

## SWOT Analysis on the Prospects of Carob Use in Human Nutrition: Crete, Greece

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**Abstract :** Research: Within the project "Actions for the optimal utilization of the potential of carob in the Region of Crete" which is financed-supervised by the Region, with collaboration of Crete University and Hellenic Mediterranean University, a SWOT (strengths, weaknesses, opportunities, threats) survey was carried out, to evaluate the prospects of carob in human nutrition, in Crete. Results and conclusions: 1). Strengths: There exists a local production of carob for human consumption, based on international reports, and local-product reports. The data on products in the market (over 100 brands of carob food), indicates a sufficiency of carob materials offered in Crete. The variety of carob food products retailed in Crete indicates a strong demand-production-consumption trend. There is a stable number (core) of businesses that invest significantly (Creta carob, Cretan mills, etc.). The great majority of the relevant food stores (bakery, confectionary etc.) do offer carob products. The presence of carob products produced in Crete is strong on the internet (over 20 main professionally designed websites). The promotion of the carob food-products is based on their variety and on a few historical elements connected with the Cretan diet. 2). Weaknesses: The international prices for carob seed affect the sector; the seed had an international price of €20 per kg in 2021-22 and fell to €8 in 2022, causing losses to carob traders. The local producers do not sort the carobs they deliver for processing, causing 30-40% losses of the product in the industry. The occasional high price triggers the collection of degraded raw material; large losses may emerge due to the action of insects. There are many carob trees whose fruits are not collected, e.g. in Apokoronas, Chania. The nutritional and commercial value of the wild carob fruits is very low. Carob trees-production is recorded by Greek statistical services as "other cultures" in combination with prickly pear i.e., creating difficulties in retrieving data. The percentage of carob used for human nutrition, in contrast to animal feeding, is not known. The exact imports of carob are not closely monitored. We have no data on the recycling of carob by-products in Crete. 3). Opportunities: The development of a culture of respect for carob trade may improve professional relations in the sector. Monitoring carob market and connecting production with retailing-industry needs may allow better market-stability. Raw material evaluation procedures may be implemented to maintain carob value-chain. The state agricultural services may be further involved in carob-health protection. The education of farmers on carob cultivation/management, can improve the quality of the product. The selection of local productive varieties, may improve the sustainability of the culture. Connecting the consumption of carob with health-food products, may create added value in the sector. The presence and extent of wild carob trees in Crete, represents, potentially, a target for grafting. 4). Threats: The annual fluctuation of carob yield challenges the programming of local food industry activities. Carob is a forest species also - there is danger of wrong classification of crops as forest areas, where land ownership is not clear.

**Keywords :** human nutrition, carob food, SWOT analysis, crete, greece

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