

SMART & MODULAR VERMIPONICS

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Interim presentation

OUR TEAM

International & multidisciplinary



Anita Mendes

Biomedical engineering



Fien Joos

Product development



Jakub Wycka

Mechanical Engineering & Applied
Computer Science



Kris Petrevski

Information & Communication Sciences
for Business and Management



Victoria Tatic

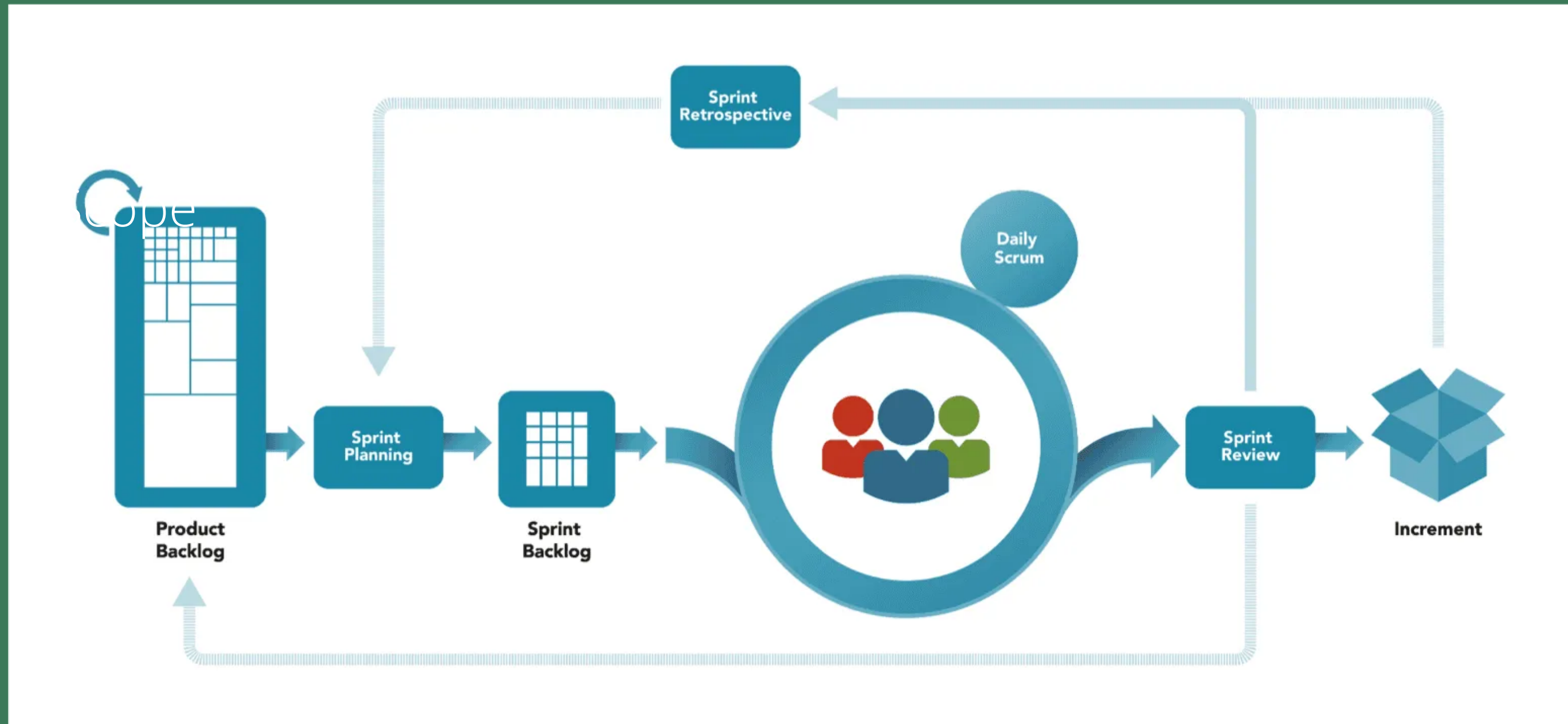
Industrial design

WHAT PROBLEM WILL WE TACKLE?

→ How to ensure that a growing global population will be able to meet its nutritional needs?



