

Using Collective Farming to Improve Farm Structures and Drive Generational Renewal in Spain

Le recours à l'agriculture collective pour améliorer les structures agricoles et stimuler le renouvellement générationnel en Espagne

Kollektive Landwirtschaft zur Verbesserung der landwirtschaftlichen Strukturen und zur Förderung des Generationswechsels in Spanien

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Land abandonment and joint crop management (JCM)

Cropland abandonment is common in Europe (Lasanta *et al.*, 2017). Almost 11 per cent of productive land in the European Union is at risk of abandonment (Perpiña Castillo *et al.*, 2018). Land abandonment occurs not only in marginal and remote areas but also in densely populated and accessible agricultural areas. Cropland abandonment is a major problem in Spain where almost 10 per cent of the utilised agricultural area has ceased to be cultivated between the last agricultural censuses (1999–2009) published by the Spanish Statistical Office (INE). Waiting for the publication of the new agricultural census for 2020, available geographical information systems (e.g. SIGPAC, used by the Ministry of Agriculture, Fisheries and Food) suggest that significant cultivated areas are being abandoned.

Land abandonment has social, environmental and economic implications. From an ecological perspective, ceasing cultivation could help restore natural ecosystems and increase vegetation cover, biodiversity and carbon sequestration. However, abandoned land causes landscape degradation, increasing the risk of fires in unattended plots and the spread of uncontrolled pests.

Land systems have the properties of complex systems (Meyfroidt *et al.*,

2022) and there is no single bullet solution to issues such as farmland and cropland abandonment. Public policies, including the current Common Agricultural Policy (CAP), offer several measures aimed at maintaining biodiverse areas. Nevertheless, this article explains why sustainable and profitable farming is a way to preserve land whilst creating opportunities for young people. This article describes the features and advantages of collective cultivation. The focus is on an emerging strategy in Spain that enables joint cropland management (JCM) by agri-food cooperatives that pool the cultivation functions of members' lands.

“ La gestion conjointe des terres cultivées est une alternative intéressante lorsque les opérations traditionnelles du marché foncier, telles que la vente et la location, ne fonctionnent pas correctement. ”

In a recent survey of 112 cooperatives in Spanish Mediterranean regions, 14 per cent declared that they had a joint cropping section. In many cooperatives, members abandon cultivation because of low production profitability, aggravated by smallholding fragmentation. Elderly farmers' children choose to study and work in activities unrelated to agriculture, so many farmers do not find successors. They lack individual incentives for renewing varieties of permanent crops and ensuring the quality required for the market. Joint cropland management provides a feasible alternative.

New potential farmers usually face critical entry barriers. Examples include investment in machinery and other capital costs, which have increased with land fragmentation. There is no single way of tackling generational renewal in European countries. The new CAP proposes an across-the-board approach to create incentives for more attractive farming. The CAP's national strategic plans involve different measures, including extra payments to young farmers, as well as rural development schemes for the creation of new businesses in rural economies. Apart from these measures, JCM represents a business model that is not necessarily driven by public income or capital subsidies and that involves

organisational innovation in agri-food cooperatives.

What is joint cropland management (JCM) and what are its features and advantages?

JCM consists of any scheme that allows the joint cultivation of land plots by agricultural cooperatives, mainly vertically integrated marketing cooperatives. Such schemes have proven effective for preventing the abandonment of small-scale land plots and for tackling demographic challenges in rural areas (Piñeiro *et al.*, 2021). To generate and transfer knowledge on these initiatives, the Operational Group for Social Innovation in Land Management (GO_InnoLand, see goinnoland.wordpress.com) was created in 2020 under the European Innovation Partnership for Agricultural Productivity and Sustainability (EIP-AGRI).

“Die gemeinsame Bewirtschaftung von Anbauflächen (JCM) ist eine attraktive Alternative, wenn traditionelle Landmarktoperationen, wie Verkauf und Verpachtung, nicht richtig funktionieren.”

