

Arento Group in Spain

Towards a Sustainable Future



Crop diversification by combining almond trees, cereals and hunting at Alhagüeces farm (Zaradilla de Totana, Spain; ©Carolina Boix-Fayos

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Introduction

Aragón is located in northeast Spain, 300 kilometers from Madrid. This vast, sparsely populated, rainfed region of almost 50,000 km² and 1.3 million inhabitants is one of the richest agricultural regions in Spain. Farming has been an important activity in Aragón for centuries. Wheat, barley, rye, fruit, almonds, olive oil, and meat are transported from here to the rest of Spain, and to neighboring countries like France, Italy and Morocco.

Grupo Arento (Arento Group, hereafter: Arento), one of Spain's largest agrarian cooperatives (co-ops) is based in Zaragoza, the capital of Aragón. Consisting of 88 baseline co-ops¹ and 20,000 farmers in 2017, it covered 400,000 ha of land and had a direct impact on the lives of 140,000 people. With a direct investment of 50 million euros in the area, it was a job generator and economic engine in rural Aragón.²

Despite its importance in the local economy, Arento's financial situation in 2017 was difficult and made even worse by Spain's serious long-term rural depopulation problem. Over the past decades, rural residents increasingly had abandoned their lands to seek work in big cities where they could get better incomes and access to services. Unable to show farmers a prosperous future, Arento was slowly losing their support and trust in fighting hardship, and its situation further deteriorated: a 32-million-euro debt, mainly due to short-term loans with high interest rates, was choking the company.³

These financial and management problems triggered the election of a new board as well as a new Group president in January 2018. Enrique Arcéz had been the president of one of Arento's largest co-ops. A farmer and stockman himself, coming from a little village in the area, he had a deep understanding of the tensions within the Group. He urged everyone to base business on proximity and place trust before money, saying the rifts have been a disaster for all and they should redirect the situation towards loyalty, trust and closeness between Arento and its baseline co-ops.

Paula Arellano Geoffroy and Tao Yue prepared this teaching case under the supervision of Prof. Dr. Rob van Tulder at the Rotterdam School of Management, Erasmus University. The original idea for this case was provided by Dr. Carolina Boix-Fayos and Dr. Joris de Vente (Soil and Water Conservation Research Group, Spanish National Research Council, CEBAS-CSIC) and is based on a collaboration between the ENABLE (Erasmus+) and the DIVERFARMING research Project (Horizon 2020 program, grant agreement: 728003).

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This case is based on field research. It was written to provide material for class discussion rather than to illustrate either effective or ineffective handling of a management situation.

While aligning the Group's interest with that of the co-ops, Arcéiz implemented the measures decided by the board to combat the crisis, which included the appointment of a new managing director, a capital increase, cost reductions, financial restructuring, downsizing, divesting inefficient or non-core businesses, and building alliances with strategic clients.

By July 2018, Arento was recovering from the crisis. The board and the new president could finally catch a breath and think about the future. Their attention fell on Diverfarming⁴—a European Union funded project Arento took part in, that aimed to regenerate agro-ecosystems, improve agro-businesses, and create a better life for agro-communities through diversified farming.⁵ In the board's view, diversified farming was the spirit Arento should instill in its management model because it strived for economic, environmental and social sustainability in all processes along the value chain. The challenge for Arento was how to align all functional areas as well as all stakeholders to make them work towards the same goal. Arento needed to now take a step back, examine itself, identify the gaps from becoming a more sustainable company, and determine how to bridge these gaps. It would take time to reach this goal, but Arento could not afford to delay taking action because the future of rural Aragón and its inhabitants depended on it.

History and Social Mission

Agrarian cooperatives appeared about a hundred years ago in Spain to give working-class movements a social and economic structure. There were 3,762 agrarian cooperatives in Spain in 2017. Together, these co-ops generated 26,198 million euros, equivalent to 65% of total Spanish agrarian production and to 30% of the Spanish food industry's global sales. Mainly dedicated to fruits, vegetables and olive oil production, they encompassed 1.1 million members and generated 97,824 direct jobs.⁶

Together with Arento, the Aragón region's (**Exhibit 1**) agriculturally based economy evolved significantly during the last century. Arento's history dated back to the beginning of the 20th century, when an economic and social movement happened in Aragón which resulted in the Aragón Central Union (*Sindicato Central de Aragón*)—the rudimentary form of today's Arento. The approval of the Spanish cooperative law in 1942 enabled agrarian unions to form legal cooperatives, and Aragón Central Union became Farming Cooperatives Territorial Union (UTECA, *Unión Territorial de Cooperativas del Campo*) to provide raw material and services to its members. UTECA Zaragoza was founded in 1981, as a larger group encompassing other minor co-ops and with a more commercial drive. In April 2005 UTECA Zaragoza became Arento, with a modernized image and a commercial strategy focused on the market.

Arento's historical background determined its social aim. Working as a union, Arento facilitated large-scale negotiations and made it possible for farmers to get better prices, access bigger markets and obtain better conditions than they would have on their own. Eduardo López, director of cooperative business at Arento, explained: "The purpose of this union is to add value to the production of each baseline co-op

from each village. Also, to create a central purchase center to provide them with fertilizers, pesticides, all the supplies they need to cultivate their crops with the best conditions.”

Exhibit 1: Spain and its regions (left); Aragón region (right)



Source: Ontheworldmap.com

Besides performing as a trade center for its baseline co-ops, Arento played a role as a training and consultancy center. Through Arento Professional Services, it provided 3,300 small farmers with direct technical agrarian support, and reached 8,000 farmers with advice on management and administration, risk prevention, agrarian and feeding quality control, marketing, communication and design, and legal support.

