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Reseña

González de Molina et al. The social metabolism of Spanish Agriculture (1900-2008). The Spanish way towards industrialization. Cham, Switzerland, Springer Open, 2020, 281 pp. ISBN: 9783030209001.

If asked to sum up the reviewed book in a line, it might be “Agriculture’s confirmed loss of relative weight in the economy is not the end of the story”. This is one of the statements made in the ground-breaking book *The social metabolism of Spanish Agriculture (1900-2008). The Spanish way towards industrialization*. González de Molina and his colleagues challenge the conventional agrarian narrative of Spain by adopting a new approach which places sustainability rather than growth capacity in the center. In this framework, *sustainability* refers to whether the sector was able to grow over time without deteriorating its social and ecological resources.

The words of who is considered the “father” of Ecological Economics, Georgescu-Roegen, essentially inspired the authors’ proposal. Late in the 70’s, he claimed that “the economy’s ultimate goal is not the production and consumption of goods and services, but the reproduction and improvement of the processes necessary for their production and consumption” (p. 6). Roegen also distinguished between “flows” and “funds” elements, an idea which is also embraced in the book. Land, society, livestock and technical means of production are the four “funds” taken into account to address Spanish agrarian sustainability.

But, how do they do that? The authors develop a novel methodological and theoretical approach, named “Agrarian Metabolism”, which basically adapts the already operational Social Metabolism to the complexity of the agrarian sector. Agroecosystems are considered the basic unit of metabolic activity. To those not familiar with this terminology, Agrarian Metabolism refers to the “exchange of energy, materials and information that agroecosystems perform with their socio-ecological environment”. In this framework, existing metabolic methodologies and further instruments —many borrowed from Agroecology— are combined to conduct biophysical analyses. This kind of analysis is further integrated with the monetary, but always keeping the sustainability approach. Thus, the authors consider if the monetary growth was brought about in an environmental and socially sustainable manner (for example, was it enough for the agrarian population to be properly remunerated and thus maintain this fund?).

Those aspects (i.e. theoretical and methodological approach) are addressed in Chapter 1 of the book. Chapter 2 focuses on the sector’s output. It reviews animal and vegetal biomass flows based on net primary productivity, land use change and livestock specialization —among others—. Chapter 3 focuses on the input side. Mechanical traction, irrigation, fertilizers, crop protection and imports are analysed from an energy cost perspec-

tive. Chapter 4 is devoted to the agrarian population. It reviews the socioeconomic variables that explain its behaviour (such as income, employment, farm structures and household expenditure) and analyses the reproduction of this fund. Environmental impacts are explored in Chapter 5. It includes the energy efficiency of Spanish agriculture, the state of land and the impacts of the increasingly animal-based diet. Finally, chapter 6 examines the evolution of the Spanish Agrarian Metabolism as a whole, thus integrating all funds separately studied in previous chapters. The fundamental goal of the chapter is to describe its structure and dynamics in the framework of the Spanish economy, as well as the drivers of its change.

The book also includes an Epilogue in which some recent features are presented and Organic Farming springs up. Readers can also find Annex I and II. While the first describes in high detail the methods and sources (undoubtedly one of the strengths of the book), Annex II includes full datasets. One can imagine that such a vast project could only have been created thanks to an excellent team, composed of renowned researchers in the subject: the aforementioned Manuel González de Molina, David Soto Fernández, Gloria Guzman Casado, Juan Infante-Amate, Eduardo Aguilera Fernández, Jaime Vila Traver and Roberto García Ruiz.

So far, major contributions of the work have been pointed out, from the novel methodological approach, to the new portrait of Spain’s agrarian history resulting from it, as well as the numerous datasets. Apart from these, there is a contribution that I consider deserves special distinction: the calling to rethink economic orthodoxy and its many assumptions, and in particular, to revise the role of agrarian activities within the economy. As brilliantly supported in the book, such activities go beyond the production of food and raw material for the market, as they conceal environmental services provided by agroecosystems which are essential for the sustainability of life (and thus, the economy).

Once the reading is over, one is able to understand in deep how endangered the sustainability of agroecosystems in Spain is, as well as the drivers that led to this path. Thence, the history drawn is fairly dark. Nevertheless, the book is full of hope at the same time. The methodological and theoretical approach presented is inspiring, opening a new path for sound future research. Additionally, feasible proposals are made (such as Organic Farming practices), which can help to revert and/or surpass the harmful trends followed by the sector right now. To all interested in agrarian history, but also in moving towards a more sustainable and fairer world, the book is definitely a must read.

Noelia Parajuá Carpintero
University of Barcelona

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