

## **Farming systems' diagnosis and exploration of alternatives for fruit-tree production growers of South Patagonia**

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Because fruit-tree crops are perennial, the choice of production system, made at planting in the context of financial (and other resource) constraints and unknown future prices of inputs and outputs, has overriding implications for yield and fruit quality, and ultimately profit. North Patagonia is a traditional region of apples and pears production. However, in South Patagonia (Chubut, Santa Cruz and Tierra del Fuego Provinces), its development has been rather limited. South Patagonian fruit growers have been exporting sweet cherries to Europe for some time. Concurrently, provincial organisations and INTA (*Instituto Nacional de Tecnología Agropecuaria*) have been supporting the development of this crop through applied research and extension, convinced of the possibilities for its expansion and success. However, cherry prices received by growers have been decreasing in the last few years and diversification towards other fruit-tree crops has not really started, neither does policy promote it. With the aim of identifying and developing, with growers, technicians and policy makers, alternative fruit production systems and agricultural policy options to allow improving income generation and sustainable use of natural resources, an EU-funded project, EULACIAS, started in 2007. EULACIAS makes use of disciplinary knowledge and expertise accumulated during several years by both INTA staff and growers, based on a system approach and continuous monitoring, incorporating the concept of co-innovation as a core for farming systems action-research. The Argentinean case study concentrates the efforts in pilot farms (based on a typology study) in three production zones of South Patagonia: Lower Valley of Chubut River, Sarmiento and Los Antiguos. Basic data was systematized in a specifically designed database named INFOCHACRA, from which relevant socio-economic indicators are calculated. Following multi-attribute diagnosis, a re-design phase is entered not so much aiming at adjustments of the present systems, but exploring fully new farming systems. The farmer is a permanent actor of this process, in which the scientists help with the process of diagnosis, design and quantification of alternatives, but the actual decisions for changes have to be taken by the growers. Due to the fact that in fruit production systems crops are perennial and the implementation of strategic decisions is difficult and slow, the project makes use of models to evaluate systems and to show the “window of opportunities”. The linear programming multi-year model OPTIFROP was developed to support this process. This paper aims to report on the approach followed in the project and presents results on farming systems diagnosis and exploration of more sustainable alternatives for fruit-tree growers of South Patagonia.