Green Entrepreneurship

Successful business cases of Green Entrepreneurs in the Mediterranean

Karagönler. : Biofuel and Olive Oil production from Olive Pulp

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Name:	Karagönler
City, country:	Hatay, Turkey
Name of entrepreneur/ founder:	
Description:	A medium sized olive oil producer company with 4,500 tons of oil processing capacity producing biofuel and olive oil from production residues. Collected residues are extracted by hexane to produce olive oil and then spent olive cake is pressed into material similar to firewood, with a high commercial value.
Investment:	*Start up capital:* 2,800,000 € *Rate of return on investment:* 1.9 years *Sources of funding:* Financed by Technology Development Foundation of Turkey, Development Bank of Turkey and Company's own resources.
Employment generation:	1 environmental engineer, 1 technician and 14 non skilled workers (in total 16 employees).
Timeline:	2009 - Inception 2011 – Implementation
Feasibility study:	In Hatay, where the project is implemented the amount of olive oil and olive production is highest among all cities in Mediterranean Region with 22,278 tons of olive production in total. In other words, the main input of the facility is secured for a long period of time. On the other hand, there is almost no risk for commercialization of the product since firewood is used almost everywhere in the region, including households and industrial enterprises. The main operational cost of the facility is the raw material (olive pulp) which accounts for 930,000€ annually. Other operational costs are Personnel, Chemicals, Energy and Maintenance-repair. Total operational cost is estimated to be 1,290,000€. Since the estimated annual revenue is somewhat 2,800,000 € the return of investment will be in 1.9 years.
Geo-social-economic setting:	Turkey is at the 4th rank for olive tree population, 6th rank for the olive tree area among the olive producing countries. Turkey contributes to world olive production at a rate of 8% and is at the 2nd rank after Spain. Furthermore, Turkey is at 1st rank for olive consumption. According to the "Olive and Olive Oil Harvest" results of 2010-2011 period, in Mediterranean Region, there are 46,727,191 olive trees and 44,414 tons of olive oil will be produced in total. Owing to the high production and consumption of olive oil in Turkey high amounts of olive pulp is generated, which have to be disposed of in a safe manner. Currently, in the rural parts of the country most of the produced olive pulp is either burned unsanitary or deposited on wild dumping areas.

Key features:	Resource Efficiency, Waste reduction and valorisation, Value-added Product Formation, Industrial Symbiosis, Industry-Industry Cooperation, Regional competitiveness, Social responsibility
Overall rational and motivation:	To act as an example in the sector, providing a better quality fuel for the people in the region, who tend to use olive pulp directly, which is an unhealthy practice. To overcome an important environmental problem by recovery of wastes. Furthermore, to contribute to the prevention of air pollution by producing fuel from wastes. In addition to these, also to contribute to the saving of natural resources and forests by preventing wood consumption. To provide local production of fuel wood that is presently imported from Syria, and to act as an example of industrial symbiosis by the collection of olive pulp from other producers in the region.
Strengths:	Being an important player in the olive oil market in the Hatay región, Producing olive oil from olive pulp which is a value-added product, Compatible with the environmental legislation, Improvement in the product quality, Reduction of air emissions
Challenges and constraints:	Difficulties in creating sufficient investment capital and there is a risk of not collecting enough olive pulp.
Direct activities and Impacts:	*Social*: Living conditions, health, and awareness level will be increased from use of a healthier fuel. *Environmental*: 30,000 tonnes/year olive pulp will be utilized reducing waste and conserving natural resources (firewood) as well as protecting forestland. *Economic*: 15,000 tonnes/year fuel will be produced contributing to national economy, GDP, country competitiveness.
Use of innovative Technologies:	Converting a waste product into fuel and new processes of extraction (including vapour, drying and oil extraction), refining processes and production of olive pulp.
Evidence of a holistic approach/world view:	Contribution to regional development by the recovery of in plant wastes as well as the wastes of same character originating from other plants in the region, with an approach of industrial symbiosis.
Scale of benefits:	Local and regional, due to recycling of 30,000 tonnes of olive pulp per year and 15,000 tonnes of fuel produced.
Policies, incentives and regulations needed:	Consumer demand is the primary driver of the market. Therefore, it is essential to create public awareness on environmental problems and sustainable consumption approach, for creating an environmentally friendly product and service market. Measures should be taken for “supply chain approach” and “supply chain management” to be adopted by private sector, so that an interactive environment is created for green entrepreneurship and different entrepreneurial opportunities are developed during materials management, collaborative procurement, collaborative manufacturing, etc.
Lessons and recommendations:	Wastes are actually raw materials for producing other added value products. Analyzing the status of the regions in terms of market needs is important.

References:

None given.

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