Beyond Survival

Building resilient communities through co-creation for the Rohingya refugees in Bangladesh

LAMIA AHMED

MARIIA SMOLIAKOVA
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BEYOND SURVIVAL
Building resilient communities through co-creation for Rohingya refugees in Bangladesh

Marina Semeljukova & Lamia Ahmed
Supervisor: Alejandra Naveiras Llopis
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CHAPTER 1: THE STORY OF THE DISPLACED PEOPLE

Worldwide, there are 79 million people displaced due to war, violence or climate change which equals 3% of the world population. With our project, we are focusing on the Rohingya refugee issue.

In 2017, thousands of people had to cross the borders of Myanmar due to mass genocides trigged by ethnic cleansing and around 600,000 of them fled to Bangladesh as refugees.

Whereas, Bangladesh has 2 million informal settlers of its own known as internally displaced people or IDPs who have been displaced due to extreme climatic conditions.

Internally displaced people (IDPs) - people who have not crossed a border to find safety. Unlike refugees, they are on the run at home (UNCHR).

Refugees - people who have fled war, violence, conflict or persecution and have crossed an international border to find safety in another country (UNCHR). They are unable to return to their country of origin due to the fear.
Since Bangladesh is a delta, two-thirds of the country is less than 5 m above sea-level. Large areas of the land might be vulnerable to the sea-level rise.

Moreover, Bangladesh is a densely populated country where Rohingya refugees are living in 34 extremely congested camps in Cox’s Bazar which has raised the awareness of the high tracts of the region in the Southern part of the country.

Now Bangladesh is proposing to relocate 100,000 refugees to an outer island in the Bay of Bengal, which is called Bhashan Char.

**Camp**
Lifestyle of Rohingya refugees in the camps of Bangladesh

**Bhashan char**
Lifestyle of Rohingya people in the built structures of Bhashan char

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**Future scenarios**

- **Repatriation to Myanmar**
- **Moving to a new country of relocation**
- **Staying in Bangladesh in the camps in Cox’s Bazar**
- **Staying in Bangladesh and becoming a part of the community**

After exploring all the possible scenarios for these people and considering all the circumstances, we have decided to explore the scope and possibility for both the refugees and local IDPs to coexist and benefit from each other in Bhashan char.
CHAPTER 2: THE STORY OF THE DISAPPEARING LAND

Biodiversity of the area

The area is unique as a nursery of the sea since the country’s most vulnerable and endangered species thrive here. The area also contains several mangrove species and other coral species during winter.

1. Emergence of the land bar
2. Reclamation by birds and vegetation
3. Formation with mangrove ecosystems
4. Formation of the settlement

Ecology

Formulated mangrove forest covers a small area of land which in dark grey on the map. The rest is mostly covered with scattered trees and most part in the north is a mudflat. Following traditional techniques an embankment was built surrounding the settlement to protect it from flooding and excess fresh water.

Settlement

Compared to the traditional gradual inhabitation process of the islands, a whole settlement was built within 3 years to accommodate 100,000 people. Since the settlement is built from repetitive modules, it lacks diversity and its rigid structures have a huge contrast with nature. Even though it has scope for providing basic services, it lacks livelihood support facilities.
Bhaxhan char
Building block

The settlement is built with repeating modules of three blocks, where each unit has 16 rooms with a shared kitchen and toilet facility. Moreover, each module also has a multifunctional disaster shelter.

The settlement is part of the Ashiyana project of Bangladesh which was initiated to provide housing for the homeless people. Projects under this initiative are all similar in terms of planning, where some actually failed due to lack of livelihood support facilities.

Deserting in the delta

To address the challenges of the low-lying landscape, people practice floating agriculture on a model where forest trees, fish and vegetables are combinedly harvested for short and long term benefits.

To build coastal resilience, one of the recent policies is to plant diversified species of mangrove in the delta as they highly depend on the mangrove for livelihood.

Bangladesh

Built form
Floating communities built around a central courtyard surrounded by living and work spaces.

