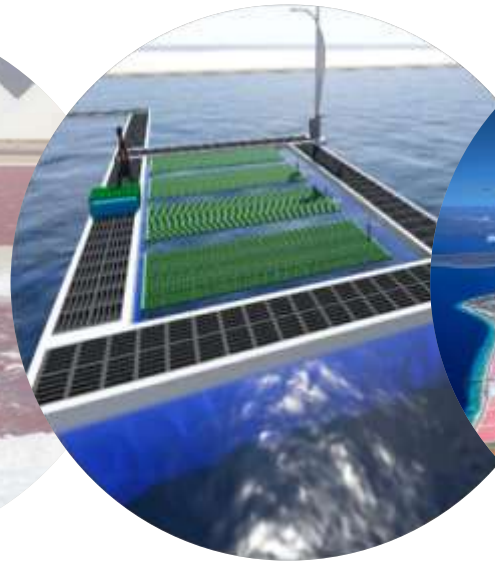


# AlgaePARC Bonaire

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# Objectives AlgaePARC Bonaire

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- Develop new economic activities (diversification)
- Roadmap for sustainable production of algal products for food, feed, chemicals and fuels
- Develop human capital and infrastructure
- To attract companies investing in production technology

# Based on the use of local resources

- Development of a stand-alone algae production facility
  - Use of sunlight, seawater, CO<sub>2</sub>, and nutrients
  - To produce aquafeed, food, chemicals, biokerosine



# Products with algae inside

- Biomass
  - Nutraceuticals
  - Fish feed
- Fine chemicals (DHA, EPA)
- Pigments
- Fertiliser
- Protein
- Oil



# AlgaePARC Bonaire and biofuels

- Imagine
  - 4000 ha salt pans
  - 100 tonnes algae/ha/year
  - 33 tonnes biofuel/ha/year: 132.000 tonnes/year
  - Dream: 50 tonnes biofuels/ha/year: 200.000 tonnes/jaar
  - TUI uses 200.000 tonnes kerosene per year
  - 2136 return flights to Bonaire
- Sustainable
  - Respect nature
  - Involve tourism
  - Involve environmental organizations
  - Model for other islands



# AlgaePARC Bonaire and aquafeed

- Imagine

- 4000 ha salinas
- 100 ton algae/ha/year
- 400,000 tons of algae/year
- 25% of global need for fishmeal for salmon



- Economic benefit

- Make use of local resources
- Diversification of the economy
- Education
- Create jobs
- Stimulate investments

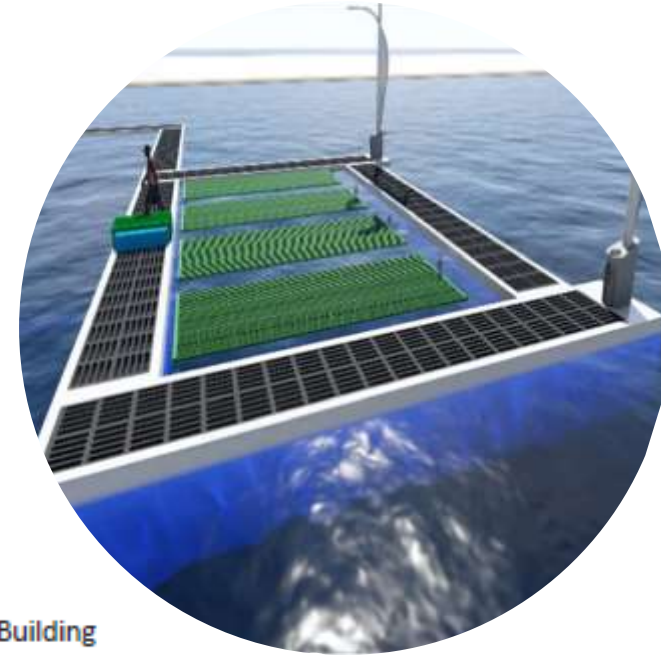
# Floating bioreactors



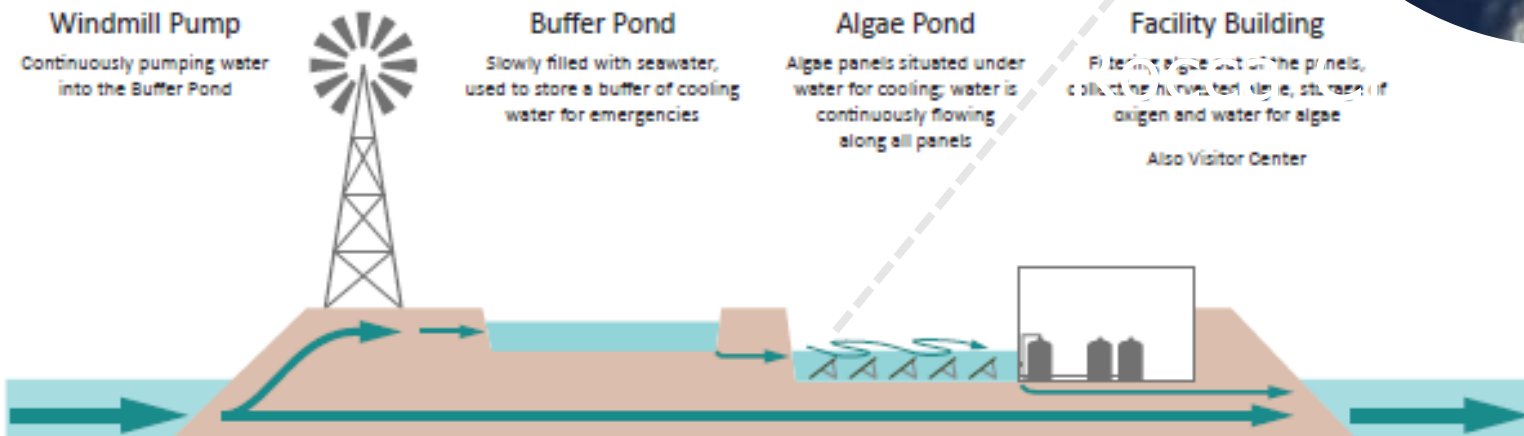
Rocca Chin-On

## Proof of principle of a floating photobioreactor placed in salt basins

- Design (Floating, geometry)
- Temperature management in the reactor
- Seawater exchange rate in the basins



## Process modeling : Productivity estimations



# AlgaePARC Bonaire

- Island as a symbol for stand-alone production: use of local resources
- Sun, sea, constant climate
- Economic diversity
- Applicable to other locations





# Time plan

- **2017-2018:** Feasibility study: cost estimation and business cases (OCTA, TUIfly, TKI and OL Bonaire)
- **2017-2021:** NWO research project: temperature tolerant microalgae in floating production systems
- **2018-2021:** Laboratory facilities; pending
- **2019-2024:** Stand-alone microalgae production (project applications)
- **2019-2025:** Development of critical mass (10 fte): widen the research program across the entire production chain, involve industry and to realize pilot and demonstration facilities