JCM improves the profitability of cooperatives through more efficient resource management (Garcia-Alvarez-Coque *et al.*, 2021). In addition, JCM can encourage the employment of young people. However, a crucial advantage of JCM is that it does not necessarily change cooperative members' land ownership. Consequently, the transaction costs involved in improving farm structures can be substantially reduced. The cooperative, which initially handles marketing and processing, manages

more surface area according to some technical criteria based on the needs of the business plan, providing economies of scale and greater control of quality of production in high volumes. JCM initiatives can then reduce marketing costs that arise when low volumes of products are marketed by the cooperative.

In summary, JCM initiatives can have different objectives, including increasing the production of products marketed by the cooperative, expanding the cooperative's supply, improving product quality, attracting young people, preventing land abandonment, managing the land of elderly members, keeping land in production and facilitating the management of land owned by non-professional farmers who wish to abandon cultivation. Thus, JCM is an appealing alternative where traditional land market operations, such as selling and leasing, don't work properly. JCM strategies could also help to avoid land concentration by democratising land production and land tenure.

Evidence that joint cultivation works

JCM is a tool for grouping plots and increasing scale. Using data from the Farm Accounting Data Network (FADN), researchers from the GO_InnoLand Group have found evidence of substantial efficiency gains in the use of labour when the size of the farm plot exceeds one hectare, even in the case of small-scale production (Cervera-Ferrer, and Garcia-Alvarez-Coque, 2021; Tudela-Marco *et al.*, 2021). This finding is relevant for regions where smallholdings are common. For example, in fruit production, increasing a farm's turnover from €25,000 to €100,000 could more than double the gross value added per hectare (Cátedra de Estructuras Agrarias de la Universitat Politècnica de València and Grupo Operativo GOINNOLAND, 2020). Moving towards a greater scale gives professional farmers a feasible business proposition. If cooperatives lead the process, the

reduction in labour intensity can benefit cooperative members, mostly older landowners, especially in terms of moving from micro-farm models to more sustainable segments. This process may be especially important in cooperatives with a lack of generational replacement and innovative approaches.

In 2020, GO_InnoLand carried out a survey of agri-food cooperatives in Mediterranean Spanish regions (Calafat-Marzal *et al.*, 2022) to determine the extent to which they offer members the integral management of plots of land or the grouping of services to attract new professionals. The survey provided 106 responses across five autonomous communities in Mediterranean Spain (Andalucía, Castilla-La Mancha, Catalonia, Murcia and Valencia). On average 13 per cent of members were under 40 years of age. In 60 per cent of cooperatives, less than 10 per cent of members were aged under 40 years, and nine cooperatives reported having no members under 40 years of age. In two-thirds of the sample, less than 25 per cent of young members were engaged in agriculture as their primary activity. Offering joint cultivation to such members or to other trained young farmers provides a professional alternative before ending cultivation. The average number of members of retirement age amongst the surveyed cooperatives was 50 per cent. In total, 60 per cent of cooperatives stated that more than 50 per cent of their members were aged over 65 years, and five responded that more than 90 per cent of their members were aged over 65 years.

For most cooperatives, land abandonment is a real issue, not least because of inefficiencies of physical assets. The surveyed cooperatives reported that the percentage of area abandoned in the last five years was, on average, 31 per cent (Calafat-Marzal *et al.*, 2022). The Catalan cooperatives had the highest

Table 1: Social and economic drivers of the grouping of farmland plots in agri-food cooperatives

Condition	Description
Social capital	Trust in cooperative leadership
Economies of scale	Reduction of marketing and production costs
Transaction costs	Homogeneous membership, homogeneity of interests, land fragmentation, social and structural policy environment
Governance	Leadership by the cooperative board, inclusion, promotion of women and young members
Human capital	Existence of professional farmers, cooperative staff, young farmers
Size	Minimum size requirements
Participation in collaborative networks	Participation in associations of cooperatives and other partnership frameworks
Product or process innovation	Crop renewal, new varieties, new products, new processes

Source: Authors' compilation.

percentage, with 64 per cent of the area abandoned by members. Members confirmed that low profitability and the lack of replacement were the main obstacles to continuing to operate.