Occupation
Marine activities, fishing, shellfish, etc., as a main occupation.

Social structure
Societies are composed of coastal fishing villages.

Infrastructure
Most of the settlements are high on stilts with paths to maintainadequate air circulation.

Rural settlement pattern of Bangladesh and Myanmar

Bangladesh and Rohingya rural settlements differ quite a lot, where settlements in Bangladesh usually have a community infrastructure, it’s mostly absent in Rohingya villages.

Homes made in Bangladesh are traditionally built around a courtyard on the top of a raised mound. Whereas Rohingya build their houses elevated from the ground where most things are carried out indoors due to a protective outlook towards natural hazards.

Flooring agriculture
(Dividely important agricultural heritage system)

Integrated diversified livelihood practice (dual food fish vegetables)

Mangrove restoration for coastal protection (Shorelived species plantation)

Home based income generation (using local resources)
**Phase 1: Establishing identity through livelihood**

- **2021**
  - Top-down through participatory in fishermen’s circle
  - Preservation of local culture 40-50% (23%)

**Phase 2: Empowering through collective knowledge**

- **2030**
  - Establishment of knowledge in fishermen circle
  - Preservation of local culture 60-70% (38%)

**Phase 3: Coexistence with more than human commons**

- **2040**
  - Strategic replication of sustainable communities around fishermen’s circle
  - Preservation of local culture 60-80% (22%)

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**CHAPTER 3: THE FRAMEWORK OF CO-CREATING RESILIENT COMMUNITIES**

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**Acknowledgement**

- Negotiation & communication
  - Reception

**Livelihood support**

- Co-creation of processes
  - Co-creation of spaces

**Collective knowledge**

- Workshops
  - Capacity building
  - Tools and resources
  - Digital platforms

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**Mangrove ecosystem**

- Locals and Refugees
  - Value

**Adaptive livelihoods**

- Mangrove reclamation
  - Mangrove forests
  - Mangrove wetlands

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**Phase 1: Establishing identity through livelihood**

- **2021**
  - Nypa palms
  - Traditional techniques
  - Flooding agriculture

**Phase 2: Empowering through collective knowledge**

- **2030**
  - Innovative housing prototype
  - Experimental agriculture

**Phase 3: Coexistence with more than human commons**

- **2040**
  - Nypa palms
  - Traditional techniques
  - Flooding agriculture

CHAPTER 4: DESIGN APPROACH

Programmatic diversification

With this strategy the areas along the settlement will be diversified with programs which will act as analyzers for activating livelihood and social cohesion.

The core categories of programs will take place in each phase which will generate organic growth in the neighborhood and inter neighborhood scale.

Connectivity structure

With the second strategy we are creating a connectivity structure. Blue lines indicate vehicle connection and they mainly follow the existing street grid. The red lines indicate pedestrian connectivity routes, which are located along with the activities. Considering the local context, the island will not have cars but electric, e-bike, and icicle as a main means of transportation.
Empowering communities through co-creation

Collective knowledge platform (app)

Organic growth

Breaking the monotony

With this strategy we intend to break the monotony of the settlement by creating voids. One building from each block will no longer be used as housing, but rather the community can decide how to re-purpos or re-construct it.

The materials from the demolished buildings will be used for new constructions. The elements will be reused in the new extensions and the concrete rubble can be used for building breakwater reefs and permeable pathways.

New structures will be built with local materials following the principles of modularity to address the challenges of future relocation.

Blocks to be reappropriated

Elements to be reused

Reused elements in further expansion

New structures for the settlement

Locally available materials

Modularity based on local techniques

2044 Plantation of mangrove sapling

2047 Diversification & Maintenance

2050 Conservation & dependence

Fast growing trees

- Avicennia germinans
- Bruguiera gymnorrhiza
- Avicennia2 oleracea
- Bruguiera2 gymnorrhiza
- Excoecaria agallocha
- Ceriops tagal
- Sonneratia alba
- Sonneratia caseolaris
- Nypa fruticans

Diversified species

Mangrove forestation

As part of increasing the resilience of the settlement, we propose mangrove forestation in the northern part of the island along the breakwater reefs as shoreline protection.