PROJECT MANAGEMENT



MARKETING PLAN

Product SWOT Analysis

<p>Strengths</p> <ul style="list-style-type: none">• Requires less capital compared to other farming production practices• Requires less inputs to sustain• Does not need alot of land space to start such practice• Recycles biodegradable waste materials from farm or household	<p>S</p>	<p>Weaknesses</p> <ul style="list-style-type: none">• At initial level its use increases the cost of production• Less awareness among the people• Organic certifications is very costly• Publicity by government agencies is not effective	<p>W</p>
<p>Opportunities</p> <ul style="list-style-type: none">• Such practice can be used as additional source of income in animal and crop production• Legitimate support by the government to the farmers to start this unit• People are more concerned about their health so they want to consume organic food	<p>O</p>	<p>Threats</p> <ul style="list-style-type: none">• Natural enemies of the earth worm may lessen its population• 90% farmers are using chemical fertilizers• International agencies for organic certifications has made strict normas which are very difficult to meet out for the farmers of developing country like India	<p>T</p>

→ **Food waste composting**
Solving the food waste problem

→ **Green materials**
Recyclable and durable materials
Using less material

→ **Minimise negative environmental impacts**
Less energy consumption
Improved recyclability
Easily stored and transported

→ **Rainwater system**
Collecting water for later use

ECO-EFFICIENCY MEASURES FOR SUSTAINABILITY

Solutions to ensure a successful product launch



ETHICAL AND DEONTOLOGICAL CONCERNS

Engineering Ethics

Duties of the engineer

- for the community
- for the employer and the client
- when working

Reciprocal duties

Sales and Marketing Ethics

- The Do's
- The Dont's

Environmental Ethics

- Green-washing
- Sustainability
- Green marketing

Liability

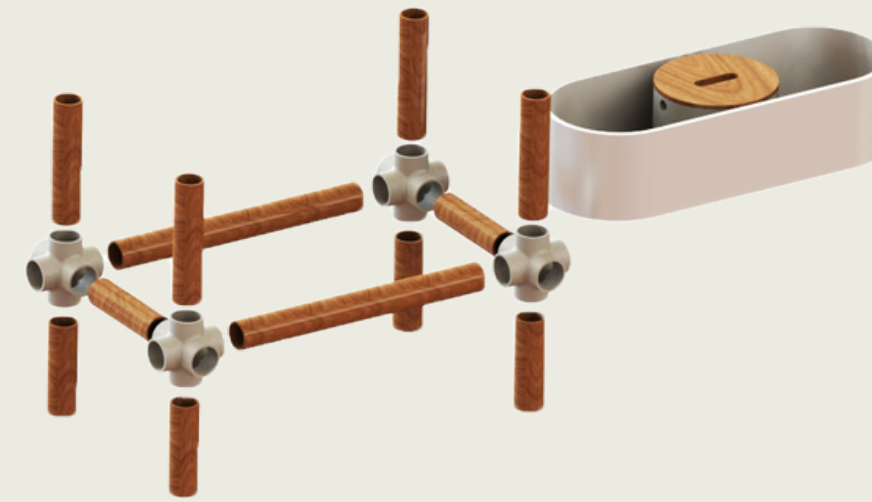
EU Directives:

- Machine Directive
- **Electromagnetic Compatibility (EMC) Directive**
- Low Voltage Directive (LVD)
- **Radio Equipment Directive (RED)**
- Restriction of Hazardous Substances (ROHS) in Electrical and Electronic Equipment Directive