All these activities served a more fundamental goal: to keep rural activity in rural areas. According to López, farmers with few children or old parents often went to live to big cities where they could find all basic services. As they were living 100 km or more away from their farms, co-ops became useful and essential for them to maintain their farms. In 2017, about 60% of Arento’s farmers cultivated their own land, 30% harvested other producers’ land, and 10% rented land from the municipality to harvest. The ages of the farmers ranged from 20 to 90, but almost all of them had basic studies, and many had also technical-agrarian education—approximately 10% had a university degree.

Arento hoped to attract more people to work on farms. Rural Spain faced a cumulative and serious depopulation problem. According to ABC news,⁷ 4,000 villages—half of all Spanish villages—were at risk of disappearing due to migration to big cities. An extreme example was the smallest village in Aragón: Bagüés, located 150 km north of Zaragoza. In 2018, the village had only 12 inhabitants. The mayor of the village, José Alberto Pérez, said that reality was even worse: “Right now there are three of us here—my mother, 87 years old; a neighbor, aged 50, who works in Jaca;

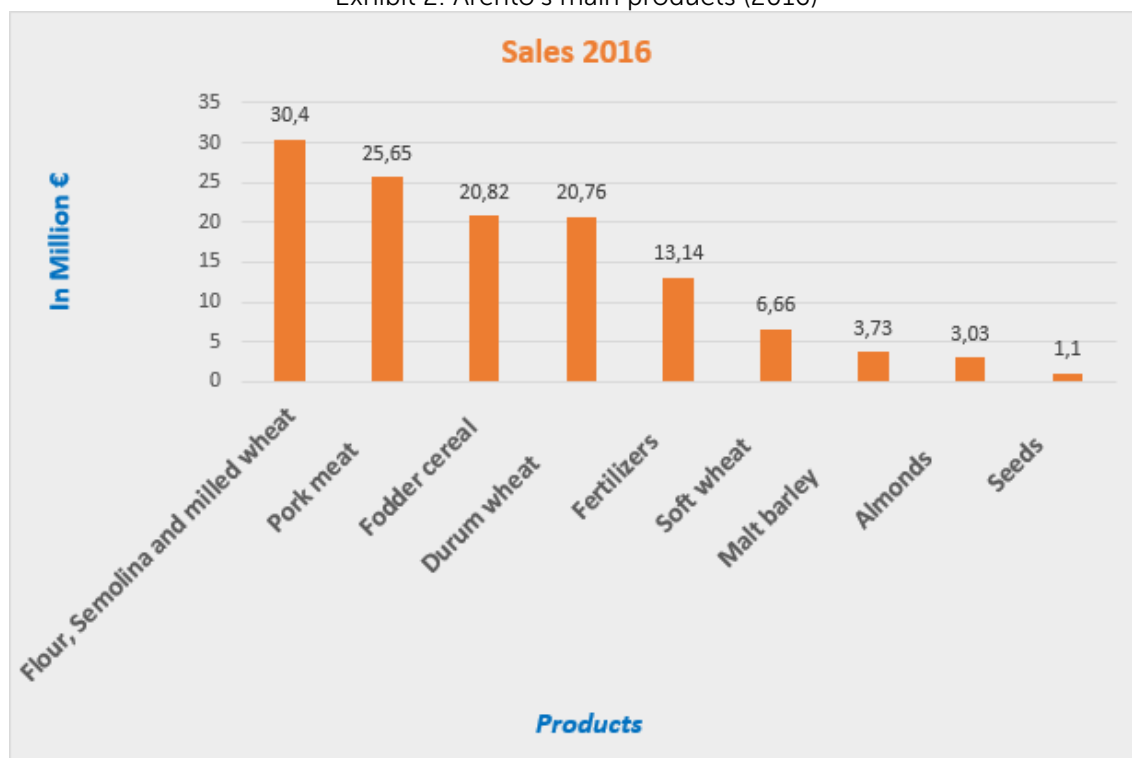
and me, I am 47.”

Products and Services

With 220 million euros of annual aggregated billing in 2016, Arento was the largest co-op in Aragón and the eighth in Spain. Its core business was wheat production. Wheat production in Spain had increased each year due to higher demands from pasta producers and better cropping knowledge. The surface dedicated to durum wheat production in Spain amounted to 404,339 ha in 2016, of which 26% was in Aragón, almost all of it within the immediate surroundings of Zaragoza.

Arento’s main products included cereals (durum wheat, soft wheat, malt barley, fodder), flour, and semolina. Besides, Arento sold seeds, fertilizers, pesticides, pork meat, almonds, and olive oil (**Exhibit 2**).

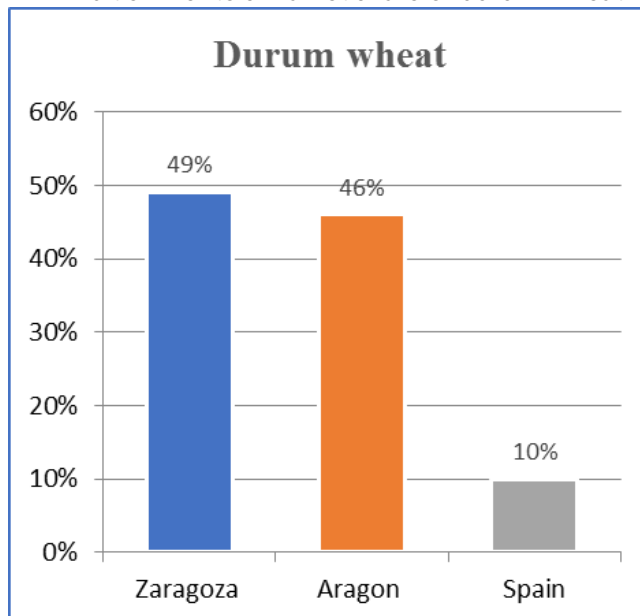
Exhibit 2: Arento’s main products (2016)



Source: Based on Arento Corporate Annual Report 2016
(note: the commas in this exhibit should be understood as decimal points)

The Group also had a Visa Arento card, gas stations, and offered logistic services, genetic crop services, and other professional services. In terms of market share, durum wheat was the most important product for Arento, claiming nearly half of the regional market and 10% of the national market (**Exhibit 3**).

