**PROJECT OVERVIEW**

This Aquaponics System is a circular system of aquaculture in which the waste produced by farmed fish supplies nutrients to the plants within the system and through a filtration system will purify the water. In a world where the effects of climate change are being felt more than ever before, research into alternative methodologies becomes critical. Harnessing the power of the ecosystem with a careful mix of component parts makes it so that by taking out only a specified percentage of the planted, insect or fish biomass, it will continue functioning by itself with only minimal adjustments. Our project proposes to work with low-income communities from the neighborhoods and favelas neighboring the Museum of Tomorrow so that with them we can develop the most low-cost method with the cheapest materials that can be used in the most challenging conditions. This ongoing study will enable us to optimize the methodology and the structure so that we can then launch this project in an open-source way across the globe.

**PROJECT PROCESS**

We focus on three main areas: species identification, differentiation and testing of species of non-traditional food plants from the savannahs and the Amazon, as well as insects that are the most high-protein, and most efficient and robust; modularly prototyping modular structures for food production that are optimal for a number of small spaces, optimizing the aquaponics system: adaptation of the system to urban challenges as well as automating the system.

**PROJECT IMPACT**

Our goal with this project is to empower people with the knowledge, the tools and the processes so that they can adopt a holistic thinking to developing Food Farms so that people can reinterpret and reinvent the alternative food systems based on the particular needs of each city, each home and each body.

**PROJECT OUTCOMES**

Practical workshops around ecosystemic thinking, urban farming and replicating content. We will also make the content open source so that others can modify and remix the solutions for other low-income communities around the world.

**PROJECT TAKEAWAY**

The most important part of this project is the lessons we learn through transdisciplinary team prototyping sessions. Workshops will not be a one-way desolation of knowledge; rather we will develop a methodology whereby we can use creative approaches from the participants to make the prototype more robust, more modular and more adaptable to many different circumstances.
LOCAL CHALLENGE PROJECT 2020: Accelerating the SDGs
BIOME SMART FARM: AQUAPONIC SHELTER FOR TOMORROW. RIO DE JANEIRO, BRAZIL.

Community or other engagement
The Museum of Tomorrow has been supporting this project for over 8 months. This culminated in the Exhibition “What’s on Your Plate - Circular Food Systems”. As we continue this research, we are adding different modules to the system. We are also working with the National Institute of Technology on Spiral research (a modular component of alternative protein to the system) and are also working with representatives of ASMQAC - Brazilian Association of Insect Farmers (another modular component of this system).

Tomorrow’s Neighbours - Even before its inauguration the Community Facilities area of the Museum of Tomorrow developed initiatives to interact with its future neighbours (those living near the Museum). Today the program has registered 3,000 low-income people as Neighbours of the Museum, with their special card, they (and their families) have access to the Museum for free anytime.

Urban Food Garden - a partnership between NOZ (the Friends of the Museum of Tomorrow), the Altitude Project (consisting of the Organic Club and Casa) and the Museum of Tomorrow, the Urban Food Garden of Tomorrow is a pedagogical tool for environmental education activities, understanding new modes of production and consumption and access to a healthy and quality food. This project is also a space for collaboration, exchange of knowledge and a meeting place to find like-minded people.

Through free monthly workshops for training in the creation of Urban Food Gardens, people will be empowered to grow their own food.