

## PROJECT SUBMISSION CHECKLIST

### Premio “ENERGY GLOBE THE WORLD AWARD FOR SUSTAINABILITY”

The JOHÑE permaculture demonstration center is a permaculture educational space that promotes and encourages autonomous and regenerative development with the use and promotion of alternatives, that favor changes in people's life patterns, helping direct towards sustainable practices and care for the environment. So far the centre has hosts people to receive education in environmental matters and by that activity has had the chance to finance courses to 14 communities and to host more than 50 local farmers and social workers to train and practice permaculture, bioconstruction, organic agriculture and others. Among the most important results we have had in the Johñe Project are the prevention of soil erosion and an increase in biodiversity in flora and fauna up to 500%, and the retention of up to 800 3M of rain water to be used on a 1 Hectare, the sum of water and a good management of soil, animals, native species, introduced regenerative species and mycobacteriology and micro-bacteriology have created an environment where we can find fruits, vegetables, sheep and poultry meat, nuts, cereals and greens. all working together with the native environment and the original plants.

We are located in one of the poorest areas in Hidalgo Mexico, and in one very difficult ecosystem such as the semi-desert of the mezquital valley, our neighbours are poor communities from the mountain surroundings, in majority indigenous communities. Is visible that poverty, hunger and lack of education is causing the deterioration of both, society and ecosystem. Not enough water and very low agricultural activities sum to this circumstances making people migrate to the US or the cities in search for a better life.

Since the Xerophile biome is endangered, we believe we have found the answer for restoring dry lands and endangered species ecosystems.

The project is located in the municipality of Santiago de Anaya Hidalgo, which surrounds the mezquital valley, with a type of semi-desert climate, socio-political conditions and, as a whole, the bioregional aspects of the site represent an important challenge in terms of development and conservation of the environment. Being part of the Xerophilous scrubs biome, it represents a richness in fauna and flora which in turn is threatened by urbanization and climate change, these regions add up to 24 million tons of soil that are lost due to erosion annually on the planet, coupled with the fact that in these desert climates about 30% of the population density is concentrated, which represents a challenge in relation to food production, the care and good management of natural and environmental resources, which represents a practice in environmental regeneration and improvements in the quality of life of the population, with techniques attached to sustainable systems.

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The challenges we had before implementation were among the lack of knowledge, but also the lack of more places that were having and teaching regenerative practices, along with the fact that the costs to implement and also to learn about permaculture is expensive in all Mexico.

The JOHÑE demonstration center is created from a need that exist in the municipality of Santiago de Anaya Hgo and also in the whole planet, contamination, soil degradation, lack of food production and many other factors motivated to be an agent of change in the locality in environmental regeneration, given the surface conditions in a hostile climate, which it causes shortage of food, water and infertile land.

JOHÑE is an interactive space for people from the region and offers a portal to find better ways to correlate with the environment, through sustainability techniques such as bioconstruction, permaculture and ecosocial design. We have a program established to develop training for the proper management and conservation of natural resources, as well as seek to represent a place where you can acquire tools to improve the forms of production, designs, construction and management of spaces, creating productive niches that stimulate biodiversity and in their designs, contemplate a self-regulation through the linking of species according to the environment, this allows in general to tend a site of preservation and expansion of vegetation and ecosystems of Xerophilous scrub in the valley of the Mezquital and consequently establish a resilient model to attacks of drought, excesses of rain, fires, earthquakes with the use of seismic-resistant homes, water purification systems and food production systems.

### Land And Water Work

The activities that are developed with greater impact and learning in the locality are attributed to the implementation of swales, level contour lines and moisture retention lines, pools of water collection and accumulators, developed from scientific research in water harvest strategies. A system of leveled curves was implemented by using the logic of k-line management for soil regeneration, as Darren Doherty mentions "Our ultimate goal is to allow all species and functions to express their full potential. The role of the farmer is to produce the most organic matter possible; Water is the key. "-(Darren Doherty Regrarians manual 2014). Based on this logic, we positioned water catchment in the highest areas, carrying out works that allowed the growth of organic matter and moisture retention, we let the pioneer plants take control and we began to nourish the areas where crops could be grown. As a result of the work, the increase in flora and fauna was achieved to 500%, in addition to the increase in the size of the pioneer plants.