Exhibit 3: Arento's market share of durum wheat



Source: Based on Arento's 2016 Corporate Annual Report

Value Chain and Organization

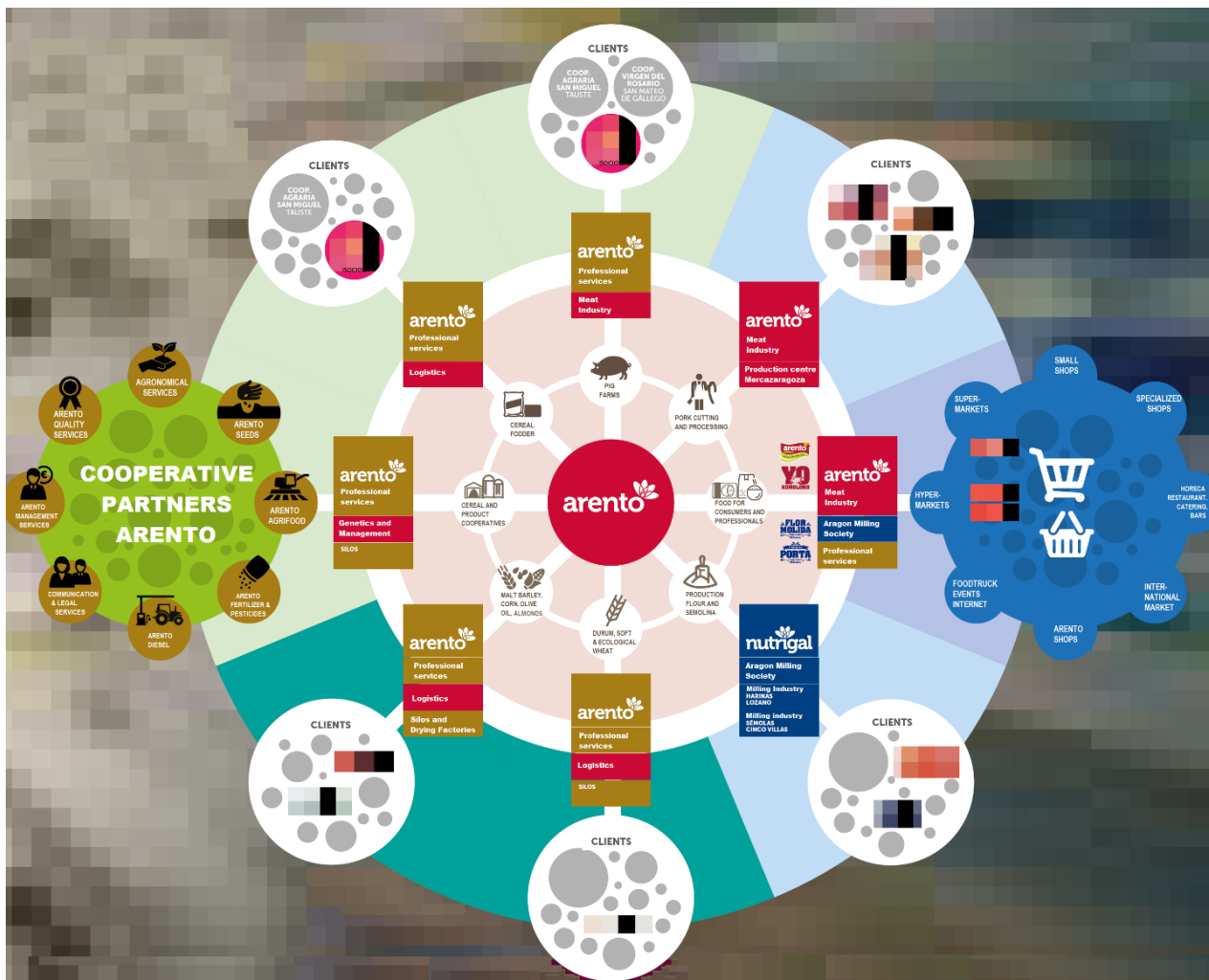
The idea behind offering such diverse products and services was that Arento wanted to manage all steps of the value chain around its products, from raw material production, to storage, processing, transportation and sales (**Exhibit 4**).

The 88 baseline co-ops acted both as suppliers of raw materials and as customers for fertilizers, pesticides, seeds, services, gasoline, etc. For instance, Arento transformed the wheat grain bought from the co-ops into flour and commercialized it at industrial levels (for example, 40 kg flour bags destined to bakeries and catering). Wheat grain and flour were stored in Arento's silos and then Arento Logistics transported them to clients. Arento's main clients were hypermarkets, supermarkets, small shops, and HORECA sectors in Spain. The clients consequently marketed and distributed the products purchased from Arento to end-consumers.

