

BEST PRACTICE GEO-DOME

Submitted by : ITKAM



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SECTION 1: BASIC INFORMATION

- Title of the Best Practice: Geo Dome
- Website of the Practice: <https://nachhaltigkeit-ev.de/kapuzinergarten-eden>
- Social Media links: <https://www.instagram.com/verein.fuer.nachhaltigkeit/#>
- Location: Kapuzinergarten Eden, Eichstätt, Germany

SECTION 2: PRACTICE OVERVIEW

- Short Description of the Practice

The Geo Dome in the Kapuzinergarten Eden is a geodesic dome greenhouse and multifunctional space built as a community effort involving local schools, students, academic bodies and local sustainable associations. This structure serves simultaneously as a greenhouse, weatherproof learning environment, and community meeting place. Made from regional larch wood, ETFE foil, and screw foundations, it demonstrates sustainable construction with low environmental impact. The Geo Dome hosts school classes, workshops, and community events, while also producing local food such as tomatoes and chilli peppers. It provides an innovative model for education, food resilience, and community engagement.

- Implementation Period: 2022-2023
- Status:

☐ Planned ☐ Pilot phase ☒ Fully implemented ☐ Ongoing and evolving

- **Thematic Areas Addressed:**

☒ Farm to Fork / Sustainable Food Systems

☒ Waste Management

☒ Resource Efficiency

☐ Other: _____

- **Describe how the practice aligns with the selected Thematic Areas.**

The Geo Dome connects multiple thematic areas of circularity and sustainable development. As a greenhouse, it supports local food production at zero food miles, enabling students and community members to cultivate edible plants year-round. This strengthens farm-to-fork principles by promoting short supply chains and reducing packaging, transport, and food waste.

From a resource efficiency perspective, the dome's geodesic design minimises the use of materials while maximising stability. It employs regional larch wood, reversible screw foundations instead of concrete, and ETFE foil with self-cleaning properties. This ensures both durability and low environmental impact, as the structure can later be dismantled without leaving permanent traces.

The dome also promotes waste management practices, as it can be linked to composting systems where organic waste from the garden is returned as fertiliser. This creates a closed-loop cycle integrating production, consumption, and reuse.

Explain how this activity fits within the tourism sector

The practice of the Geo Dome is highly relevant to the tourism and hospitality sector: hotels and restaurants could replicate such structures to grow fresh ingredients, host sustainable dining events, or offer guests unique educational and ecological experiences. The Eichstätt dome also functions as a multifunctional event and learning space, suitable for school workshops, training sessions, and even community celebrations. This makes it a strong example of how sustainability can be integrated into both tourism and educational offers. Spaces of tourism businesses could be transformed to implement some of the aspects of this practice and make their own version of a greenhouse.

• What learning value for VET training, curriculum development or capacity-building of professionals does the practice offer?

The Geo Dome offers multiple opportunities for VET and professional education. In schools, it serves as a hands-on lab where students learn about construction, carpentry, horticulture, and sustainability by directly participating in the building and cultivation processes. Then, SMEs, hotels and restaurants could replicate the model, growing their own edible plants for use in gastronomy, hosting themed culinary evenings, or attracting tourists to visit edible gardens and eco-greenhouses. Lastly, the activity teaches resource-efficient design, circular food systems, and sustainable hospitality management, which apply to VET curricula.

SECTION 3: CHALLENGES AND ALIGNMENT WITH CIRCULAR ECONOMY PRINCIPLES

• What challenges or barriers were addressed (based on the report findings)?

- ☒ Waste management and disposal
- ☒ Energy/resource use
- ☒ Infrastructure limitations
- ☒ Seasonality
- ☒ Skills and capacity gaps
- ☒ Low awareness of CE
- ☒ Behavioural resistance
- ☒ Financial or funding constraints
- ☐ Other : _____

• How were these challenges overcome?

The leading organisations tackled the challenge of resource efficiency by using regional timber, reversible screw foundations, and ETFE foil. They also replaced a dilapidated greenhouse with an innovative, multifunctional structure to overcome the infrastructure limitations, which provides year-round cultivation of vegetables (tomatoes, chilli, etc.), overcoming the issue of seasonality. Then, to fill any skills and capacity gaps, the project integrated vocational students (carpentry, woodwork), university staff, and professional dome builders, turning construction into a learning project. Also, the financial barriers were overcome through diverse funding (Deutsche Postcode Lottery, local banks, KU departments, NGOs). Lastly, waste was managed and disposed of through the potential integration with composting and rainwater systems for circularity.

