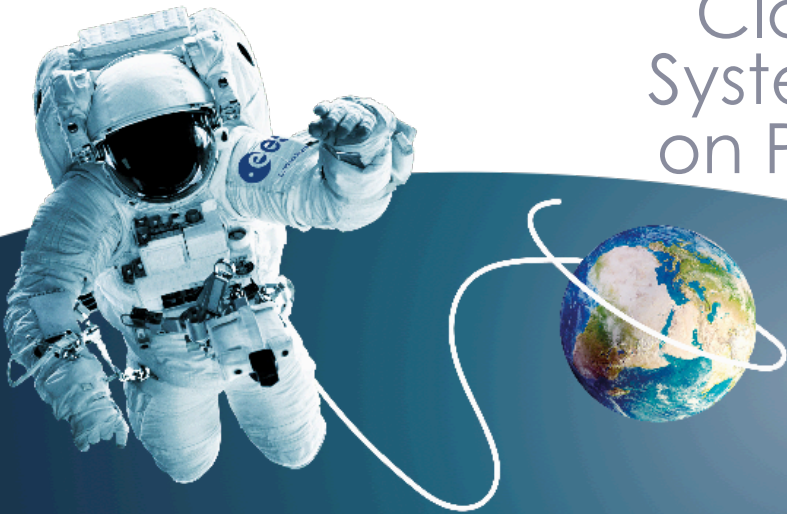




SpaceBakery

Closed Ecological Plant Cultivation System and Bakery for extended stays on Planet Mars and their applications for Planet Earth



Take a step into the Future

MISSION TO MARS
SpaceBakery



CONSUMERS CARE ABOUT THE PLANET

Look for **sustainably-produced products**
(that respect the environment)

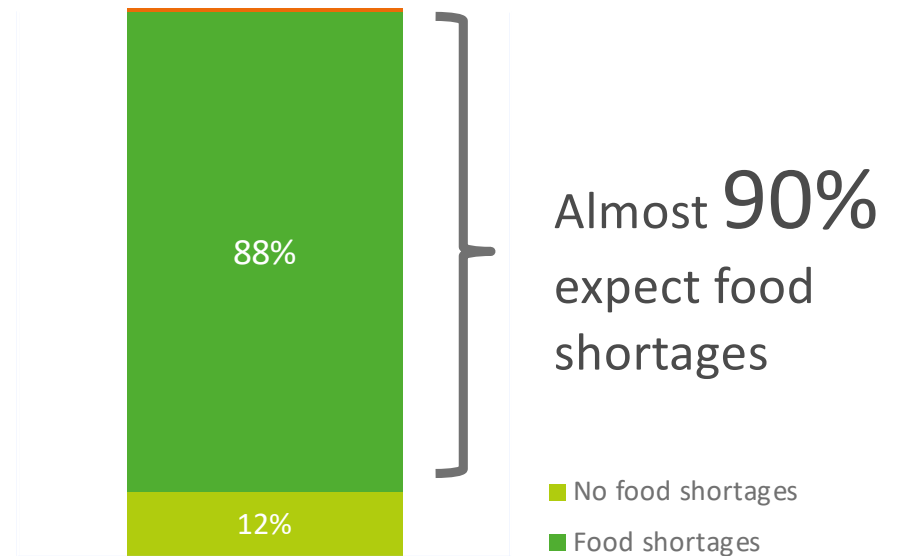
56%

Buy **locally-produced food** on
a weekly basis

40%



CONSUMERS WORRY HOW WE WILL FEED THE GROWING POPULATION





“The Mars research program aims to bring innovations that meet new consumer demands”



INVESTIGATING HOW TO PRODUCE BREAD ON MARS, REQUIRES US TO :



Limit water use



Minimize energy requirements



Produce crops independent of agricultural land



Develop well balanced, highly nutritional finished goods



Recycle waste streams to produce fertilizers or other circular products



Implement sensor technologies to monitor and steer processes remotely



Evaluate (energy) efficient baking technologies



At Puratos we are committed to the next generation and a reliable partner in innovation for our customers on **EARTH AND BEYOND**

