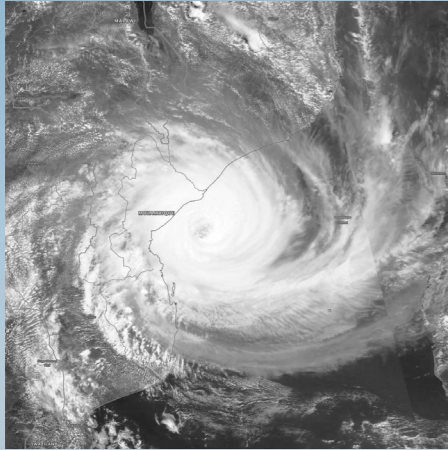


CHALLENGES AS OPPORTUNITIES



CYCLONE PRONE REGION



RAPID COASTAL EROSION



EXTREME FLOOD CONDITIONS



LONGER DRY SEASON



PEOPLE DISPLACED + RESETTLED



Country / City Beira, Mozambique
University / School Columbia University, Graduate School of Architecture, Planning and Preservation
Academic year 2020
Title of the project **STRATEGIES FOR RESILIENT RECOVERY IN BEIRA**
Authors Lino Cáceres, Stuti Ganatra, Jing Guo, Mansoo Han, Ritchie Ju, Alvi Rahman Kahn, Nina Lish, Xinyue Liu, Ashwin Nambiar, Jaime Palacios, Annie Wu, Joy You-Chiao Wu, Yile Xu, Yao Yao, Yi Zhang, Menghan Zhang, Ting Zhang, Wei Zhang, Chris Zheng



TECHNICAL DOSSIER

| | |
|---|--|
| Title of the project | STRATEGIES FOR RESILIENT RECOVERY IN BEIRA |
| Authors | Lino Cáceres, Stuti Ganatra, Scott Guo, Mansoo Han, Ritchie Ju, Alvi Rahman Kahn, Nina Lish, Xinyue Liu, Ashwin Nambiar, Jaime Palacios, Annie Wu, Joy You-Chiao Wu, Yile Xu, Yao Yao, Yi Zhang, Menghan Zhang, Ting Zhang, Wei Zhang, Chris Zheng |
| Title of the course | Urban Design Studio III - Global Cities and Climate Change - Water Urbanism: The Great Rift Valley, 2020 |
| Teaching Staff | Kate Orff, Lee Altman, Adriana Chavez, Dilip da Cunha, Fitsum Gelaye, Geeta Mehta, Thad Pawlowski, and Julia Watson |
| Department/Section/Program of belonging | M.S. Architecture and Urban Design |
| University/School | Columbia University, Graduate School of Architecture, Planning and Preservation |



Written statement, short description of the project in English, no more than 250 words

Beira is located in the delta of the Pungwe River, where it meets the Indian Ocean, with fertile lowlands of central Mozambique. Although Mozambique ranks among the lowest nations on the UN's Human Development index, it is rich in natural capital. The WWF for Nature has developed a Natural Capital Program to help protect coral reefs, seagrass beds, mangrove forests, and other ecologies along Mozambique's coastline.

Founded in 1887 as a port city, a few meters above sea level, it is currently the second largest seaport in Mozambique, after Maputo. The city has experienced rapid population growth escalating from 42,265 inhabitants in 1950 to 530,604 in 2019, with an expected increase of an additional 250,000 residents by 2030. (UN - World Population Prospects). Beira has experienced degradation of its natural capital, transforming the sand dune and its estuary, where the city was originally settled into a low-density, extended urban sprawl.

Cyclone Idai ravaged Beira in March 2019. It is the worst storm on record in Mozambique, with heavy rains and strong winds that led to flash flooding, hundreds of deaths, and massive destruction of property and crops. In Beira alone, 90 percent of the buildings were damaged.

In its aftermath, a major humanitarian crisis unfolded with hundreds of thousands of people displaced as central Mozambique was transformed into a vast inland lake. A year later, recovery is ongoing and food insecurity remains widespread. The studio projects investigate and propose strategies for a resilient recovery.