Most of the surveyed cooperatives reported that they had a section supporting cultivation, although only 18 cooperatives were involved in some kind of JCM model. In total, the surveyed cooperatives covered 3,254 hectares under JCM. There was a considerable range in the number of such hectares (from 2 ha to 1,500 ha). These cooperatives reported being mainly engaged in the marketing and production of citrus fruits, olives, and other fruits and nuts. Of the cooperatives that had not ventured into joint management, 32 per cent declared that they were considering JCM in their plans.

More than 60 per cent of these cooperatives tried to attract women and young people to join. Most cooperatives did not show signs of substantial innovation or the promotion of new organic crops, varieties or production systems. All except one of the cooperatives had ventured into collaborative activities with other cooperatives.

What drives joint cropland cultivation?

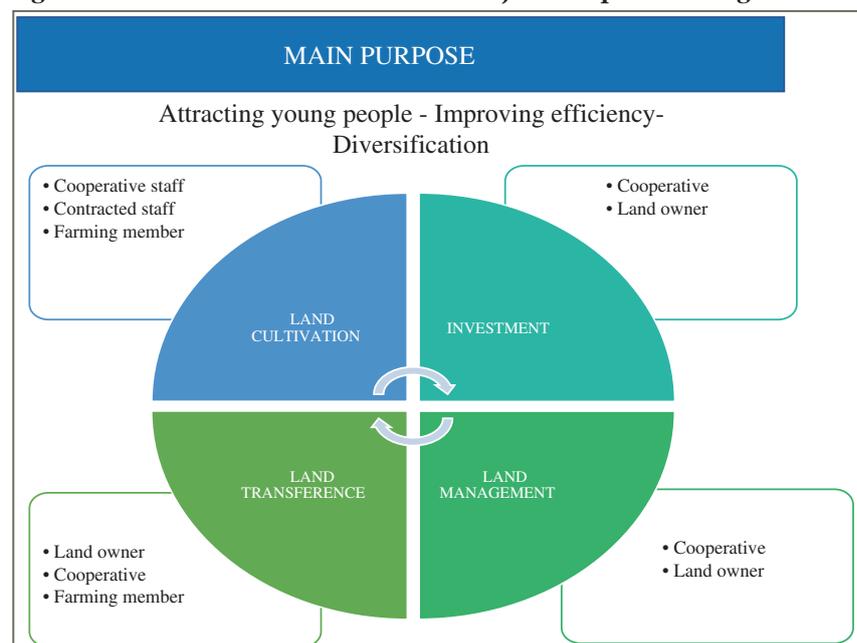
Based on the survey findings, GO_InnoLand identified the characteristics for agri-food cooperatives to undertake JCM

initiatives (Piñeiro *et al.*, 2021). The first is minimum required size. This characteristic relates to access to capital, the seriousness of the problem and the opportunity to achieve economies of scale. There is also a risk of substantial transaction costs for collective action in cooperatives with larger and more heterogenous membership. Hence, a second key ingredient is governance, which is linked to practices that enhance social capital, improve accountability and open leadership to women and young people.

Once the minimum size and open governance conditions have been fulfilled, there are two alternative recipes for JCM. One of them is

observed in cooperatives with a considerable proportion of members at advanced age and, therefore, the number of cropland plots at risk of abandonment is significant. The second recipe is illustrated by cooperatives that, regardless of the average age of members, are willing to undertake technological and non-technological innovations, as well as becoming involved in collaboration networks with other cooperatives or partners. In sum, the profile is that of an active cooperative that foresees potential issues due to the age of its members but that accepts a kind of open and innovative leadership. The key drivers of JCM are summarised in Table 1.

Figure 1: Actors and functions involved in joint cropland management



Source: Authors' compilation.



Professor Garcia Alvarez-Coque (center left) in a working meeting with Myriam (left), Lorena (on the screen), Ana and Josep, innovation agents for Spanish cooperatives © Jose-Maria Garcia-Alvarez-Coque.