Industrial products were sold under the brand Arento. Consumer products were sold under the premium brands Yokomolomo (pork meat) and Flor Molida (flour). Arento had entered the retail industry for pork meat. It reached consumers and butchers directly with the brand Yokomolomo, which could be found in supermarkets. Arento also implemented marketing and communication campaigns and summoned renowned chefs as brand ambassadors. With respect to flour, Arento had developed several marketing studies but still remained in the wholesale business and marketed the brand Flor Molida through its clients.

In 2016, Arento began to export durum wheat, semolina and flour on a small scale to Morocco, Italy and France to fulfill its internationalization goal. The aim was to increase exports in 2017 and 2018.

Exhibit 4: Arento value chain



Source: Based on Arento's 2016 Corporate Annual Report

Based on its products and services, Arento was organized into nine companies (Exhibit 5):

- Arento Financial Corporation
- Arento Logistics
- Arento Professional Services
- Arento Meat Industry
- Nutrigal Aragon Milling Society
- Harinas Lozano (flour industry)
- Sémolas Cinco Villas (semolina industry)
- Arento Energy
- Arento Genetics and Management

The companies were vertically integrated around Arento Financial Corporation (CFA) that was accountable to the board, formed by a president, vice-president, secretary and the representatives of the 9 largest baseline co-ops.

Exhibit 5: Arento corporate chart



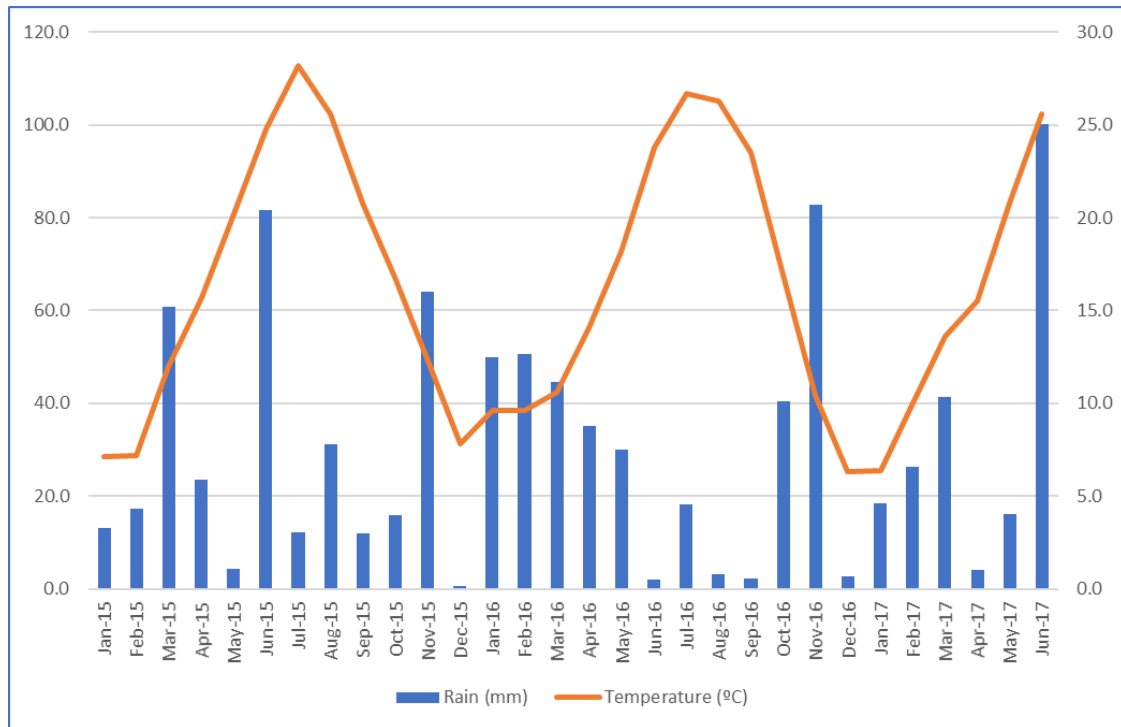
Source: Based on Arento's 2016 Corporate Annual Report

Climate, Markets and Sustainable Aim

Another reason for Arento's products and services diversity was the need to gain flexibility to be able to compensate for the ups and downs of climate and markets while always keeping their sustainable aim in sight.

Typical of Aragón's Mediterranean climate were the aridity and the irregularity of rains (**Exhibit 6**). About 79% of Aragón's farming area was rainfed⁸ (dry land that relies on natural rainfall for farming), more than double the size of the irrigated areas (mainly in the River Ebro basin). Arento's rainfed wheat production always faced the threat that in extremely dry years, farmers could find themselves with no harvest at all.

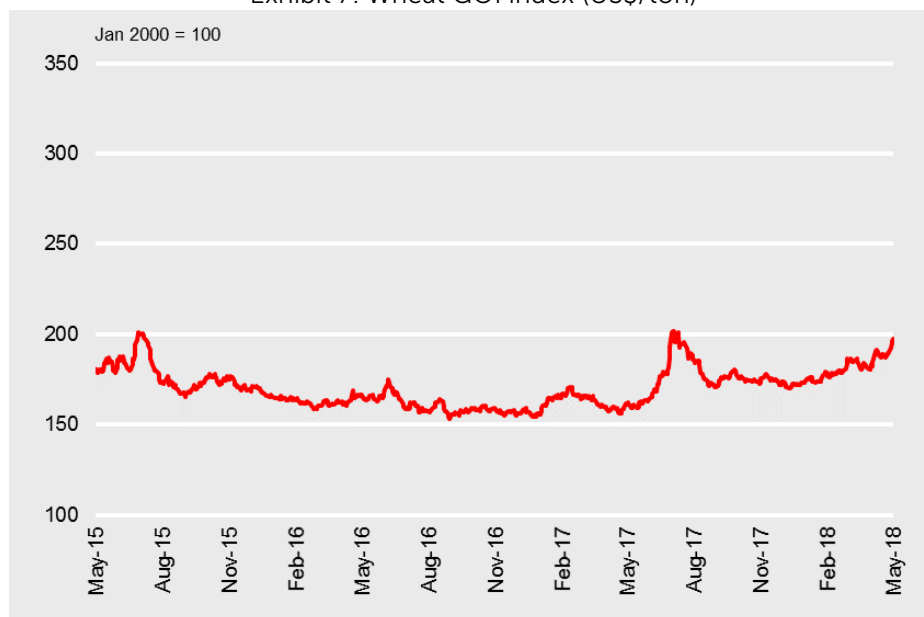
Exhibit 6: Rain and average temperature in Zaragoza between January 2015 and June 2017



