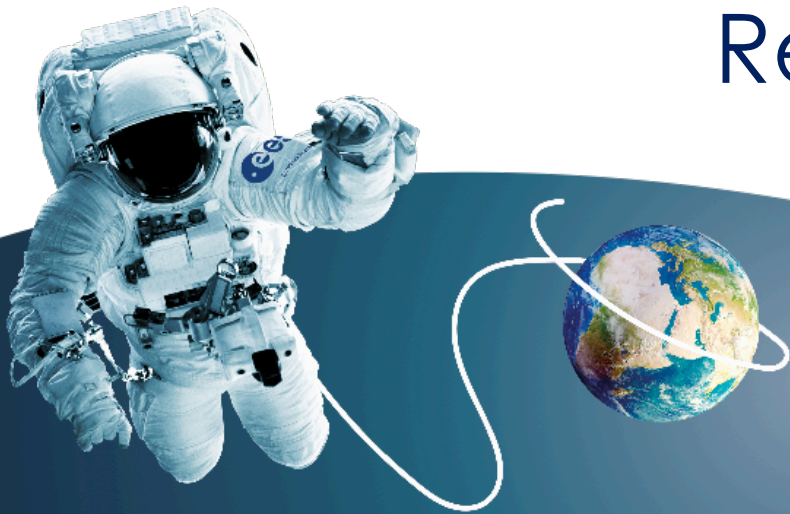




# Mission to Mars inspires food project in the Democratic Republic of the Congo

Felice Mastroleo  
SCK CEN (Belgium)



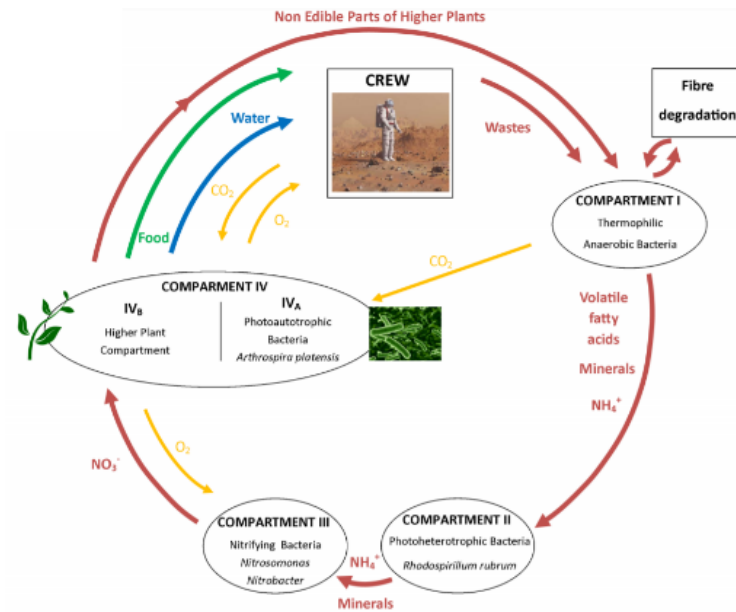
sck:cen





# The MELISSA project

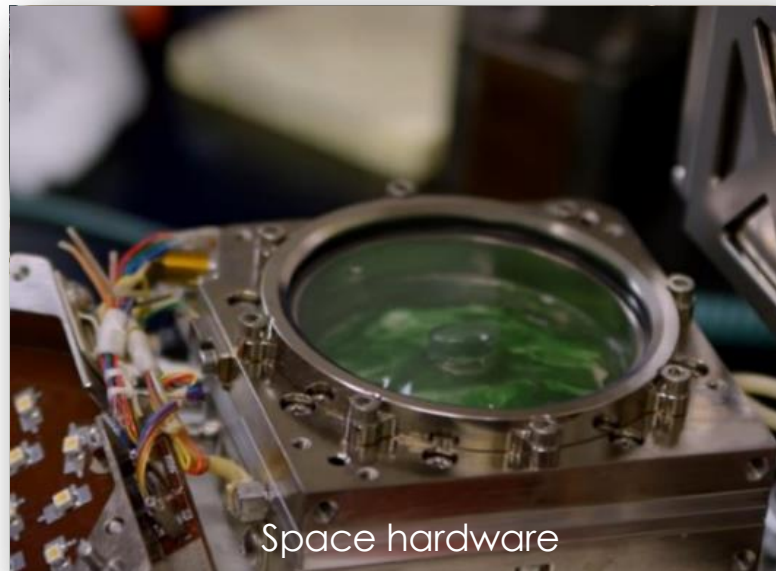
- SCK CEN (Max Mergeay) co-founder (1988)





