

The History of Economic Development in Lanjarón, Granada in the province of Andalucía, southern Spain

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Early development

Historians suggest that modern settlement of this area began in the 11th century with the Moors, invaders from North Africa, although early Arab literature states that the Alpujarra was “densely populated by a very warlike folk.”(1) It was the Moors who set up a network of irrigation channels in the mountains. This enabled them to develop land that was traditionally *secano* (dry), naturally supporting only evergreen oaks and grassland, although it could support the cultivation of vines, early maturing cereals, figs and olives under rain-ed agriculture.

With irrigation, local farmers developed local subsistence farming systems that typically involved growing alfalfa, vetch, wheat, rye, lentils and chick peas (garbanzos) and keeping perhaps three sheep or goats, some fowl, two or three fig- or acorn-fed pigs, beehives and a single cow. In addition, they grew a wide range of vegetables. Some even grew mulberry trees to produce silkworm cocoons for the silk weaving industry in the eastern coastal town of Almeria – a practice that began with the Moors, who established this industry, and that lasted until about the end of the 15th century when the industry died out. Although these were never more than subsistence farms, they typically produced enough to support a small flour mill and olive oil press that would provide these important products to the farmer and his family.

Ongoing sustainability

However, this area was not farmed sustainably over the centuries, and each successive generation used more technology to obtain a yield beyond the carrying capacity of the environment. From the beginning of the 1900s, the increasing difficulty in earning a living from the land led to growing urban migration. As the younger generation were lured by a life of greater ease in the cities, so family farms lost the labour that ensured their survival. The result was that much farmland was sold and traditional small-scale mixed farming largely died out in the region by the mid-20th century. The land that was released was bought up cheaply by shepherds and goatherders, who typically increased their herd size to several hundred animals, well beyond the capacity of the already denuded landscape to support. As a result, they relied increasingly on imported feeds, and now admit that if it was not for government subsidies, they could not continue their way of life.

Periodic prosperity

In the 19th century, the area did know periods of temporary prosperity through metal mining, such as lead, copper, iron, zinc and cobalt; it was also known for its wide range of marble. The town of Lanjarón was known for both cobalt and brown jasper. Agricultural products like wine, almonds, olive oil and grapes have also provided short-lived financial returns. But none of these activities provided long-lasting economic prosperity; in fact they ultimately depleted the area's natural resources still further.

More recently, Lanjarón was also the first place in Spain to build a water-bottling plant, capitalizing on the town's reputation as a spa, begun in the 9th century. The plant, now owned by the French multi-national company, Danone, pumps 2 million litres of water daily from the mountainside, in an area that has at least six months of drought. But the policies in place do not include steps to safeguard the aquifers. Furthermore, priority is given to the bottling plant, whereas irrigation water, which comes from the same source, is rationed throughout the drought months. An additional concern is that since 2007, the period of drought has lengthened, causing increased rationing for irrigation as well as affecting aquifer recharge. The possibility that these extended periods of drought may represent a new climatic trend is particularly troubling.

A last resort

As these successive economic opportunities have played out, so tourism has increasingly become viewed as the last recourse for economic prosperity. In fact, tourism is now the economic sector that generates most wealth and employment in the province of Granada, with 1.6 million tourists visiting every year. It accounts for around 20% of the local Gross Domestic Product (GDP) and 40% of the city of Granada's GDP and directly generates 15% employment. As a result, there is a heavy investment in maintaining and expanding tourism locally.

However, the tourism being promoted is of the conventional kind. There is no attention paid to safeguarding either the local social or environmental fabric of the host community and any economic benefit often goes to outside investors. Since the 1960s southern Spain has been subjected to a "staggering rapidity of growth, relatively uncontrolled private sector investment ... much of it foreign in origin ... lack of coordination with infrastructural development and a breathtaking lack of concern for existing natural, socioeconomic and cultural environments."(2) This means not only that the prosperity promised to local residents by developers is leaked to foreign investors, but also the natural and social infrastructure is further eroded. And despite acceptance by the Spanish authorities in 1997 of the concept of sustainable tourism(3), little of that commitment has been reflected in tourist development strategy since that time.

Advancing desertification

With inappropriate land management practices, this brittle landscape (as defined by the Savory Brittleness Scale) is forecasted to be a desert within 15 years. Attendant to this is the proliferation of plastic greenhouses in the existing arid areas, with the added problems of salination, chemical contamination of soil and water, depletion of water aquifers, toxic working conditions resulting in work-related health disorders(4) and poorly supported immigrant labour.

The change from subsistence farming to greenhouse production farming to serve markets in northern Europe began in the early 1980s. South-east Spain has the largest concentration of plastic greenhouses in the world - approximately 350 square kilometres - and represents an annual value of 1.2 billion euros. The plants are either grown in a layered substrate laid on the original soil, comprising clay (for water retention, a layer of 8 to 10cm depth) and a layer of sand (for a good plant root growing medium, a layer of 10cm), or using fertirrigation, where the growing medium is bags of perlite stone into which chemical fertilisers are drip fed from computer-controlled vats, containing potassium nitrate, magnesium, potassium sulphate, calcium nitrate and phosphoric acid(4).

Studies are being conducted on chemical contamination of soil and water, but there is little incentive for more enlightened policies, with much funding coming from EU grants. With statistics such as these, it is easy to see why response to environmental degradation is sluggish: Over 1800 ha of sweet peppers are grown in south east Spain, yielding 155,000 t of produce with a value over 75 million \$ and a turnover of 129 million \$. This crop involves 1,450 farmers with average family farms of 1.3 ha and generates a total of 6,070 jobs(5).

The impact of this unsustainable development is far-reaching, with the Spanish government's decision to pump water supplies from the Ebro basin in northern Spain. The national water plan, envisaged to cost nearly 23 billion euros, will include a 1,000 k pipeline and 70 dams. Yet the National Statistics Institute states that Spain wastes five times more water than the amount that the government intends to move under the national water plan.

1. Grove, A.T. and Rackman, Oliver. 2003. *The Nature of Mediterranean Europe, an ecological history*. Cambridge, MA: Yale University Press. Page 8.

2. Barke, Michael and Towner, John. 2003. Learning from experience? Progress towards a sustainable future for tourism in the central and eastern Andalusian littoral. *Journal of Sustainable Tourism* 11 (2 & 3): 162-180.
3. A good working definition of "sustainable tourism", arrived at during the 2002's International City Tourism Conference in Vienna, Austria, is "a level of tourism activity that can be maintained over the long term because it results in a net benefit for the social, economic, natural and cultural environments of the area in which it takes place."
4. Tremlett, Giles. 2005. *Spain's greenhouse effect: the shimmering sea of polythene consuming the land*. The Guardian Newspaper 21st September.
5. Lacasa, A, López-Pérez, J.A., Bielza, P et al. 2000. *Alternatives to Methyl Bromide for sweet pepper cultivation in plastic greenhouses in south-east Spain*. Protección Vegetal, Centro de Investigación y Desarrollo Agroalimentario, Consejería de Agricultura, Agua y Medio Ambiente; Centro de Ciencias Medioambientales. CSIC; Producción Vegetal, E.T.S.I.A. Universidad Politécnica de Cartagena.