Who does what in JCM models?

JCM involves three types of actor: landowners, cooperatives and the people who cultivate the land, who may or may not be landowners or members of the cooperative. The actors and main stages of the process are illustrated in Figure 1.

In general, the person who transfers the land cannot manage it and take charge of production for several reasons, principally advanced age, other jobs outside agriculture or a lack of capital for upgrading the farm and improving productivity (e.g. machinery and planting).

In most of the surveyed JCM initiatives, investment in new plantings or reconversion of existing plantings is primarily carried out by the cooperative itself. In this model, the cooperative's technical staff are often in charge of the management and decision-making regarding cultivation. One of the common patterns in this type of JCM initiative is that the cooperative itself borrows or provides the capital needed for financing the structural and

productive upgrading of members' land plots. Initially, elderly members may have no successors to continue farming. In these cases, the cooperative bears the plot's reconversion costs, including sustainable innovations, new plantings, and irrigation facilities, to make the land compatible with the cooperative's marketing strategy in terms of type and quality of production. A contract is signed stipulating that landowners do not lose their property but instead let the plot in exchange for rents or for part of the sale value of the produce from the land. Certain techniques can be helpful in the process (e.g. explicit recognition of the landowner who has let the plot for sustainable agriculture, agro-diversity, and landscape conservation). The duration of the lease contracts is 3 to 25 years, depending on the payback time necessary to recover the investment. However, provisions for recovering the right for land use may be included in the contract. For the time being, such initiatives are regulated through contracts between

private parties, so breaches must be resolved through traditional legal channels.

Joint cultivation by the cooperative staff is a clear chance to keep land in a territory-based production model and to offer professional opportunities to young people. Some other JCM models are also effective at attracting young farmers (or entrepreneurial farmers who may not necessarily be young). Such models include when the cooperative acts as a mediator between the landowner and a potential grower who will become a cooperative member or partner. Some cooperatives, as in the example of Uni6 Nuts (see Box 1), prioritise young and full-time farmers who are already trained or are in the final steps of their agricultural education. Interestingly, apart from enhanced social capital and trust, the limiting factor for the success of JCM initiatives is the availability of trained young people to become cooperative partners. Human capital is therefore crucial for many

Box 1: Unió Nuts – Collective farming in practice

In 2015, Unió Nuts, a second-tier cooperative located in the province of Tarragona, undertook an almond tree planting project to ensure almond production and marketing. The almond project had the added objective of helping professional farmers and landowners make their farms profitable and avoid the progressive abandonment of land and population reduction in rural areas.

The project has participation from all actors involved. The actors differ in their contribution, responsibility and rewards related to the project. One group of actors consists of owners of abandoned land. The owners sign a lease agreement with the cooperative for a minimum of 25 years. The cooperative then identifies a professional farmer to whom Unió Nuts cedes the land for the same period of the lease and who is responsible for cultivating the crop. The cooperative staff look for young farmers from the region, preferably women.

The cooperative is in charge of finding the land, cultivating the land (preparing the land, installing the irrigation system and planting new varieties of almond trees), providing technical advice to the farmer and managing the almond harvest at the right time.

Value distribution of the almond sales is usually set at 10 to 15 per cent for the landowner, 60 to 65 per cent for the farmer, and 25 per cent for Unió Nuts. The cooperative's retribution is earmarked for the following purposes: 5 per cent for advisory services, 5 per cent for self-insurance and 15 per cent for harvest and amortisation of the investment in the farm.