### Collection and accumulation work.

In 2013, work began on the whole area of the demonstration center, starting with the collection of water and henceforth the transplanting of plants and the sowing of crops benefited with moisture ratios. The main water body covered a surface of 1000 M3, where a 2.4 mm geomembrane was

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used, then a 3.5 M3 pond was dug, in which it's saturation leads to an excavation for a pool with a capacity of 300 M3, and a last one a pond of

water of 40 M3 capacity. In the work process, small curves were made at level, contour lines and swales, designed to stop erosion and accumulate moisture during heavy rains, likewise, limit the runoff and allow the surfaces to be regenerated to give way to natural soil cover.

**Bio-Diversity:** Trees, carbon capture, introduced species and native species. In the JOHÑE permaculture demonstration center, non-natives species have been introduced and native species that support the design and some that provide food have been cultivated and promoted. The classification of vegetation, the improvements could be noticed in a descriptive way as follows: initially there was presence of 3 common wild grasses and a total of 17 different grass pastures were achieved in three years. Later on, the earth works were finished and there were 20 species of grass that grow in the place, which has allowed a diversity of soil cover in different points. Pastures that have been adapted to the climatic qualities and that have promoted an increase in the amount of organic matter present in the soil, serving several purposes such as feeding the sheep, covering the soil and protecting diversity among others.

The Xerophilous plants and cacti in the area has a progressive increase in the propagation and growth, the herbaceous ones contribute to the repair and coverage of the soil, protection and support between the species, creating a visually attractive space. Other introduced species were medicinal plants persisting in biodiversity.

The fruit trees, in addition to the pioneer tree of mesquite, family of acacias, were implanted 26 different fruit species such as peaches, plums, apples, tejocotes, figs, pears, apricots, guavas, Japanese plums, lemons, lime and pears among other fruit trees. In the same section, we also planted different varieties of pines such as pinus greggi, pseudostrobus, montezume, Patula, pinyon and as support some cypresses, oleaginous trees and acacias. Finally, the production of vegetables as a fundamental part in an interactive space in conjunction with the implementation of fauna that works restoring the soil and the ground cover.

The work done so far through sustainable techniques has allowed to recover, preserve and restore species from the region and to place new species in the demonstration center, assisting biodiversity.

The work in the demonstrative center JOHÑE, takes the innovation from the use of permaculture design, linked with the use of biconstruction, structural Adobe for housing, ferrocement tanks for water consumption, compost toilets and the use of animals in a cyclic way to create natural soil regeneration. The use of natural based materials and the design of it, allows the Self-regulation of the temperature with sunlight and the wind that runs in the region. The construction is highly viable for areas with very hostile climates such as the municipality of Santiago de Anaya Hgo., with a semi-desert climate with habitable conditions with the entire system comprising the

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designed environment, ( system of water collection and storage, productive systems etc.)

For the execution of the demonstration center project, we have applied the use of laser levels, water levels, gps and different equipment and tools to creat the earthworks, water catchment systems, also greenhouses, labour workforce, seeds, plants and animals. The implementation was done with a family budget of around 350,000 pesos, every year, to keep it working we spend around 125,000 pesos, along with the construction of a class room that is in progress that has cost 169,000 pesos.

So far, we have calculated we have spent around 1,019,000.00 In implementation and maintenance.

So far in the centre we have planted more than 350 trees, 280 shrubs, 250 cacti, more than a thousand vegetables and we have spread 19 endengared species of cacti, lizards, marsupials and birds. more than 12 species of native plands have naturally appear in the area, we have regenerated a total area of 1.5 hectares that have impacted beneficially to a 4.5 hectares around.

In the years we have given workshops we have received more than 700 people from different parts of mexico and around the globe, more than 100 locals have participated in workshops. We have created 5 jobs and hope to create more. We have capture carbon emission more than generated, We have stopped runoffs and erosion, we catch more than 5 million liters of water. We have treated around 120 tons of organic waste and transformed into compost, managed to not contaminate 179280 liters of water by using compost toilets.

Permaculture focuses into maximizing the yield and biodiversity potential of a determined area. Through the systemic analysis of the landscape and from the point of the view of agroecology, permaculture design, a dry environment can be turn into a productive and regenerative hub that should be replicated everywhere and the opportunity to do so lays in the fact that semi-desertic areas around mexico and the globe are very populated. To Replicate the idea would have to respect the bioregional characteristics of every place, however, the techniques and the general way to manage the project can be adapted everywhere.

Equipment	Costs	Quantity	Total Costs:
Classroom 40m2	16,000 USD	1	16,000 USD
Dormitory Room	13,000 USD	1	13,000 USD
Gardening Tools	\$2,500 USD	1	2,500 USD
Salaries and wages	\$1,132.5 USD	12	13590 USD
Solar Panels	\$3,500 USD	1	3,500 USD
			48,590 USD

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