion
- Housing & Climate Adaptation

Relevant SDGs:



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Problem & Context

The project addresses the critical issue of inadequate and insecure housing for marginalized, low-income urban communities in Vietnam, focusing on the "floating village" (Xóm Phao) in Hanoi, a settlement on a mid-river sandbar that starkly contrasts with the modern city nearby. The residents, many of whom are migrants from other provinces, live in fragile, makeshift homes prone to natural disasters like Typhoon Yagi, and lack basic services such as electricity, clean water, and sanitation.

This problem is rooted in significant policy gaps. While Vietnam has policies to support low-income and near-poor households, they are typically contingent on having an official household registration. This excludes the residents of Xóm Phao who often do not have this registration or even basic identification. The cost of social housing remains prohibitively high for them, and with no rural hometown to return to, they are left with no option but to live in these informal, precarious settlements.

Solution Developed

1. Solution Developed

- To co-design and construct safe, stable climate-resilient, affordable floating houses for Xóm Phao residents who lack access to essential services and face frequent flooding.
- To empower young architecture and urban planning professionals with knowledge and experiences regarding community-driven housing solutions.

2. Objectives

- Provide affordable and stable housing for Xóm Phao vulnerable households.
- Empower residents with long-term self-sufficiency through knowledge, ideas and network exchange to independently rebuild and maintain their homes.
- Inspire youth professionals to engage in sustainable urban development.

3. Innovative Approaches

- This is a collaborative co-design methodology involving residents in the design and construction process to empower the community and ensure the houses meet their needs.
- The design prioritizes durable, cost-effective, and locally sourced materials such as steel and aluminum to create a structure adaptable to rising and falling water levels.
- The initiative builds a network of students, experts, and social organizations to replicate the model and secure future support beyond the initial grant period.

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Implementation

Actions Implemented

- Co-design methodology by working closely with the community to collaboratively design and build a pilot floating house.
- Participatory surveys about community's needs.
- Fundraising with expanded-network.
- Collaborative design workshops with residents and volunteers.
- Hands-on construction efforts.
- Youth empowerment workshops on sustainable design and advocacy.
- Public sharing seminar to discuss findings and inspire a broader audience.

Actors Involved

- Youth individuals or groups who conceived and led the project.
- The local community of Xóm Phao: a central partner, directly participating in the design and construction process.
- Companies, individuals, and organizations that funded the project
- International schools and volunteers who contributed human resources.
- Social organizations, and prestigious academic institutions.
- Local government agencies.

Timeline

- 2021-2022: Conceptual phase, focusing on a co-design approach with the community and piloting the construction of a community house.
- 2023-2024: BVIS (British Vietnamese International School) provided support by helping several families in urgent need for house repair and rebuild with minor repairs.
- 2024: Following Typhoon Yagi, BVIS supported the rebuilding of two floating houses, initiating a series of house rebuilding efforts.
- 2025: Additional repairs and built two new floating houses with support from UNIS school volunteers and funding from Habitat for Humanity, project is ongoing.

Enablers & Obstacles

1. Key drivers & enablers

- Community engagement in the design and construction process.
- Groups of experts in architectural design and co-design.
- Established networks with academic institutions and social organizations.

2. Obstacles & mitigations

a. The residents' lack of legal recognition (official household registration or national ID cards) makes them ineligible for existing government support and policies aimed at low-income households.
   → Mitigated by working to gain informal recognition from the government, acknowledging that officials still see a need to help the community. By involving government officials in charge of volunteer work, the project hopes to secure additional resources in the future.

b. The residents' difficulty in understanding architectural blueprints.
   → Mitigated by shortening the design phase to move more quickly to direct construction, with on-site adjustments and direct community supervision to ensure the final result met their needs.

Results & Impact

Quantitative:

- 8 floating houses renovated, with at least 20 local people directly involved in the design and construction process
- A strong network of 12 donors, expert groups, volunteers and residents built during the process

Qualitative:

- The floating houses are designed and built to optimally suit each family's circumstances, easy to replicate, using local materials
- The residents' lives are enhanced with safety, improved health, and livelihoods.

Impacts

- Empower the Xóm Phao residents with practical skills in sustainable construction through the co-design process, applicable to rebuilding other houses in their community.
- Provide them with a safer and more stable home, a sense of belonging and peace of mind, so they can focus on their livelihoods.
- Aim to support the transition of the community from an informal to a more formal state.

Broader and Longer-Term Impacts

- The research and development of affordable, climate-adaptive floating house designs
- Viable future living space solution for vulnerable communities facing frequent flooding.
- Empowerment of young professionals to become key drivers of sustainable urban development.
- Lasting social networks and collaboration between students, experts, and social organizations

- Empowerment the community to take ownership of similar projects, ensuring a sustainable impact well beyond the grant period

Replication & Scale Up

The project has not yet been fully replicated, but it has a clear plan to do so. Based on their experience, in the first phase, the project is ready to expand support to other communities along the Red River in northern Vietnam. The key factors enabling this successful replication are the community-led co-design methodology, which empowers residents with the skills to maintain and replicate the houses themselves, and the use of affordable, durable materials that are easily accessible and cost-optimized.

Through building a network of interested individuals and empowering the community through training. The model is highly replicable because of its low cost, which is achieved by using local, recycled, and common materials. The skills required for construction are accessible to community members, allowing them to take ownership and lead future projects. To expand its scope and reach, the initiative must continuously conduct networking and fundraising campaigns to grow its partnership network and secure more resources, so the project can expand to other communities along rivers across Vietnam.

Policy Uptake

This housing practice is a new or innovative practice that is not yet adequately or fully integrated into formal policy frameworks.

1. Formally recognize floating houses as a safe, viable, and affordable housing option for vulnerable communities and and integrate informal urban communities into city planning.
2. Mandate or incentivize co-design approach, ensuring that housing solutions are tailored to the residents' specific needs.
3. Promote affordable and climate-resilient building materials for widespread replication of the model.
4. Establish formal public-private partnership models to encourage long-term collaboration between government bodies, NGOs, and academic institutions to secure funding and expertise.

Lessons & Takeaways

- Shorten the design phase and move more quickly to direct workshop construction as the residents often had difficulty in understanding architectural drawings, leading to requests for changes and adjustments only when on-site. Therefore, a more hands-on, on-site design-build approach with direct supervision from the community would be more effective.

- A different approach is necessary to involve government officials in charge of volunteer work from the beginning to help secure additional resources and strengthen the project's long-term sustainability.