The project began with the planting of 100 hectares of almond crops spread over seven farms with different sizes and owners. In the early years of the project, Unió Nuts started several farms with less than five hectares of land. However, over the years, these farms found it difficult to recover the initial investment and achieve the positive results expected by the parties. Hence, Unió Nuts established a minimum area of 10 hectares per farm. A minimum farm size is relevant to the cooperative and to the farmer who will oversee the production. In other words, the size of the farm should be sufficient to recover the investment made by the cooperative and to cover the costs of maintenance and production on the farmer's side. In order to include as many plots at risk of abandonment as possible, in some cases contiguous plots are joined together to reach the necessary size. Currently, the cultivated area within the almond project is about 600 hectares spread over 40 farms belonging to different owners who support more than 15 professional farmers. This project aims to fight against farm abandonment and low profitability. It may also overcome difficulties in introducing new crop varieties and developing new production models such as organic farming and fourth range processed products.

of the steps, including the role of social facilitators, extensionists and agricultural schools.

Public policy implications

Unlike the standard approach of public support based on direct payments, rural development interventions can facilitate the process of soft consolidation of cultivated land. Some measures that are already common in the CAP can be of help. Examples include support for setting-up of young farmers and the producer organisations' operational programmes to co-fund some of the necessary investment.

In addition to traditional approaches, European and national authorities can create a conducive environment by following five lines of action.

1. To support social and organisational innovation and

“JCM is an appealing alternative for situations where traditional land market operations, such as selling and leasing, don't work properly.”

cooperation measures under rural development programmes. With relatively little investment (300,000 euros over two years), the Operational Group GO_InnoLand worked with over 30 cooperatives, providing technical support to draw a roadmap for creating JCM and trust amongst potential partners.

2. To provide financial instruments that offer guarantees to enterprises. These instruments do not

necessarily have to be capital or income subsidies.

3. To supply the technical assistance needed by cooperatives that do not know how to proceed. For example, assistance can be provided to define the conditions of land transfer and the contractual conditions between agents.
4. To improve the professional training of farmers and to link it to cooperatives that may become involved in JCM.
5. To strengthen collaborative networks for organisational innovation. Second-tier cooperatives and partnerships with rural foundations and universities actively provide an atmosphere of trust and technology. One example is the use of GIS and other digital tools to enable smart collective management.



Almond trees form the main productive orientation of Unio, an emblematic land consolidation project in the area of Tarragona, Catalonia, Spain. © Veronica Piñero.



Go_innoland is an Operational Group funded by the European Agricultural Fund for Rural Development, with the aim of promoting joint land management initiatives and new entrants of young farmers. © Go_innoland Operational Group. <https://goinnoland.wordpress.com>

The advanced age of cooperative members, the weak economic performance of farms and the progressive abandonment of cropland are interrelated problems. The conclusion of the analysis presented in this paper is that something can be done to prevent cooperatives from losing their production capacity and compromising their existence in rural areas. JCM is a potential practical solution to the problem of generational renewal of cooperatives. It increases the size of farms, which can then become profitable operating units. Cooperatives that can continue to provide their marketing services and offer the possibility of creating profitable farms can provide an excellent point of entry for new entrants in the agricultural sector and one that is compatible with a long-term vision for European agriculture.



Go_innoland Operational Group has carried out multiple dissemination activities. One example is this video on the Unio's Almond project. © Go_innoland <https://youtu.be/DjH3VgMM4WQ>

Further Reading

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Summary

Using Collective Farming to Improve Farm Structures and Drive Generational Renewal in Spain

 Land abandonment and the lack of generational renewal in farming are serious issues in European agriculture with social, environmental and economic implications. This article reports on the recent experiences of joint cropland management (JCM) in Spain. These initiatives are based on the grouping of plots to achieve different objectives through social and organisational innovation. JCM involves three types of actor: landowners, cooperatives and the people who cultivate the land, who may or may not be landowners or members of the cooperative. Implementation of this strategy, which is being adopted by an increasing number of agri-food marketing cooperatives, requires substantial social capital. Therefore, collaboration between public and private actors is needed to generate and transfer knowledge on these initiatives. The Operational Group on Social Innovation in Land Management (GO_InnoLand) was created in 2020 to support JCM processes, which help young farmers who are setting up in the agricultural sector. JCM initiatives could be one way to prevent the abandonment of small-scale land plots and drive the demographic challenge. Public policies can support this strategy by enhancing social and organisational innovation, facilitating financial instruments, providing technical assistance, improving collaboration networks and linking landholders with new professionals.