- **Which circular economy strategies does this practice address?**

- ☒ Waste reduction / reuse / recycling
- ☒ Renewable energy / energy efficiency
- ☐ Water conservation
- ☒ Circular product/service design
- ☒ Sustainable food systems / short food chains
- ☐ Eco-certifications or green standards
- ☐ Repair, refurbishment, or reuse of infrastructure/furnishings
- ☐ Digital tools for circularity or sustainability

- **Describe why this practice can be considered as a 'best practice' and how it contributes to one or more circular economy principles:**

The Geo Dome is a best practice because it combines sustainable construction, food resilience, and education in a single structure. Its circular design principles include the use of regional, renewable materials, reversible foundations, and integration with composting systems. By extending the growing season, it strengthens local food security while providing a multifunctional learning space. The project's collaborative nature (with schools, universities, and community actors) demonstrates how circular principles can be embedded in education and local development.

- **Describe why this practice can be considered as innovative. What new, creative or underused approach brings added value to circular tourism development?**

The innovation lies in the integration of a geodesic design for community food systems and education. Unlike traditional greenhouses, the Geo Dome is multifunctional: it is a weatherproof classroom, event venue, and edible production site. Its design is both ecological (minimal materials, no concrete) and educational (built as a student-involved project). Importantly, the model is scalable and adaptable: while the Eichstätt dome cost circa €80.000, smaller and lower-cost versions could be built with local timber, polycarbonate/PVC covering instead of ETFE, and student-led carpentry workshops. This makes the concept replicable for schools, VET centres, or tourism SMEs such as eco-hotels or restaurants.

SECTION 4: COLLABORATION

- **Describe any collaboration that were involved in the development of this practice? Did this practice involve local authorities or other groups?**

The Geo Dome was built through strong collaborations. Firstly, the funders are the Deutsche Postcode Lottery, Sparkasse, Miteinander-Stiftung, LAG Donau-Altmühl. Then, the Montessori School Eichstätt helped with its students, who prepared wood elements, together with vocational school students, who dismantled the old greenhouse, set screw foundations, and gained hands-on construction skills. The KU Eichstätt-Ingolstadt University also supported planning, logistics, and educational use, while local NGOs and businesses helped in various ways: The Nachhaltigkeit e.V. coordinated, the Vision Domes provided technical expertise, and local craftsmen supported construction.

(<https://www.ku.de/konvent/ueber-uns/arbeitskreise/ak-kapuzinergarten-edon>)

(<https://www.vision-domes.de/projekte>)

(<https://www.donaukurier.de/lokales/landkreis-eichstaett/geo-dome-im-eichstaetter-kapuzinergarten-eingeweiht-unterstand-und-gewaechshaus-zugleich-10643305?>)

SECTION 5: RESULTS AND REPLICABILITY

- **What measurable results or outcomes were achieved?**

- New 7m dome greenhouse constructed with sustainable materials: the skeleton from alpine larch wood sourced from southern Germany and the transparent covering made of clear ETFE foil, a high-performance, self-cleaning plastic.
- Provides year-round cultivation of vegetables (tomatoes, chilli, etc.).
- Functions as a weatherproof learning and event space, used by schools, KU, and the local community.
- Strengthened vocational and practical training through direct student involvement.
- Recognised with the Town & Country Stiftung Prize 2022 (Bavaria).

- **Why is this practice relevant to the Albanian tourism context?**

This practice is relevant to the Albanian tourism context, as it can serve as a resource-efficient greenhouse model for hotels, rural tourism businesses, or schools in Albania. It also supports local food production, extended seasons, and culinary tourism and provides multifunctional spaces for workshops, events, and eco-tourism initiatives.

- **What is the practice's potential for further expansion? How can it be applied or adapted to other Albanian tourism destinations or businesses?**

The practice's potential for expansion is to look at smaller domes (4m), which could be built more economically and integrate alternative coverings (polycarbonate or PVC) to reduce costs. The involvement of students from different educational systems makes construction a learning-by-doing project. Lastly, local sponsors (e.g. restaurants using the produce) can support financially and promote the initiative further.

- **What advice would you give others looking to implement a similar initiative?**

Start with a smaller, affordable version, involving schools, vocational students, and local communities in construction to reduce costs and maximise learning. Also seek local sponsors and link the dome to the tourism/food chain to ensure long-term use and visibility.



Project Partners



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