The mangrove forestation project would also encompass fast growing oaks and bee farming in the future and later diversifying with different species to create independent mangrove habitats.
CHAPTER 5: PHASE 1 - ESTABLISHING IDENTITY THROUGH LIVELIHOOD

The aim of the first phase is to create identity through livelihood. Here we are emphasizing on two of their traditional techniques, the weaving techniques with raphi palm leaves and floating vegetation. It will create possibilities for the communities’ future development while building care and empathy towards nature and each other.

Three sets of programs, education, production and leisure are distributed in three different scales, neighborhood, inner neighborhood and the settlement scale. Whereas we imagine the Bollection-kiana or the common space in the neighborhood to be appropriated by the residents but all the other programs will formulates an interdependent network engaging the communities.

For the first phase we have selected the area located north of the island. The embankment is separating the settlement from the tidal flats in the north and there is a harbor in the middle. In connection to our overall strategies, we have identified the buildings which will be disassembled.
Boikhok-khans

Pranama, a 15 years old girl, is currently living in Bhurban char with her family. She helps her mother in her spare time to weave the baskets with myna palm leaves, just like they used to do when they were living in Myanmar. It’s one of the things that makes her feel connected to her roots. They have made this structure in their neighborhood which they call “boikhok-khans” means the living room. Here, they spend their leisure time with other families and sometimes she just goes to the upper floor to get some quiet time on her own.

The in-between

Karin (age 28), a young adult, is currently associated with the experimental floating vegetation model in Bhurban Char. They are trying to figure out an adaptive approach for growing vegetables in the water. It has helped him learn new techniques and collaborate with other farmers. He really enjoys his work since it also gives him the scope to be creative. Now he is becoming more self-reliant in his life and he is no longer dependent on the ration provided by the humanitarian organizations.
CHAPTER 6: PHASE 2 - EMPOWERING THROUGH COLLECTIVE KNOWLEDGE

In phase 2 the community will build a set of knowledge and skills, which will help them in the adaptation to the future changes such as education elsewhere due to sea level rise.

The programmatic set is transformed to the needs of the current phase. Thus, education is transformed into innovation through these core programs: civic center of innovations, design school and experimental platform for prototyping.

The zone in-area in phase 2 is located in the central part of the settlement. The context is densified and diversified through additional floors and a set of programs (innovation, production, leisure). The three core programs innovation center, design school and experimental platform for prototyping are parts of the urban system.
Civic center

Kairos, who is in the first phase, is working on experimental floating vegetation. In the second phase, he is participating in a workshop in the civic center. Their ideas can then be exhibited in the outdoor display space. Additionally, they have the opportunity to get consultancy from business schools and the research center on how to proceed with their project on vertical aquaculture units.

Design school

Fasia is studying in design school in phase 2. She is working in a weaving workshop in collaboration with some residents. They can go to the cyber cafe in order to develop a 3D model of their facade for a living unit. Whereas other students from the technical school would work on the platform with a guide for this new technique. Fasia can also use a 3D printer from the collective resource center to prototype the facade.
large share of land area of Bangladesh might be affected by sea-level rise by 2050. Considering the high density of Bangladesh land will be a scrutiny and most of the mainland will be heavily saturated with people. So, here we assume that relocation from Bhulbar Char will take place in multiple sites and we have identified one sample location, Hariya island to further explore the relocation scenario considering its proximity to Bhulbar char.