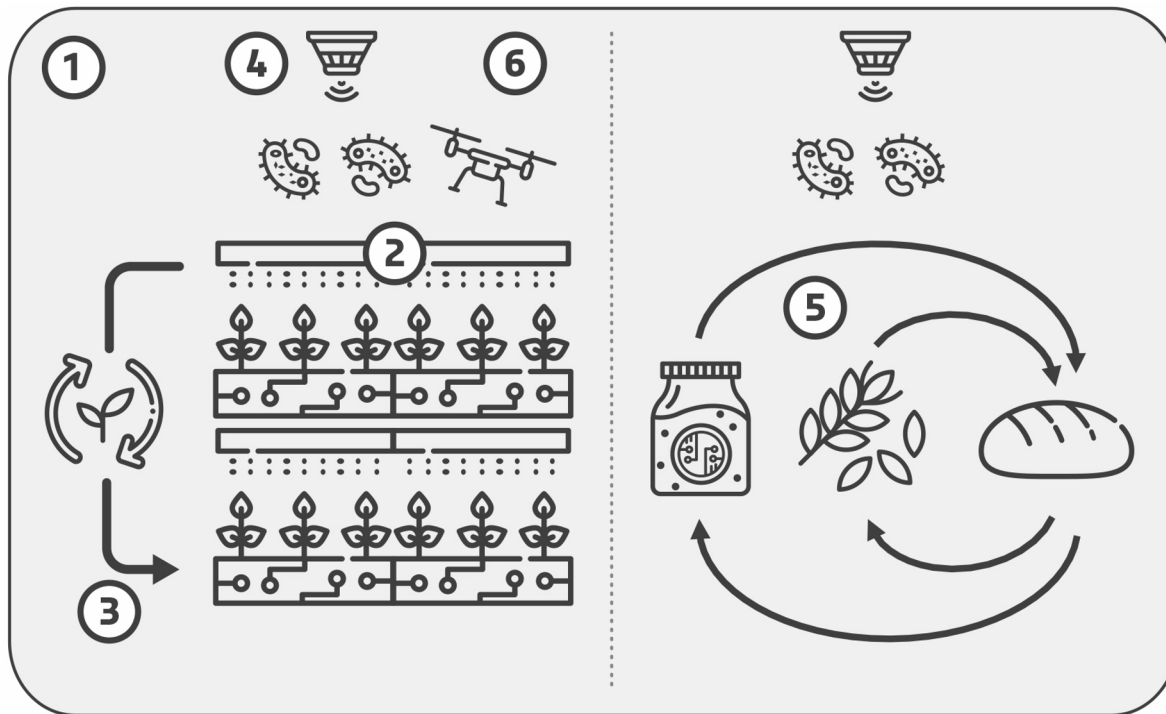
There for we launched the **SpaceBakery project** : A **Belgian consortium** of universities, research institutions and start-up companies





SpaceBakery

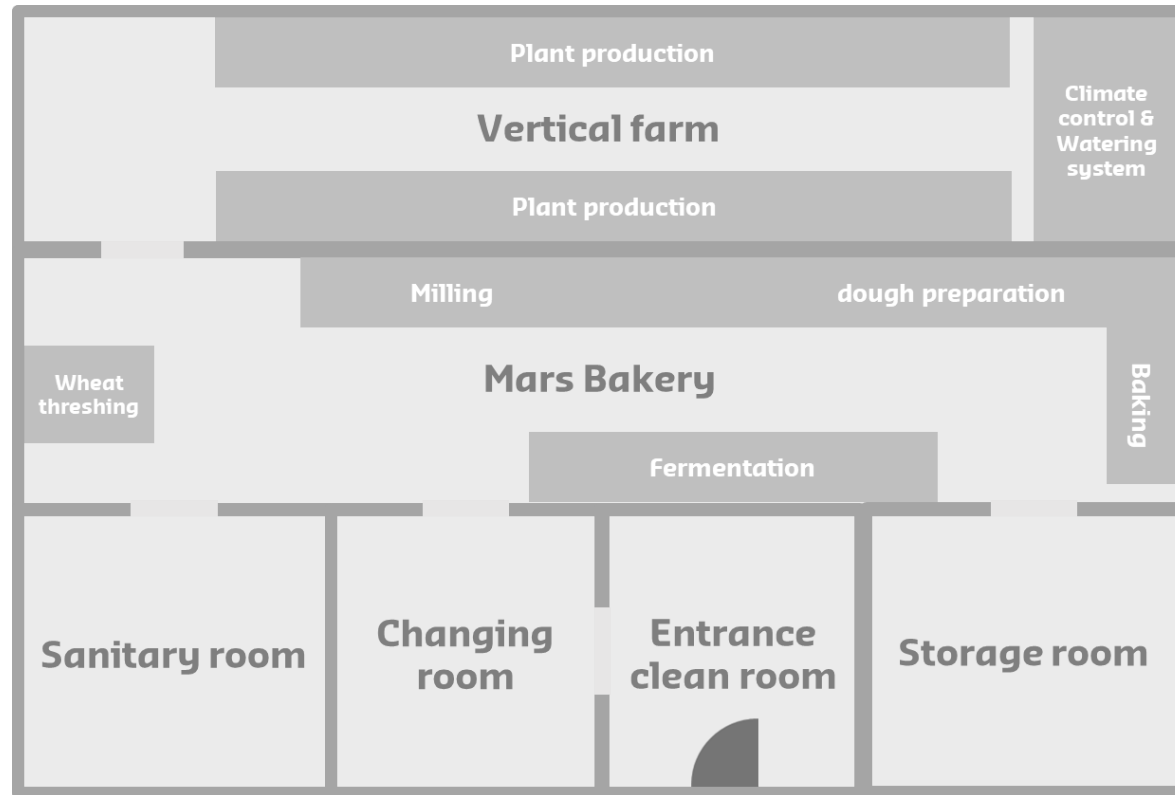
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Clusters for Growth