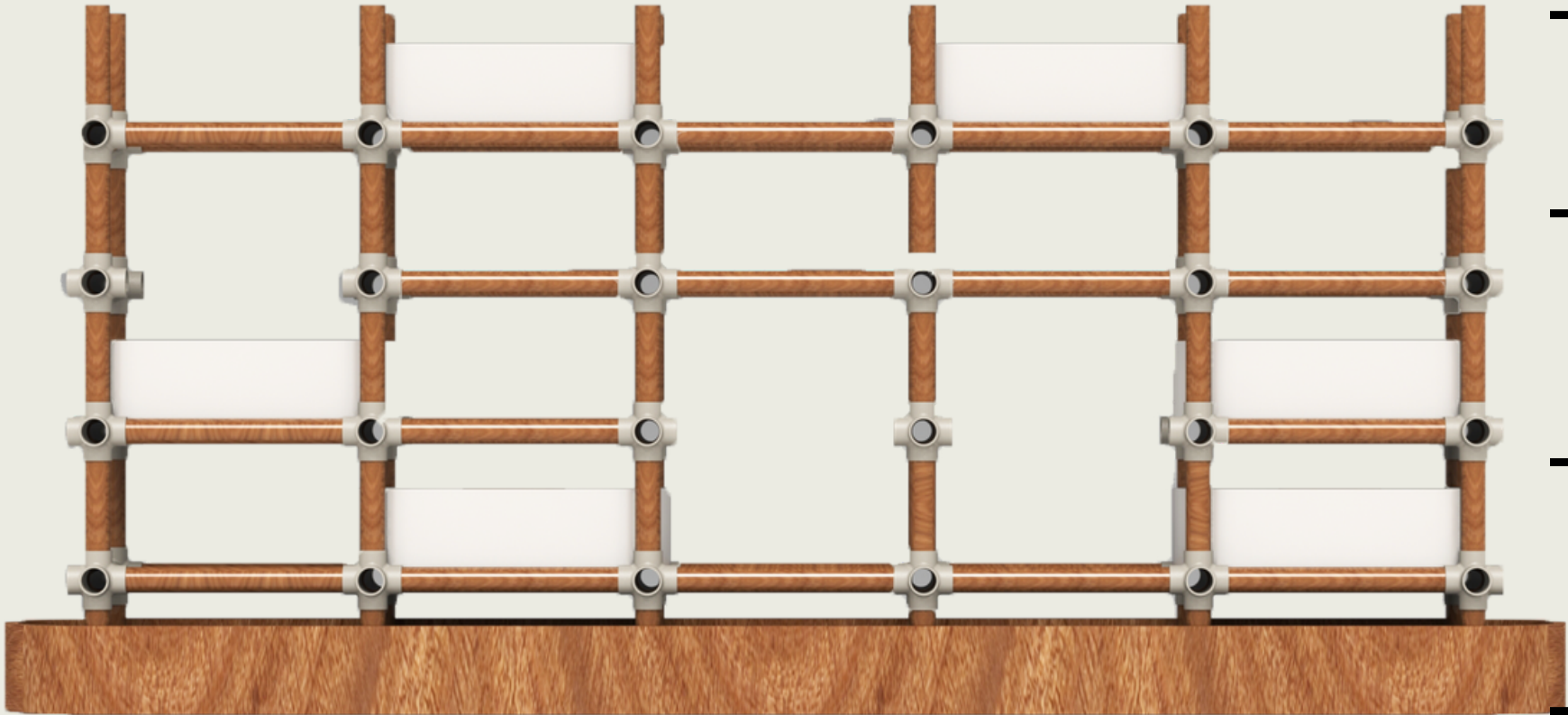
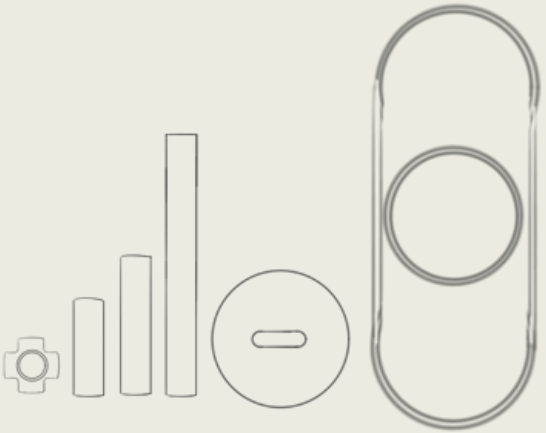
Summary

- Efficiency
- Sustainable materials
- Suppliers
- Truthful
- Environmental consciousness