For further information

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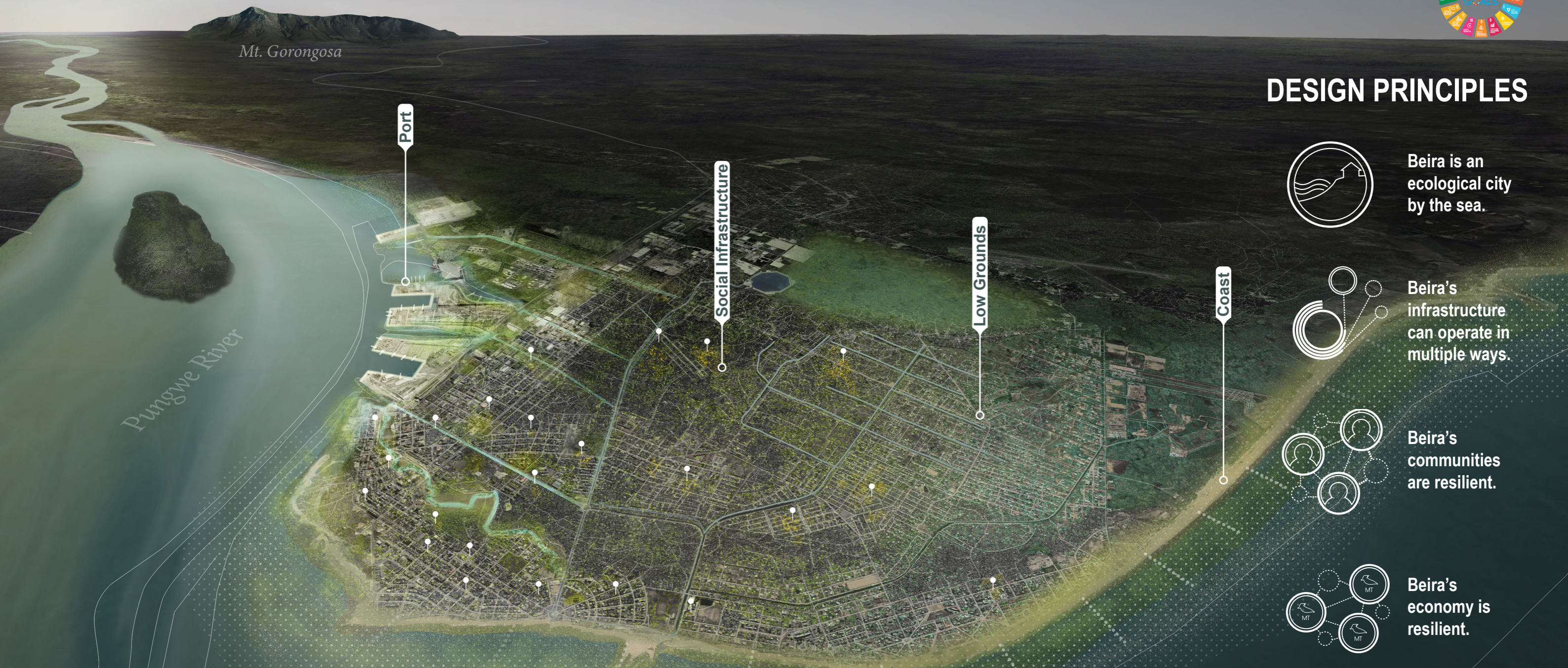
CLIMATE CHANGE AGAIN

11th International Biennial Landscape Barcelona

Barcelona September 2020

SCHOOL PRIZE

STRATEGIES FOR A RESILIENT RECOVERY



DESIGN PRINCIPLES



Beira is an ecological city by the sea.



Beira's infrastructure can operate in multiple ways.



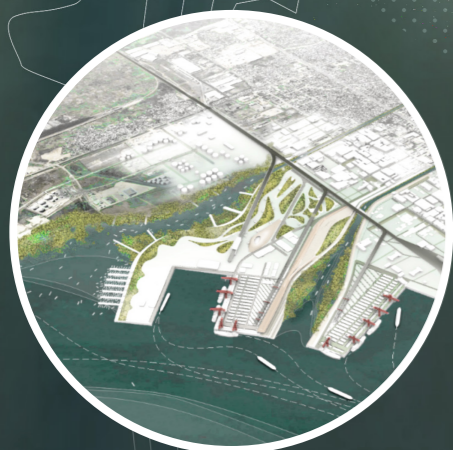
Beira's communities are resilient.



Beira's economy is resilient.



Beira is looking to the future.