CHAPTER 7: PHASE 3 - COEXISTENCE WITH MORE THAN HUMAN COMMONS

One of the goals for the project is to increase preparedness. Hence, in this phase we considered the relocation process from the island before it gets entirely underwater with those cooperative steps which are distributed through the time.
APPENDIX

Booklet
Currently, there are around 7.8 billion people in the world, among them, 79.5 million people are displaced from their homes, 45.7 million people are internally displaced, and 26 million people are refugees (UNHCR, 2020). These numbers are just a mere reflection of the consequences of the increasing scale and frequency of natural disasters due to climate change and/or rooted in conflicts such as warfare, violence, human rights violations, and so on. Among the numerous ongoing cases from all around the world, we have decided to focus on one, the ethnic minority group called the Rohingya from Myanmar who are currently refugees in Bangladesh.

The Rohingya population has been migrating from Myanmar since 1977 due to the decades of systematic discrimination, statelessness, and targeted violence in the Rakhine State, Myanmar. Hence, they fled to Bangladesh due to the closeness of the borders of these two countries. However, in August 2017, the largest refugee influx took place, as their homes were burnt down, families were separated and killed and girls were gang-raped. As a result, an estimated 800,000 Rohingya fled into Cox’s Bazar and they got shelter in 34 extremely congested camps in Bangladesh (OCHA, 2019).

**Myanmar**

- 1800 British allowed local autonomy. Burmese government converts the Muslim population to Buddhism, expelling Muslims from British rule, combining Burma with the present-day Bangladesh and Pakistan

- 1948 After independence from British rule, Muslim rebellion engine in Rakhine State, with people demanding equal rights and an autonomous area.

- 1962 Military rule begins in Burma.

- 1977 Among 135 national ethnic groups, Rohingyas were excluded and tolerated their struggle. More than 200,000 Rohingyas fled to Bangladesh.

- 1989 Burauna annexed Myanmar. Military crackdowns, another 50,000 refugees flee to Bangladesh.

- 1992 The Myanmar and Bangladesh government agrees to repatriate refugees. Tens of thousands of people return to Myanmar over several years.

- 2014 Myanmar’s first phase in 20 years, the Rohingyas are still not included as an ethnic group.

- 2017 Horrific violence and terror targeting the Rohingya community. More than 750,000 Rohingyas flee Myanmar.

- 2021 Myanmar’s military seized power after detaining Aung San Suu Kyi and other elected leaders.

**Bangladesh**

- 1947 East Pakistan was formed as a part of the state of Pakistan. Following the end of British rule, combining Burma with the present-day Bangladesh and Pakistan

- 1971 Bangladesh became independent

- 1974 In Bangladesh, famine and flooding left an estimated 27,000 people dead this year

- 1982 Thirteen camps for the refugees were established. Separation took place due to economic and social factors

- 1987 Massive food inundated three-quarters of the country, killed over 3,000 people. Half a million were left homeless and 1,000 were killed after a cyclone hit Bangladesh

- 2004 Death toll rises above 1,500 due to flooding and stranded more than 30 million people

- 2007 Tropical Cyclone Sidr killed 424 people and left million hectares

- 2009 Cyclone AIKA destroyed thousands of houses, stranded tens of thousands of people in flooded villages and killed at least 197

- 2016 Cyclone Muna killed at least 17

- 2020 Cyclone Paul and Bulbul hit Bangladesh severe flooding displaced 800,000 people and inundated a third of the country

- 2019 Bangladesh started relocating Rohingyas refugees in a remote island, Bhasan char

Source: Timelines, 2020 and World Vision, 2020
Bhashan Char

Bangladesh is the largest delta in the world with population of 161.4 m people. The country on itself does not have enough infrastructure and resources to support everyone. Moreover, due to its location, lands are extremely vulnerable to the sea level rise. Consequently, by 2050 with 50 cm sea level rise Bangladesh might lose up to 11% of its already overpopulated land (Environmental Justice Foundation, 2020). It will affect approximately 15 million people directly. In this context, the area of focus for the Master’s Thesis will be the remote island Bhashan Char in Noakhali District, where Rohingya refugees are being relocated which we defined as “disappearing land”.