PRODUCT DEVELOPMENT

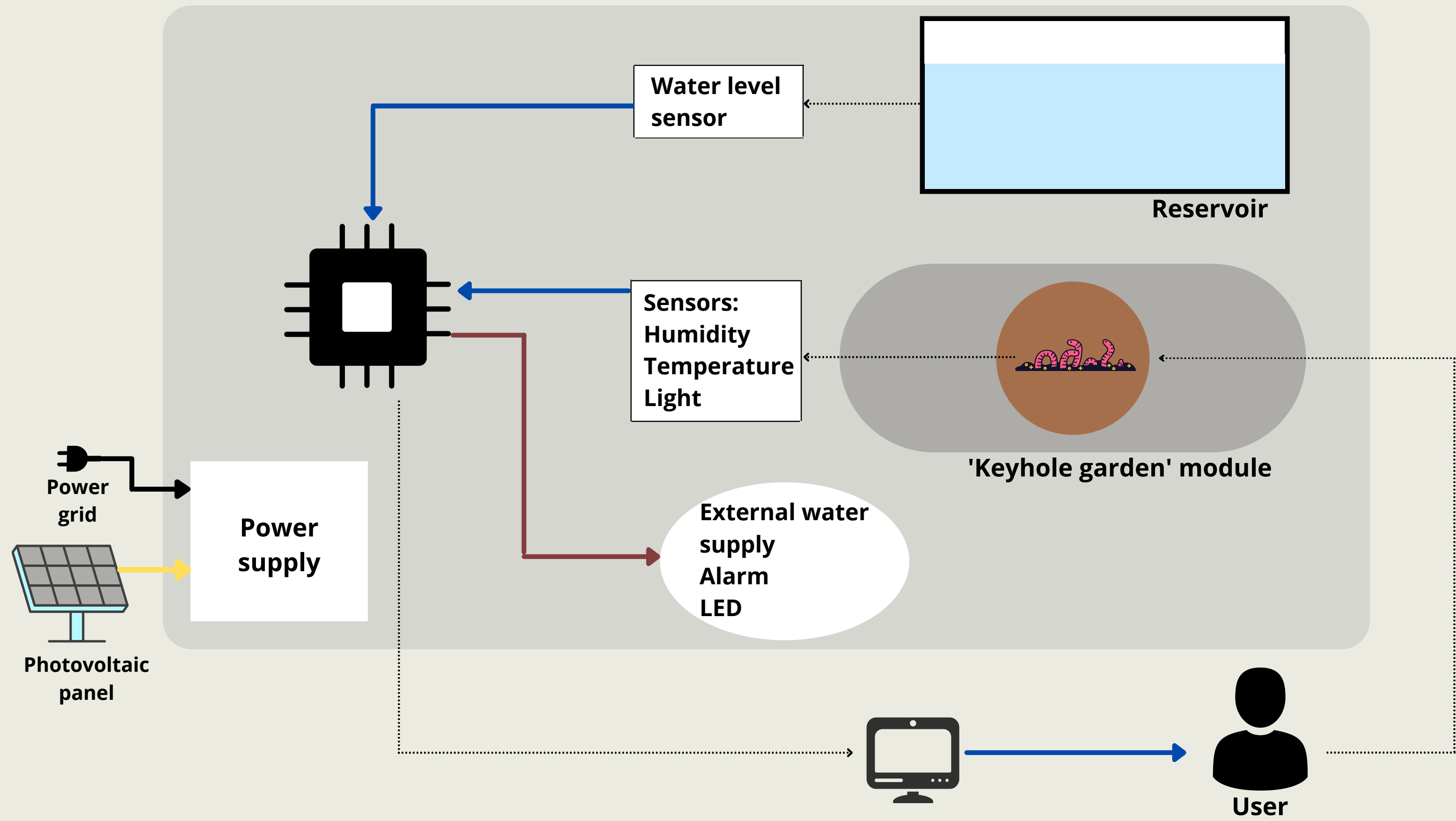


PRODUCT DEVELOPMENT



- **Bamboo bars**
(supporting structure + rainwater harvesting).
- **Connectors**
(enable to create all kinds of sizes and setups)
Material?
- **Flower pots**
with built-in infrastructure to enable
vermicomposting (Material?)
- **Watertank**
(to collect rainwater to feed to the plants)

BLACKBOX



→ **Define materials**

Mind sustainability

→ **Refine design**

User-friendly + further detailing

→ **Technical components**

where to place which sensors

CONCLUSION

Next steps in the development of the vermiponics

THANK YOU FOR YOUR TIME!



Vermiponics