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Mission to Mars - SpaceBakery

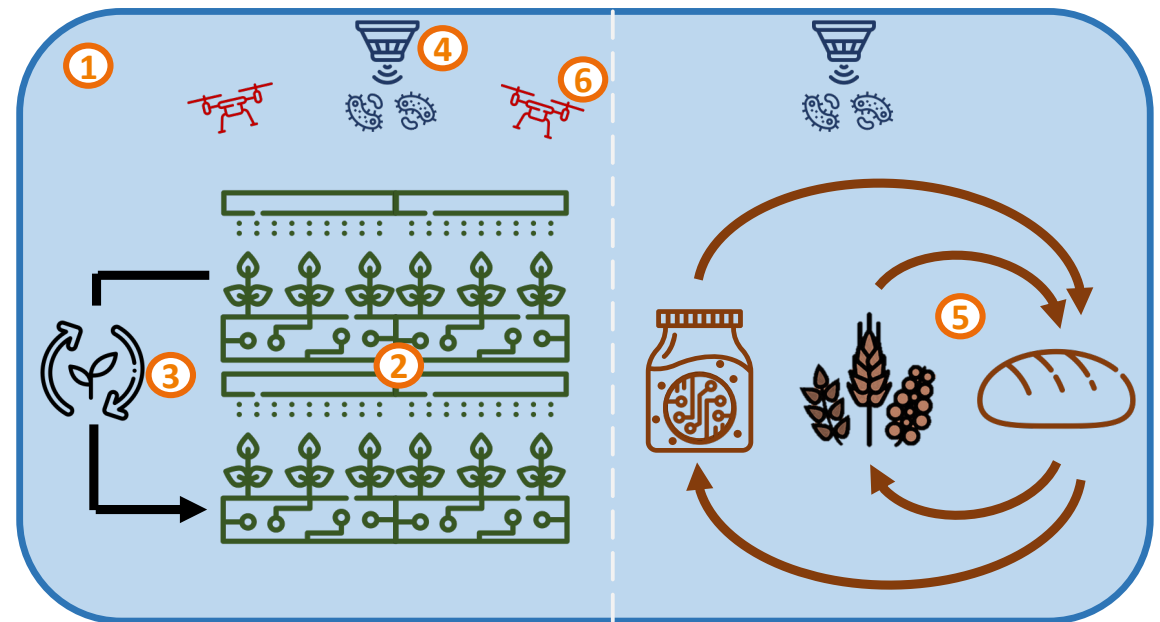


Closed and self-sustainable modular system which is independent from agricultural land and climate, with optimal use of resources

1. Hardware – closed production system
2. Efficient crop production
3. Use and recycling of resources
4. Monitoring of microbial climate
5. Healthy and nutritional staple food

Preparing for next phase:

6. Pollination within closed system





Mission to Mars - SpaceBakery



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Courtesy of Prof. dr. ir. Katy Steppe





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courtesy of dr. ir. Ali Md Muntasir