Remote site visit (refugee camp)

For the project we did a remote site visit to the camp-1 East in Cox’s Bazar with the help of architect Shimanto Goswami from Bangladesh, accompanied by Rizvi Hassan (IOM) and Khwaja Nuzhat Zerin Fazmi (ActionAid) who are currently working in the camps. It gave us better understanding of the living conditions and the lifestyle of the Rohingya refugees.
With our project, we are focusing on the Rohingya refugee issue. In 2017 thousands of people had to cross the borders of Myanmar due to mass genocide triggered by ethnic cleansing and around 800,000 of them flee to Bangladesh as refugees. Whereas, Bangladesh has 2 million informal settlers of its own known as internally displaced people (IDPs) who have been displaced due to extreme climatic conditions. So, we are dealing with the issue of how refugees can coexist in a country where there are already thousands homeless.

Currently, the government has built a settlement for 100,000 people on a newly emerged island, Bhashan Char in the Bay of Bengal. Thousands of Rohingya refugees are already being relocated there. However, with the predicted sea-level rise not only the island but the majority of the coastal area of Bangladesh might go underwater. Our project is an attempt to imagine a resilient community, where both refugees and Bangladeshi people will be able to coexist in Bhashan Char, build empathy for each other, and be connected with the surroundings. Simultaneously, be able to co-develop preparedness for future changes connected to sea-level rise using local potential.

Hence, the aim of our project is to establish conditions of co-existence for the refugees and IDPs of Bangladesh where they can co-create resilient communities in connection with the local context and the changing environment.
METHODS & TIMELINE

Research
1. Literature review
   - worldwide experience of refugee relocation
   - understanding co-creating principles
2. Interviews
   - architects and urban planners from the current refugee camps
3. Desktop study
   - social structure
   - settlement patterns
   - local resources (building materials etc.)
   - cultural conditions
   - ecological conditions

Analysis
1. Mapping
   - topographical conditions
   - density and social structure
   - distribution of services
   - location and distance to the surrounding land
2. Synthesis
   - systematization of the collected information
   - conclusions

Proposal
1. Drawing
   - producing comprehensive graphical representation of the project
2. Posters making
   - presentation
   - layout
   - panels

Design
1. Prototyping
   - testing different approaches to design
2. Strategies
   - defining main direction to approach the challenges
3. Concept
   - co-creation
   - temporality
   - designing for belonging
4. Toolbox
   - developing a system of design interventions
REFERENCE LITERATURE

Critical care: Architecture and Urbanism for a Broken Planet
A. Pitz, E. Krasny and A. Wenz

“Responding to the interconnectivity of economy, ecology and labor needs an interdisciplinary way of working that draws on strained knowledge and different ways of knowing, learning and sharing. There exist various diverse strategies and knowledge-based transformative practices which counteract exploitative and extractive models of the Anthropocene-Capitalocene condition.”

Diverse economies: performative practices for ‘other worlds’
J.K. Gibson-Graham

“The ‘formal’ economy, constituted through wage labour in capitalist enterprises is but the tip of a much larger iceberg, a plethora of alternative economies exist in the mostly submerged 90 per cent. The myriad of activities that are positioned as ‘other’ to capitalism the direct provisioning of care and well-being in households, communities and associations the non-material transactions of gift giving, reciprocity and sharing.”

The living room: Al-Madhafah
Sndhi Holil

“The living room dedicated to hospitality. It has the potential to subvert the role of guest and host and give a different socio-political meaning to the act of hospitality. It activates the right of temporary people to be a host and not to behave as external guests, the right to claim life in the new destination but without feeling obliged to revoke the desire to belong to the life back home.”