Source: Gobierno de Aragón at www.aragon.es

Wheat prices depended heavily on climatic conditions, demand and logistic difficulties. The wheat grains and oilseeds index (GOI)⁹ shows that prices varied worldwide between US\$153 and US\$200 per metric ton between 2015 and 2018 (Exhibit 7).

Exhibit 7: Wheat GOI index (US\$/ton)



Source: International Grains Council

Cereals on the whole were a cheap product—wheat price in Spain, in May 2018, was €187.5 per metric ton—with closed and limited markets. According to López, only five companies in Spain bought semolina to produce pasta in 2017, which made Arento's need to open up new markets very real.

To deal with climatic and market demands, Arento invested in research, development and innovation through Arento Genetics and Management. The latter developed research in genetic improvement, new commercial varieties, specialized product research for clients, and seed production and certification. It also innovated on wheat varieties by improving their hardiness (adaptation to soil and climate), vegetal health (resistance to illnesses and bugs), quality (protein content and glassiness), color, and productivity.

Together with innovation, Arento kept its long-term sustainable focus. The Group's corporate policy stated: "The company is committed to taking on activities to protect the environment by preventing, reducing and eliminating—whenever possible—pollution and waste generation. We will promote consciousness and participation of all employees, subcontractors and providers in the continuous improvement of quality, food safety, and the protection and preservation of the surroundings." In 2016 Arento achieved the international standards ISO 9001, Global G.A.P., ISO 14001, ISO 22000, SAE, and IFS; the company also invested in reducing particle emissions and noise reduction in all its productive centers. Arento furthermore fostered ecological production and launched a crop diversification project.

Ecological Production

Ecological production was another natural step Arento took towards a more sustainable future.

In 1991, the European Union (EU) recognized ecological agriculture as an alternative production method to conventional agriculture and established relevant regulations to govern ecological agriculture. Subsequently, in 1999, subsidies were granted by EU to ecological producers in Europe.

The institution that organized and ruled all Aragón ecological agriculture was CAAE¹⁰ (*Comité Aragonés de Agricultura Ecológica*, Aragón Committee of Ecological Agriculture). According to CAAE, "ecological, organic, or biologic agriculture means a non-invasive production method that manages—using traditional techniques that improve soil properties—to produce highly nutritional, sensorial food, respecting the environment without the use of chemicals. Soil fertility is maintained by using organic fertilizers and legume addition in multiannual crop rotations. Pest and weed control is achieved by keeping the nutrient balance in the soil, making adequate crop selection and using natural pest control methods."

Since CAAE's establishment in 1995, the ecologically cultivated area in Aragón increased from 5,400 ha to 56,460 ha in 2016,¹¹ which represented 2.8% of Spain's

ecological surface area. About 92% of Aragón's ecological surface was dedicated to cereals, legumes, grass and fodder; the remaining 8% was used for the production of olive oil, wine, almond, fruit and fresh vegetables.

Spain was the number one EU member state with regard to the number of hectares dedicated to organic farming in 2015,¹² with 1.97 million ha. The number of organic farmers reached approximately 33,000,¹³ and the biggest cultivated area was dedicated to cereals. Spanish organic production was export-oriented due to the strong consumer demands from central European countries. It was estimated that 80% of production was exported to Germany, France and the UK.

Arento (UTECA at that time) began commercializing durum ecological wheat in 1995. The EU subsidies motivated farmers to increase their ecological crop surfaces because it was a profitable business. The demand for ecological wheat grew gradually until the beginning of 2000 and then stabilized. López recalled there was a change in demand in 2010, when wheat became very expensive due to an oat trending food that raised the prices of cereals in the world. "People started demanding older wheat varieties, like buckwheat, and customers were willing to pay more for those differentiated products."

Considering that 79% of Aragón's agrarian farming area was a rainfed region, ecological wheat production was very simple and very difficult at the same time. With an average amount of rainfall between 300 and 500 ml per year, the area where wheat crops grew was extremely dry. This was beneficial on the one hand, because the climate did not allow for the growth of weeds, fungus, or grain insects like aphids or bugs. As a result, farmers did not need to use any herbicide treatment, fertilizer, or pesticide, besides small amounts of urea. The downside was that extremely dry years could bring very low, or zero harvest. "The challenge to having a viable business under these extreme conditions," explained López, "is that you need a back-up guarantee to obtain production, probably from irrigated areas, to be able to comply with your client's demands, irrespective of the weather."