sck: cen



Mission to Mars - SpaceBakery



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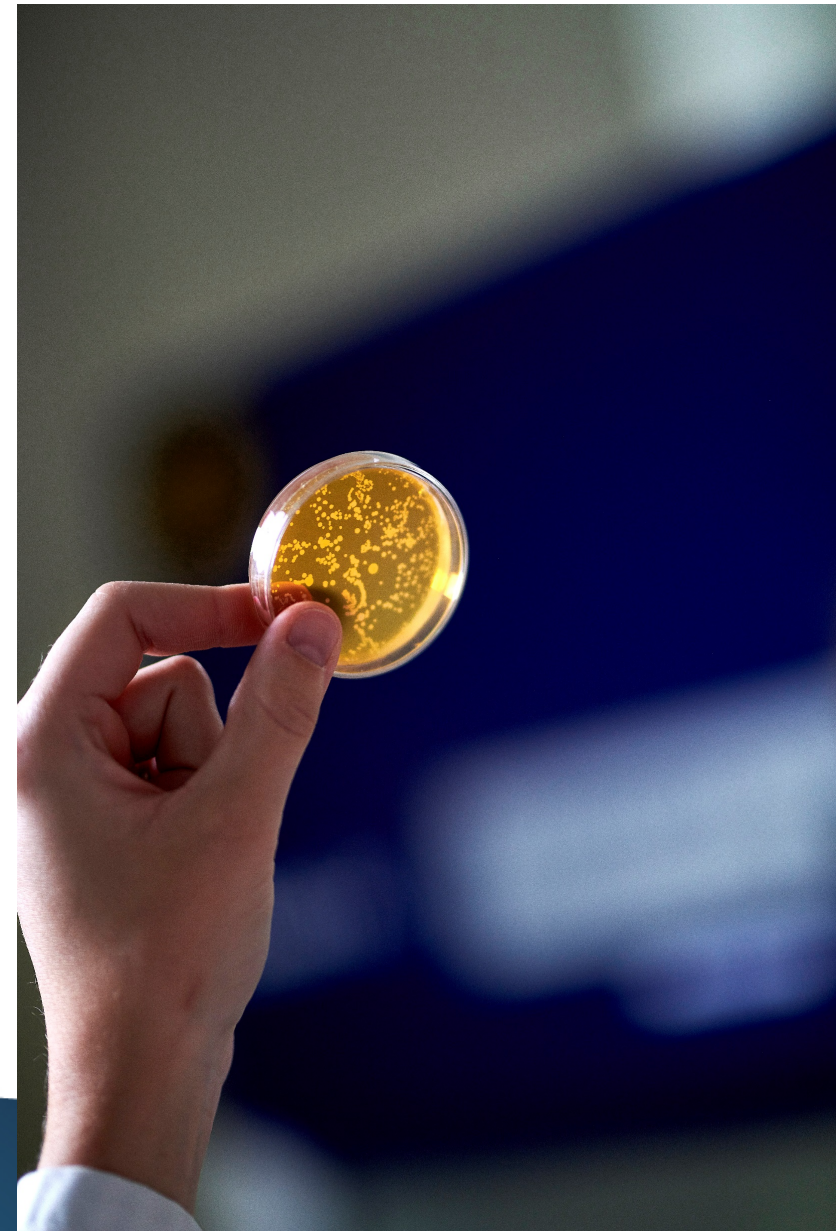
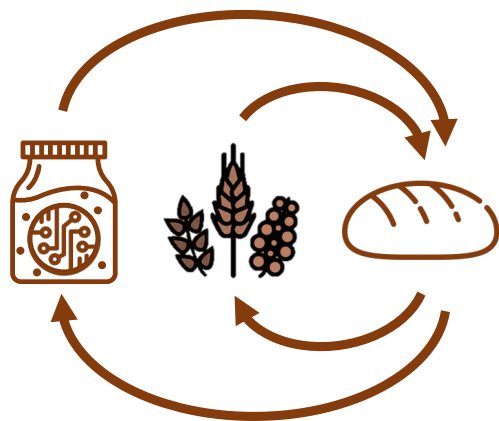


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Mission to Mars SpaceBakery

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Mission to Mars - SpaceBakery



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Preparing for next phase:

6. **Pollination within closed system**



Magics



Mission to Mars : SpaceBakery
Because we are committed to you
and to future generations!

MELISSA



MICRO-ECOLOGICAL
LIFE SUPPORT SYSTEM
ALTERNATIVE

The partners:

- Lucie Beckers, Filip Arnaut, Bram Pareyt (**Puratos**)
- Natalie Leys, Nele Horemans, Rob Van Houdt, Eline Saenen,
Ali Muntasir (**SCK.CEN**)
- Maarten Vandecruys, Oscar Navarrete
(**Urban Crop Solutions**)
- Ying Cao, Jens Verbeeck, Hagen Marien (**Magics**)
- Kathy Steppe, Jonas Coussement, Simon Lauwers
(**Ghent University**)
- Ann Cuypers, Dries Vandamme, Kris Kunnen
(**Hasselt University**)
- Timothy Lefeber (**Flanders'FOOD**)

THANK YOU.

Lucie Beckers

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IN COOPERATION WITH