Le recours à l'agriculture collective pour améliorer les structures agricoles et stimuler le renouvellement générationnel en Espagne

 Dans l'agriculture européenne, l'abandon des terres et le manque de renouvellement des générations d'exploitants agricoles sont des problèmes graves qui ont des implications sociales, environnementales et économiques. Cet article rend compte des expériences récentes de gestion conjointe des terres cultivées (GCT) en Espagne. Ces initiatives reposent sur le regroupement de parcelles pour atteindre différents objectifs grâce à l'innovation sociale et organisationnelle. La GCT implique trois types d'acteurs: les propriétaires fonciers, les coopératives et les exploitants, qui peuvent être ou non propriétaires fonciers ou membres de la coopérative. La mise en œuvre de cette stratégie, adoptée par un nombre croissant de coopératives de commercialisation agroalimentaire, nécessite un capital social important. Par conséquent, une collaboration entre les acteurs publics et privés est nécessaire pour générer et transférer des connaissances sur ces initiatives. Le Groupe Opérationnel sur l'Innovation Sociale dans la Gestion des Terres (GO_InnoLand) a été créé en 2020 pour accompagner les démarches de GCT accompagnant les jeunes agriculteurs qui s'installent dans le secteur. Les initiatives de GCT pourraient être un moyen d'empêcher l'abandon des parcelles à petite échelle et de relever le défi démographique. Les politiques publiques peuvent soutenir cette stratégie en renforçant l'innovation sociale et organisationnelle, en facilitant les instruments financiers, en fournissant une assistance technique, en améliorant les réseaux de collaboration et en mettant les propriétaires fonciers en contact avec de nouveaux professionnels.

Kollektive Landwirtschaft zur Verbesserung der landwirtschaftlichen Strukturen und zur Förderung des Generationswechsels in Spanien

 Die Stilllegung von landwirtschaftlich genutzten Flächen und der fehlende Generationswechsel sind gravierende Probleme in der europäischen Landwirtschaft mit sozialen, ökologischen und wirtschaftlichen Folgen. Dieser Artikel berichtet über die jüngsten Erfahrungen mit der gemeinsamen Bewirtschaftung von Anbauflächen (joint cropland management, JCM) in Spanien. Diese Initiativen beruhen auf der Zusammenlegung von Parzellen, um durch soziale und organisatorische Innovationen verschiedene Ziele zu erreichen. An der gemeinsamen Bewirtschaftung sind drei Arten von Akteuren beteiligt: Landeigentümer bzw. Eigentümerinnen, Genossenschaften und die Menschen, die das Land bewirtschaften. Sie können entweder Landeigentümer oder -eigentümerinnen oder Genossenschaftsmitglieder sein oder auch nicht. Die Umsetzung dieser Strategie, die von immer mehr Genossenschaften der Agrar- und Lebensmittelvermarktung angewandt wird, erfordert erhebliches Sozialkapital. Eine Zusammenarbeit zwischen öffentlichen und privaten Akteuren ist daher notwendig, um Wissen über diese Initiativen zu generieren und weiterzugeben. Die Operationelle Gruppe für soziale Innovation in der Landbewirtschaftung (GO_InnoLand) wurde 2020 gegründet, um JCM-Prozesse zu unterstützen. Sie soll jungen Landwirten und Landwirtinnen helfen, sich im Agrarsektor niederzulassen. JCM-Initiativen könnten eine Möglichkeit sein, die Stilllegung von Kleinflächen zu verhindern und die demografische Herausforderung zu bewältigen. Die öffentliche Politik kann diese Strategie unterstützen, indem sie soziale und organisatorische Innovationen fördert, Finanzinstrumente erleichtert, technische Hilfe leistet, Kooperationsnetzwerke verbessert und Landwirte und Landwirtinnen mit neuen Fachleuten zusammenbringt.

summary