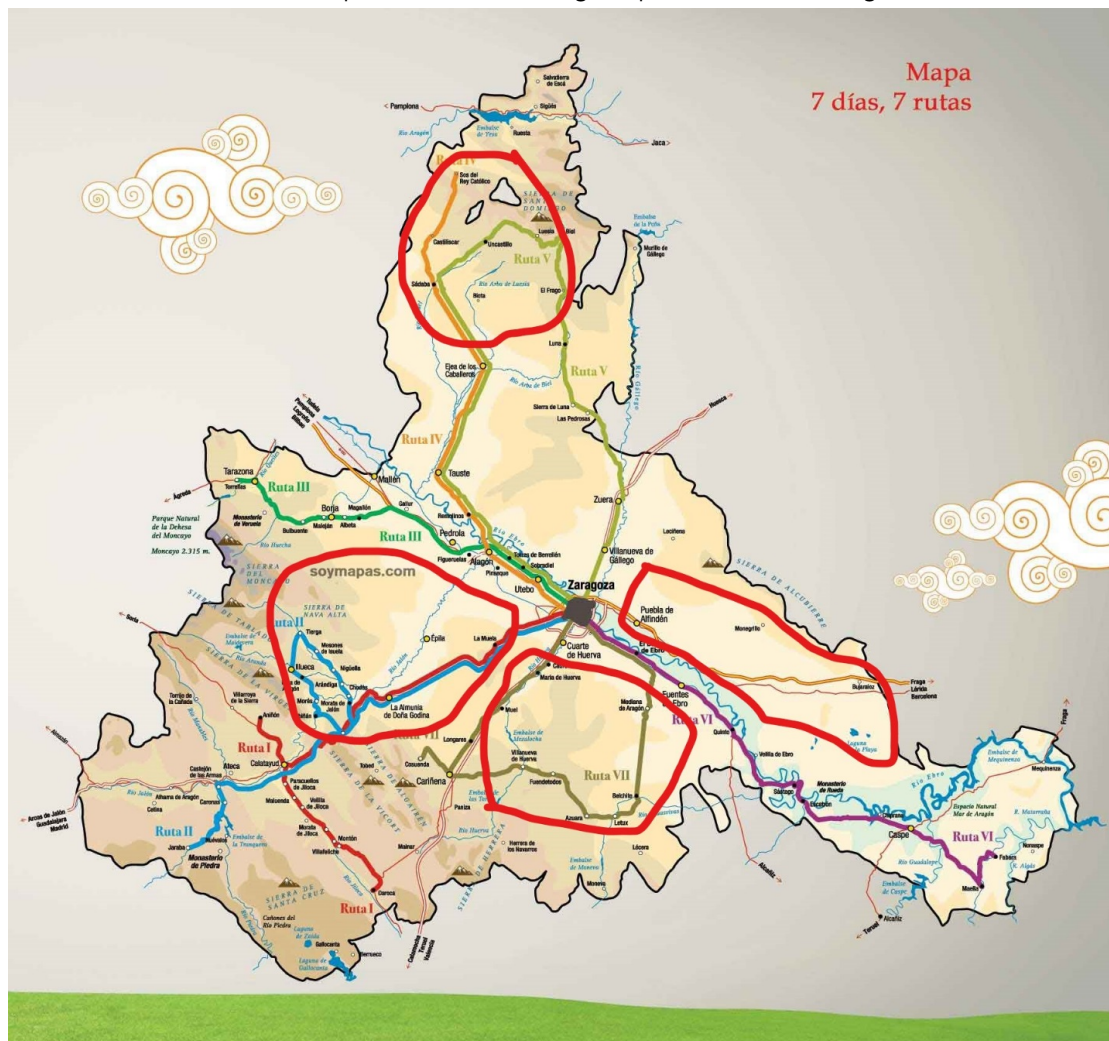
The farmer who wanted to produce ecological wheat would have to send a request to Arento and prepare a strict crop project. López explained that one could not grow ecological wheat and later conventional barley in the same soil. All crops cultivated in the same soil must be ecological. To pass from conventional to ecological production, one must go through a transition period of three years to allow the soil to purify from traces of pesticides and other chemicals remaining from previous crops. In the fourth year the product would be certified as ecological. CAAE would certify each step of the value chain and give authorization to commercialize the product on the ecological market. The farmer would obtain an ecological production certificate, Arento would get a trader certificate, and the factories would receive a transformation certificate. Arento was recognized in 2000 by CAAE as a certified ecological durum wheat semolina producer, and required an ecological certificate from the farmer prior to accepting or buying any ecological wheat.

But EU ecological regulations changed in 2013. Up until then, funding was based on the CAP (Common Agricultural Policy), which was considered as "the first pillar to

organic farms, in which they would benefit from the green direct payment without fulfilling any further obligations because of their overall significant contribution to environmental objectives.¹⁴ From 2014 onwards, the new CAP¹⁵ was reformulated to strengthen the competitiveness of the sector and required that all farmers take simple, proven measures to promote sustainability and combat climate change. As requirements for subsidies increased, farmers became reluctant to continue producing ecologically. "In general, the farmers who remained ecological were the ones interested in the ecological philosophy behind the business," said López. "But farmers located in dry areas were willing to go ecological anyway because they did not need any extra effort to move from conventional to ecological farming. It is a very simple harvest."

In 2017, Arento produced 32,000 metric tons of ecological durum wheat, equivalent to 10% of its total cereal production. The approximate crop surface was 4,000 ha with an average of 100 ha per producer, which implied a mean of 40 farmers dedicated to ecological wheat crops around Zaragoza (see Exhibit 8).

Exhibit 8: Map of Arento's ecological production in Zaragoza



Source: Arento

From this ecological wheat tonnage, however, Harinas Lozano—Arento’s company dedicated to producing flour—only transformed 1,000 metric tons to ecological semolina, which meant approximately 3%. Eduardo López said that the company projected to double the ecological semolina production to 2,000 metric tons by 2020, but despite of this, he added: “We haven’t been proactive in reaching ecological markets to sell the products directly. Most of the ecological production was still sold together with conventional wheat. We have not been proactive in ecological markets and still have to find that niche. We have the farmers, we have enormous amounts of land available. We must develop new ecological cereals that can be sold in Germany, a market that is growing, for example. We haven’t done this yet, but if we develop a good production and commercialization plan that proves to be profitable, then we have to go in that direction. To open markets is essential.”