Port Economy

Greening and Linking
Local and Global Opportunities



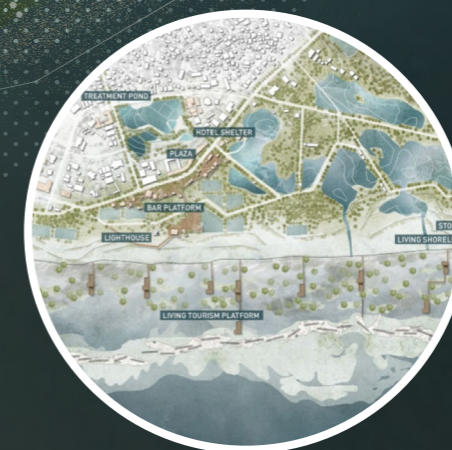
Social Infrastructure

Alliance for a Constructive Beira
Local materials for reconstruction



Low Grounds

Seeding the Machamba
Agro-based community recovery



Living Coastlines

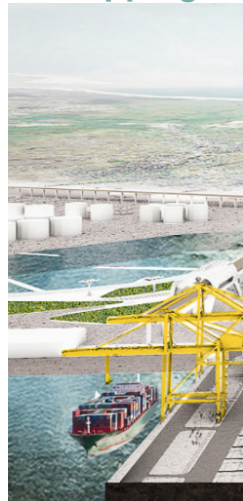
NGO led and nature based
Coastal restoration

Indian Ocean

COASTAL REGENERATION AND ECONOMIC DIVERSIFICATION



shipping



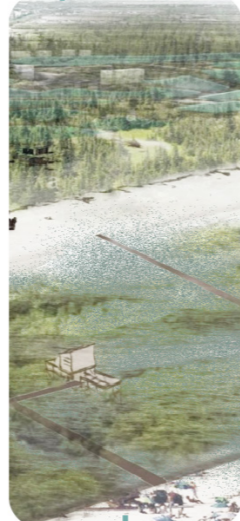
agriculture



micro-credits



aquaculture



Beira is rich in natural capital with diverse and productive ecosystems. The projects envision an adaptive coast that supports local economies and fosters nature based infrastructure. By tapping into existing connections between Beira and the global economy, the projects stimulate the local economy and improve the protective ecosystems.