# Implementing space flight experiments for almost 20 years

- First ever spirulina photobioreactor running in space



Space hardware

Wednesday 4th  
9am – Room 2  
Natalie Leys

[http://www.esa.int/Science\\_Exploration/Human\\_and\\_Robotic\\_Exploration/Research/Green\\_smoothies\\_in\\_space](http://www.esa.int/Science_Exploration/Human_and_Robotic_Exploration/Research/Green_smoothies_in_space)

sck: cen





# The INSPIRATION project

## How it started

- Since 2014, SCK CEN is committed to *Entrepreneurs for Entrepreneurs* (a.k.a. OvO)
- SCK CEN internal call for project and selection of the **INT**roduction of **SPIR**ulina in equatorial **Africa** **T**o **Im**prove **LO**cal **N**utrition (INSPIRATION) project
  - Spirulina @ home

<https://www.sckcen.be/en/inspiration-sck-cens-sustainable-commitment-south>





# The INSPIRATION project

## How it started

Test pond (June 2016)



Charity events (2016-2018)





# Mission to Congo (Jul. 2016)





# Mission to Congo (Jul. 2016)



Mbandaka (DR Congo)





# Collaboration with UPN (Kinshasa)







# First Spirulina growth tests

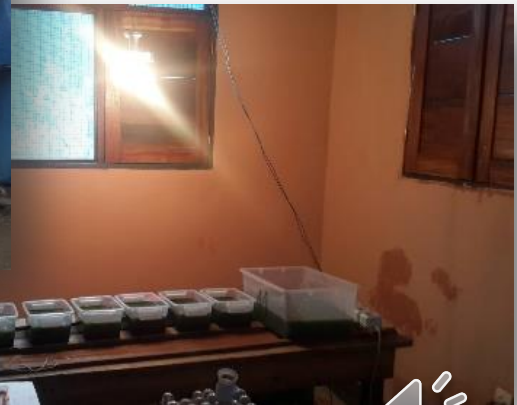
- Denis Bwabwa (Faculty of Agriculture and Zootechnics)(Jul. 2017 - Feb. 2018)





# First Spirulina growth tests

- Denis Bwabwa (Faculty of Agriculture and Zootechnics) (Feb. 2019)





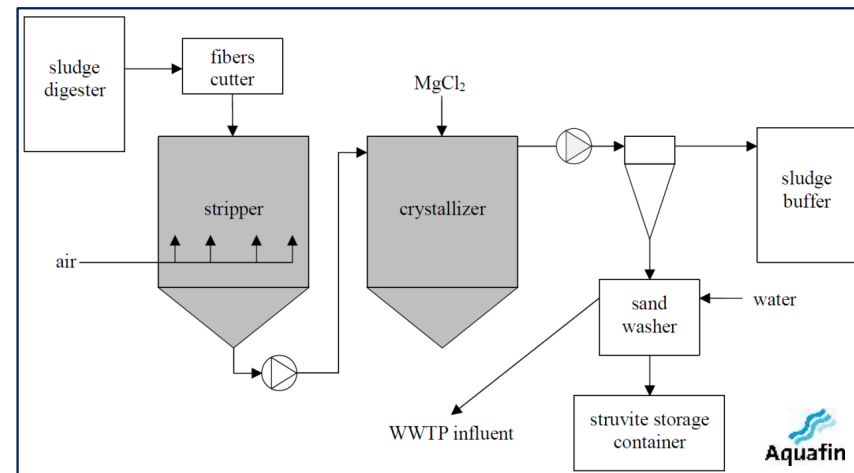
# Training @SCK CEN (May-Jul. 2019)





## Training @SCK CEN (May-Jul. 2019)

- To grow *Spirulina* with **struvite** as alternative nutrient source
  - $\text{MgNH}_4\text{PO}_4 \cdot 6\text{H}_2\text{O}$
  - 50-80 euros/t
  - “End-of-waste” status
- Successful growth with:
  - 0.6g/L struvite +  $\text{NaHCO}_3$
  - +  $\text{FeSO}_4$  +  $\text{NaCl}$  + Green Tea





# Back to DR Congo: Public outreach



Clinique des plantes (August, 2019)





# Back to DR Congo: Public outreach



Journée scientifique de l'UPN (Jan. 2020)



# Current work



August 2020





# Perspectives



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# MELISSA



MICRO-ECOLOGICAL  
LIFE SUPPORT SYSTEM  
ALTERNATIVE

## THANK YOU.

Felice Mastroleo

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