According to *Organic in Europe, Prospects and Developments 2016*,¹⁶ Spain ranked among the top ten countries with the highest demand for ecological products in the world, behind Germany, France and the UK. Spain was already the first ecological producer in Europe and the fifth in the world, but it was only since recent years that internal demand had grown. Some Spaniards, for example, voluntarily chose to pay 2.07 euros for a bag of ecological wheat flour, instead of 0.42 euros for a bag of conventional wheat flour¹⁷ in a supermarket in 2016.

Diverfarming Project

Arento had diverse products and services, but it wanted to go a step further to diversify cropping as well. Arento joined the EU Diverfarming Project in May 2017.¹⁸

Crop diversification is a farming system that encourages production of a variety of plants and animals and their products on the same piece of land, as opposed to monocropping or large-scale specialization.¹⁹ Monocropping can cause severe environmental problems, including low soil biodiversity, low soil organic matter content, weak soil structure, and soil, air and water pollution.

With diversified cropping systems, dependence on a single crop is avoided, so that variability in prices, market, climate, and pests and diseases will not have such drastic effects on the local economy. Through diversification, farmers produce a variety of commodities apart from food and feed, depending on the type and complexity of the diversified cropping systems (e.g. firewood, flowers, honey, industrial products). They can shift from one crop to another depending on price and demand. They will also use less fertilizers, pesticides, machinery, energy and water, applying so-called low input management practices. All these will lead to reduced costs, increased economic stability, higher soil and land productivity, higher crop productivity and quality, and a better environment. In addition, farmers not only have more possibilities to access to new markets, the return of investments (ROI) will also happen in less time (e.g. in cases where trees are combined with short-term agricultural crops).²⁰

Part of the experimental area of the Diverfarming project was located on Arento’s

farms. Arento was ready to begin with diversified farming in cereal fields in Zaragoza as of September 2018. The experiment was designed together with CSIC (Spanish National Research Council) and consisted of testing a low input diversified cropping system as an alternative to monocropping during the harvest seasons 2018, 2019 and 2020 in rainfed as well as irrigated areas.

In the rainfed area (a 100-ha farm with a 1-ha trial), the crops were wheat, barley and vetch (a legume), harvested in consecutive years with a reduction in tillage intensity. In the irrigated area (a 40-ha farm with a 1-ha trial), two trials were designed with barley and maize; and pea and maize, both with nitrogen fertilization optimization.

The objective of the project was to economically evaluate a 4-year crop rotation, demonstrating that it was possible to maintain the income level and, at the same time, reduce the expenses caused by weed control, perform more efficient soil utilization, and improve the soil structure. "All these are an alternative to monocropping, which ultimately impoverishes the soil," warned López. "The Diversifarming project also values the possibility to link industry contracts to the four-year rotation production, so the farmers can have an income guarantee, regardless of prices and markets."

Diversified crop rotation was already a well-known technique to ecological production farmers. By using this system, they facilitated weed and pest control. For example, they cultivated ecological durum wheat one year, the next year they planted a legume or barley, and then again wheat or sunflower. Their production was less valuable because they cultivated different crops with different prices, but the reduced expenses in weed and pest control compensated for the lower income. Also, as all these diversified crops were ecological, farmers gained access to different ecological markets.

López said, "Diversified farming is a plus to any crop because it implies agricultural benefits to the soil in any case. In general, it is a management model that improves the profitability and sustainability of any harvest."

Crossroads

On January 18, 2018, Enrique Arcéz was elected the new president of Arento with 85% of the votes.²¹ Once elected, he summoned everyone to work for "a new Arento, a renewed project, better dimensioned, with a strategy closer to baseline co-ops that continues to work in local and international markets and to keep bringing farm products directly to consumers in Aragón and Spain."

With the new president's election, a 4-million-euro capital increase was approved. The 13 co-ops on the board signed an agreement for the capital raise, through which each co-op committed to contributing 5,000 to 200,000 euros, depending on its size and input, to Arento.

Although Arento had a 32-million-euro debt, it still had large volumes of sales to

cash in.²² This enabled the Group to start negotiating new financial agreements in early 2018 with its main creditors, Bantierra and Caja Rural de Teruel, supported by the Aragón government's offer of a 14 million-euro guarantee. Six months later, Arento signed a final agreement with 19 financial organizations for a total amount of 69 million euros²³ that finally did not require the local government's guarantee.

As soon as financial demands calmed down, Arento started to implement a cost reduction of 1.2 million euros per year, sell non-core assets, and divest minor stakeholders that were not relevant to the core business of the company. The aim was to reduce the number of baseline co-ops from 88 to 40. Many of the co-ops sidelined had been inactive for a very long time or were too small, or they had gone bankrupt during the financial crisis. The co-ops that remained were the ones that constituted 90% of Arento's business activity.

In July 2018, Arcéiz defined a long-term strategy and viability plan with Deloitte and the newly appointed managing director, Alfonso Campo—Arento's former finance and administration director—now in charge of strategy implementation.²⁴ Apart from further financial and administrative restructuring, they were also looking into stepping up sustainability.