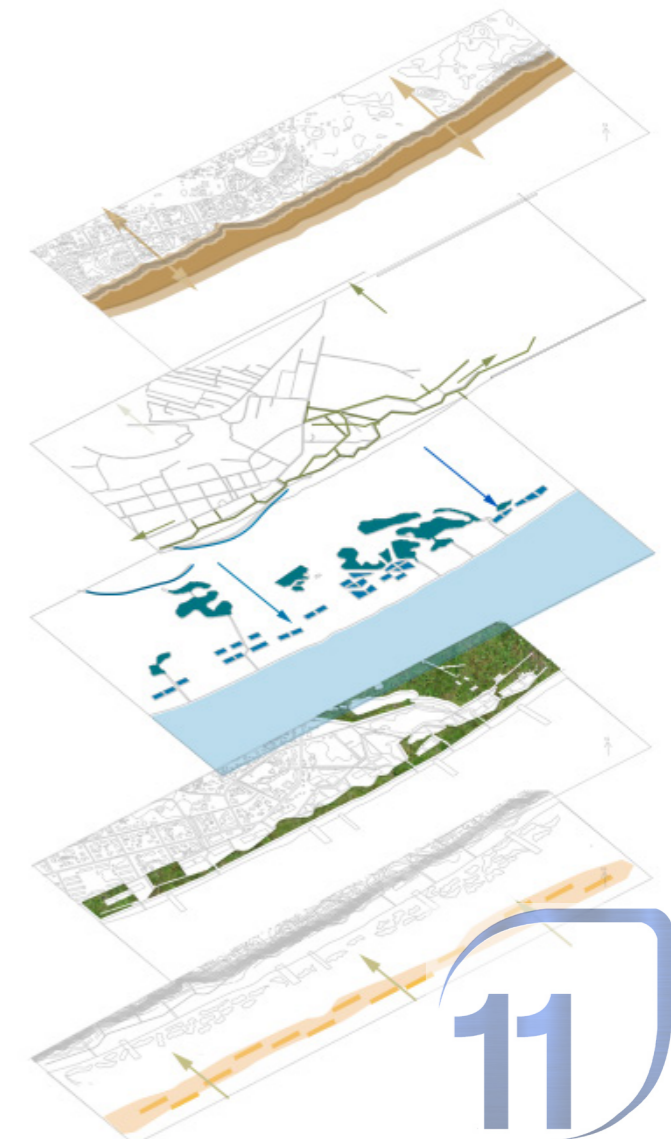
Dunes with sandcatchers

Increase resident and public access to the coast

Agriculture and aquaculture as economy

Sofala Natural Coastline Park with tourism

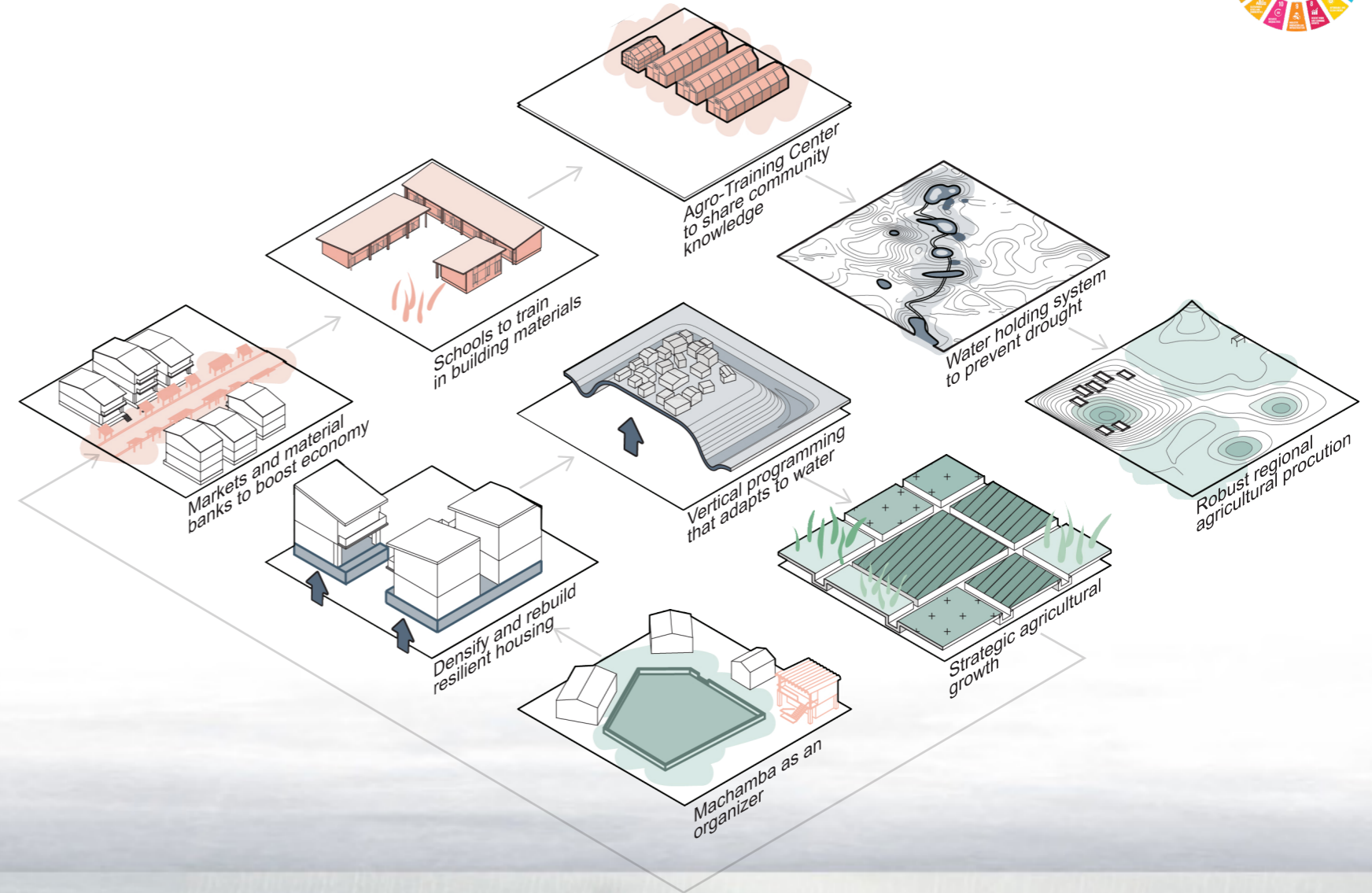
Mangroves, breakwater and sand accumulation



COMMUNITY LED AGRICULTURE AND RECONSTRUCTION



The Machamba is an agricultural garden where produce is cultivated by a family mainly for self-consumption. The communities all have an inherent social capital with local and regional resources. The projects catalyze self-sufficient agriculture and building reconstruction by seeding units of change that are secular and can grow together as a system.



REGIONAL FORESTS

