DEVELOPMENT OF A COMPOST BIN AS AN APPROPRIATE TECHNOLOGY WITHIN THE FRAMEWORK OF A HUMANITARIAN ENGINEERING PROJECT

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In this project by using appropriate technology development process, a compost bin was designed and built for the Wormser Erlebnisgarten, in Wroms, Germany. The main goal of this project was, finding the best way to manage resources in order to achieve a more sustainable technology in the garden.

❖ *Problem Statement*

The old compost bin not functioning the way it is supposed to, due to broken structure.

Rats damaging the compost area

After realizing and learning about the problems, resource and time management, and finding the best design, it can be assured that a more sustainable compost area will be achieved.

Figure 1– Compost Bin Area

❖ *Main Question*

How to build a new compost bin with less expencess using appropriate technology?

❖ *Objectives*

I. Environmental Benefits
II. Cost Management
III. Children Engagement
IV. Keeping the Animals away

Compost bins are an environmentally responsible method of managing organic waste. In this project almost 80% of the material were either recycled or donated. As Humanitarian Engineers, the main goal was to find the most certain and affordable way for solving the problems in the garden.

❖ *Theory*

- Appropriate Technology Criteria [1]
- Humanitarian Engineering Process [2]
- Appropriate Technology Development [3]
- Frugal Innovation [4]
- Impact Evaluation [5]

❖ *Method*

- **Identifying the Problems**
- **Gathering Ideas**
- **Preparing a Plan**
- **Preparing all the materials**

✓ Wooden Pallets
✓ Wire Mesh
✓ Hinges
✓ Nails and Screws

- **Assembly**
- **Evaluation of the Project**

Figure 2 – Building the Bin

Figure 3 – Painted, Finished Bin

❖ *Discussion*

The path of development is often faced with resource constraints, such as insufficient funds, materials, and equipment. Within these constraints, learning how to innovate and solve the problems, finding creative, low-cost solutions, might be challenging. The project needs evaluation in order to reassure that the installed technologies are working properly and also to check if the compost area has odor issues or not.

	Criteria for identifying appropriate technologies (Haba Prieto, S. 2014).	Yes	No
1	It solves a specific need of a specific social group.	X	
2	Adapt the original design to the local condition.		X
3	Flexible design to respond to environmental changes.	X	
4	Low costs for execution, operation and maintenance	X	
5	According to the management capabilities of the locality	X	
6	Environmentally sustainable	X	
7	Promotes training by involving beneficiaries	X	
8	Facilitates social and cultural appropriation	X	
9	Promotes the participation of men and women equally	X	

Figure 4 – AT Criteria analysis

❖ *Conclusion*

Constructing a compost bin out of recycled materials has encouraged environmental responsibility and sustainability. By developing a closed-loop organic matter system, the project improves soil health and minimizes waste. It works also as a teaching tool, spreading awareness about recycling and composting to promote sustainable living, specially for children visiting the garden.

❖ *References*

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