Social, economic and environmental sustainability had remained a priority for Arento even during its crisis. Now that Arento had a more efficient organization, better sized, with close relationships among co-ops, as well as an enormous land endowment with ecological products and diversified crops, in addition to the diversified farming management model and ongoing support from the scientific community behind Diverfarming, the chance of success was greater than ever. The critical challenge was to bring its products to larger markets—local as well as international—without hurting the environment and local communities. This would require holistic thinking and coordination between vast arrays of stakeholders across the whole value chain. The end result Arento strived for was a responsible business model that guaranteed sustainable practices from production to commercialization, which assured financial returns for farmers, suppliers and the corporation alike. The question was how to get there from where it stood. There were still probably large gaps to fill in, but one thing was for sure: Arento had already set off in a new direction and would make an even greater impact on rural Aragón's life.

Appendix A: An agrarian cooperative in Tauste, Zaragoza



Appendix B: Durum wheat stalks, grain and flour



Appendix C: Diverfarming project objectives

1. Development of new systems: To develop and test different diversified cropping systems (rotations, multiple cropping and intercrops for food, feed and industrial products) under low-input practices for conventional and organic systems, for field case studies, to increase land productivity and crop quality, and to reduce machinery, fertilizers, pesticides, energy and water demands.
2. Benefits study: To explore how the diversified cropping systems can, under low-input practices, increase the delivery of ecosystem services (soil fertility, prevention of soil and water contamination, water availability, reduced greenhouse gas (GHG) emissions, carbon sequestration, erosion prevention, above- and below-ground biodiversity, and pest and disease control).
3. Impact evaluation: To evaluate how the downstream value chains and the actors involved will be impacted by the new diversified cropping systems, and so to propose new organizational structures adapted to the new production models from a technical, social, cultural and economic perspective, from farmer to consumer.
4. Model development: To develop and test agro-ecosystem models that will explore how the diversified cropping systems influence the land productivity and the soil-plant system in order to select the most suitable option for end-users and policy-makers for each pedoclimatic region and farm size.
5. Systems evaluation: To evaluate the proposed diversified cropping systems on the basis of their economic impact, at all levels. To analyze relevant policies for synergies, conflicts and feedback loops and to develop a set of indicators for characterizing an enabling environment for sustainable crop production and value chain adaptation.
6. Communication and dissemination: To communicate, disseminate and engage with European farmers, cooperatives, industry and logistics to develop, hone and embrace diversified cropping systems under low-input practices with organized downstream value chains.

Endnotes

¹ An agrarian cooperative is a company constituted by more than five farmers to commercialize their crop production. Arento is a 'second-degree' cooperative, which means it encompasses smaller baseline cooperatives (or first-degree cooperatives) that represent the interests of individual farmers and stockmen.

² Figures from Arento official website and the corporate annual report 2016, retrieved in January 2018.

³ 2017 figures, based on El Periódico de Aragón

http://www.elperiodicodearagon.com/noticias/economia/credito-asfisia-arento_1256304.html

⁴ <http://www.diverfarming.eu/index.php?lang=en>

⁵ See section Diverfarming Project for details.

⁶ Agrarian Cooperative Report published in June 2017, cited by Agronews Castilla y León at <http://www.agronewscastillayleon.com/espana-cuenta-con-3762-cooperativas-agrarias-sabes-como-son-te-lo-contamos-en-15-datos>

⁷ http://www.abc.es/sociedad/abci-despoblacion-vacia-media-espana-201701290210_noticia.html

⁸ http://www.derechoaragones.es/i18n/catalogo_imagenes/grupo.cmd?path=201272

⁹ International Grains Council at

<https://www.igc.int/downloads/gmrsummary/gmrsumms.pdf>

¹⁰ <http://www.caaearagon.com/>

¹¹ http://www.mapama.gob.es/es/alimentacion/temas/produccion-ecologica/estadisticas_ae_2016_connipo-web_tcm30-429288.pdf

¹² www.fibl.org at <http://orgprints.org/31197/1/willer-lernoud-2017-global-data-biofach.pdf>

¹³ <https://www.greeneuropeanjournal.eu/organic-farming-and-agricultural-movements-in-spain/>

¹⁴ https://ec.europa.eu/agriculture/organic/eu-funding/cap-and-rural-development_en

¹⁵ https://ec.europa.eu/agriculture/organic/eu-funding/eu-funding-and-the-new-cap_en

¹⁶ https://gastronomiaycia.republica.com/wp-content/uploads/2016/11/datos_consumo_ecologico_europa.pdf

¹⁷ <https://www.coinc.es/blog/noticia/diferencia-precio-comida-ecologica-y-normal>

¹⁸ The coordinator and soul of the project was Raúl Zornoza from the Politechnical University of Cartagena, who developed the idea together with a team of scientists and agroindustry experts across Europe. One of them was Jorge Alvaro Fuentes from the National Research Council Station at Zaragoza (Aragón, Estación Experimental del Aula Dei, Consejo Superior de Investigaciones Científicas), who brought López from Arento into the project.

¹⁹ <http://www.diverfarming.eu/index.php/en/diverfarmingpractices-2/repository-4>

²⁰ <http://www.diverfarming.eu/index.php/en/diverfarmingpractices-2/repository-4>

²¹ <http://www.europapress.es/economia/red-empresas-00953/noticia-arento-aprueba-ampliacion-capital-millones-euros-elige-enrique-arceiz-nuevo-presidente-20180118172946.html>

²² <https://www.heraldo.es/noticias/economia/2018/01/21/enrique-arceiz-arento-tiene-deuda-si-pero-tambien-negocio-ventas-1220238-309.html>

²³ <http://www.agro-alimentarias.coop/noticias/ver/ODA2NA==>

²⁴ According to domestic sources cited by El Periódico de Aragón