



Community Talks, October 2025.

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Introduction

- ✓ In 2022, **2.1 billion** people still relied on polluting fuels as cooking energy.

Problems

- ✓ Deforestation & Soil degradation
- ✓ Climate change (global warming)
- ✓ Indoor air pollution - yearly, **1.6 million** deaths
 - ❖ High-risk group - women and children

Solution

- ✓ Renewable Solar energy



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Project description

Objectives:

- ✓ Determination of the factors that influencing the performance of solar cookers.
- ✓ Comparing the performances of the prototypes (Locally made vs Commercial)

Methods:

- ✓ Survival analysis to measure the specific time for the prototype to reach a predefined temperature threshold.
- ✓ Linear mixed models to study the association between observation under the same experimental conditions.

Results:

- ✓ Plastic bags and Irradiation had positive impact on the performance



Project impact: DSI

- ✓ Expanding research window.
 - ❖ Modification of the protocols
 - ❖ Expansion of the proposed methods (LMM)
 - ❖ Implementing new methods (Survival analysis)
 - ❖ Developing new prototypes (Hybrid + Prototypes 7LB)
 - ❖ Use of automated measuring station



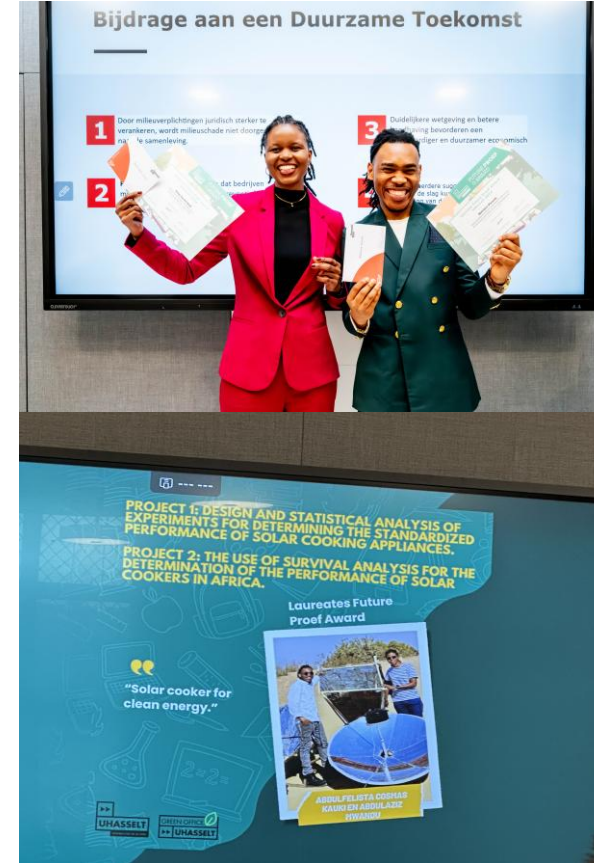
Project impact: Community

- ✓ Knowledge transfer (R workshop)
- ✓ Educating communities about solar cookers to raise awareness on environmental conservation.



Professional impact

- ✓ Working in a multidisciplinary team
- ✓ Future Proef Awards 2025
 - ❖ First position laureates at the University of Hasselt
 - ❖ The top six best thesis that contributed to sustainability in Flemish



Sustainability contribution

- ✓ Promotes the use of Renewable Solar Energy.
- ✓ Achieved key SDGs
 - ❖ Good health and well-being
 - ❖ Gender equality
 - ❖ Affordable and clean energy
 - ❖ Climate action
 - ❖ Life on land
 - ❖ Partnership for the goals



Sustainable future



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