Co-Creation in Theory and Practice
C. Horvath and J. Carpenter

“Co-Creation, although it may pursue social justice and community engagement through different means, will always provoke agency, collaboration between participants and alternative visions taking into account different perspectives rather than inertia, separation and status quo.”
REFERENCE PROJECTS

**Solidarity in action**
- Brazil
- Responsibility sharing
- Solidarity

**Strategy for dispersal**
- Tanzania
- Strategic dispersal
- Communication strategy
- Strong partnership

**People's friendship is people's strength**
- The Republic of Belarus
- Integration from the moment of arrival
- Community-run business
- System of collaboration

**The importance of partnerships**
- Sierra Leone
- Inclusion of the major stakeholders in the decision-making process
- Self-reliance and active contribution
- System of consultations

*Images with captions:
- "Solidarity is the tenderness of the people."
- "Now we are a branch on a tree called Tanzania."
- "Nor refugees, just people."
- "Bode Sela" - we're all one family.*
REFERENCE PROJECTS

Arcadia education project
Location: Bangladesh
Architect: Saleh Ullah

The project adapts to the flood prone landscape with its innovative approach, where the building is segmented into simplistic modules, which can be used both during dry periods and floods. It used recycled tins & different varieties of bamboo in the area. The site is flooded about five months of the year, but conventional solutions like raising the land with sand or building on stilts were not compatible with its topography (Architectures, 2016).

Source: Architectures, 2016

Cyclone shelter
Architect: Kabirul Haque
Location: Bangladesh

The prototype was designed in response to the devastating cyclone in 2007, to save lives during disasters and also to serve the community by contributing to its education, health & safety. The inner part is protected with an external shell made which reduces the impact of cyclones and under normal weather, gives shade to the interior (Architectural review, 2019).

Source: Architectural review, 2019

Quinta Monroy social housing
Architect: Alejandro Aravena
Location: Iquique, Chile

Architect Aravena implemented the idea of “incremental housing.” In other words, instead of designing the whole house with a limited budget, he proposed to build half of each house providing minimal basic sanitary equipment. The rest of the houses were built and designed by people, bringing a character to each of them (ArchDaily, 2016).

Source: ArchDaily, 2016

Aloon Lar Shay Pha la women center
Architect: Khwaja Pami, Abid Rea A. Rahman
Location: Rohingya Refugee Camp, Ukhia

“The display centre offers a platform for the Rohingya women to create, showcase and sell handmade products to the visitors. The process of the making of the centre was focused more on the participation of the users and the outcomes than the usual top-down method” (Correspondent, 2015).

Source: Correspondent, 2015
1. Khawaja Nuzhat Zerin Fatmi (Architect, Product Designer at IOM - UN Migration)
   She is the architect for the project “Rohingya display and production center” which is located in the Rohingya Refugee Camp no – 11. At the time she was part of the team who were developing a website on the heritage, culture and lifestyle of Rohingya people. Most of the refugees want to go back to their homeland in a scenario where the violence and persecution has stopped.

2. Shegufa Newaz (Site Planning Associate at UNHCR, the UN Refugee Agency)
   Being a part of the urban planning team she shared her insights about the camps. They have inconsistent planning systems since there are several NGOs trying to address the current challenges but are lacking communication among each other. Currently in Cox’s Bazar the infrastructure is underdeveloped: lack of schools, public spaces, basic services, livelihood options. Other important issues are distraction of the natural reserve and waste management in the camps. Additionally vulnerable locals from the surrounding areas feel threatened due to the funding the refugees get.

3. Majhi (Rohingya refugee group leader)
   In a remotely documented interview he shared about their dense and congested lifestyle in the camps and how they manage to still engage in different livelihood practices like trading and repairing in spite of those activities being illegal.

4. Elahe Karimina (Architect and Urbanist leading on Urban Research and Spatial Practice at Theatrum Mundii)
   After formulating the overall concept we asked Elahe Karimina, who is also a course teacher in the “Contemporary Urban Theory” at KTH, for feedback on the direction we have taken in our research and design. It gave valuable insights into how to use design for empowering communities and shift focus towards infrastructural design to explore in our project.

UNCHR Operational Solutions and Transition Section (OSTS), The Benefits of Belonging: Local Integration options and opportunities for host country (S. Mallick, Y. Shimizu, & G. Kant, Eds.). UNCHR.
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