

Reviving legume production in the MENA region... between hope and utopia.

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Growing food legumes has several advantages: it improves soil structure, breaks the cycle of diseases, especially in monoculture rotations, and reduces nitrate pollution by decreasing nitrogen inputs in the rotation. As far as food is concerned, legumes are an important source of plant protein and fibre, which are very useful for human health. In the current context of the Middle East and North Africa (MENA) region, essentially marked by a significant degradation of natural resources and an increasing inflation of food prices, legumes can appear to be an interesting solution to mitigate the effects of agricultural intensification on biodiversity, and to (at least partially) replace animal proteins that are increasingly expensive and inaccessible to disadvantaged population groups. Unfortunately, the reality in the MENA region is quite different: it has undergone a significant reduction in total legume production over the last 15 years. This is mainly due to a decrease in the areas dedicated to these crops and a stagnation of, or even a decrease in their yield. A direct consequence of this drop in production is a considerable increase in the import bill for legumes. The aim of this study is to present a preliminary assessment of the impact of different levers expressed as strategic scenarios over the Mediterranean region by considering a wide range of farm dataset collected over five different countries of the South and the North of the Mediterranean region. Data of existing representative 10 farming systems (representing more than 10,000 real farms) were selected by using the PCA over six distinct study sites existing in Lebanon, North Tunisia, South Tunisia, Algeria, Morocco and France. Interviews with farmers, over all study sites, were conducted to collect a set of biophysical, socioeconomic and nutritional data describing their farms. This wide range of collected data allowed covering different Mediterranean contexts as a function of several variables such as the climate (arid to semi-arid regions), resource endowment (irrigated area per farm, farm income ...), intensification production (as a part of production cost) and production goal (crop orientation, self-consumption...) (El Ansari et al. 2020). A static bio-economic model (Belhouchette et al. 2012) was developed in order to assess the farm behaviour in response to the strategic scenario of increasing water dedicated for irrigation in the Mediterranean region. Based on the model simulations, it became clear that for many farmers, legumes are not a priority, especially for those with access to irrigation. Their low price and low and variable yields obviously play a very important role in the decline of these crops. The path followed by the different irrigated areas created in the MENA region since the 1980s makes this very clear: these areas initially cultivated with cereal/legume rotations have progressively been intensified with market gardening and arboriculture, as soon as access to water was made possible. A direct consequence of this intensification is a significant decrease in the area dedicated to legumes, which are grown more for rotation needs than for the production itself. There are many reasons for this failure, but they all converge on one major observation: the lack of a real determination on behalf of public authorities to organise this sector and its different components. This lack of political will reflects, above all, a real debate and an "almost consensus" which states that giving the environment a more important place in agricultural policies by encouraging, for example, the cultivation of legumes, could only be done at the expense of cash crops with high added value and that generate wealth and employment in rural areas.



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