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Rapid Rural Appraisal in the North-western Iberian Peninsula: Initial Outcomes

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The purpose of this article is to highlight the results of the application of the Rapid Rural Appraisal (RRA) methodology to a decaying mountain agro-ecosystem where abandoned lands predominate. This relatively new methodology[1] which is hardly present in western academic circles, by participatory techniques, attempts to overcome the inflexibilities associated with the conventional models, seeking to characterise agro-ecosystems using two basic elements: their structure and their function. Agro-ecosystem structure may be perfectly defined if we enumerate, describe and understand the function of its elements, taking into account the interrelationships involved. On the one hand, since the function of a given agro-ecosystem involves obtaining a previously established production, it should be analysed by applying the properties of productivity, stability, sustainability, equity and autonomy to the result obtained by the production.

Due to reasons of space, we shall leave the first question[2] to one side, turning our attention to explaining the behaviour and the function of the agro-ecosystem analysed, later moving on to establish and prioritise the improvement required to resolve the problems facing the agro-ecosystem.

Agro-ecosystem development

For a better understanding of the analysis of the function, however, we must first present some of the more characteristic results of the agro-ecosystem structure. See Figure 1 for these results. The context described in the Transect is where we should analyse the agro-ecosystem production of the agro-ecosystem in accordance with the methodological postulates of the new paradigm for rural development: Agro-ecosystem Analysis (AEA)[3].

The non-arrangement of historical series of productivity, the remaining series being derived from this, makes it impossible to carry out a quantitative analysis of agro-ecosystem behaviour. Nevertheless, AEA makes it possible to perform a qualitative analysis of its function by analysing the properties and planning of the same[4].

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[1] See MacCracken, J.A. et al. (1988) for a justification and design of an RRA strategy for studying agricultural development. See also Conway, G.R. (1986) and Altieri, M. (1993).

[2] This question is treated in depth in the Doctoral Thesis by the author.

[3] This is how Conway refers to Agroecosystem Analysis (AEA). See Conway, G.R. (1993), page 47.

[4] The semistructured interviews, maps and transects, seasonal calendars and, in short, the dialectical interaction involved in the research-participation process make it possible to identify the problems and opportunities associated with the agroecosystem, their incidence in the properties as a whole and their prioritization in terms of

Besides the possibility of subjecting the improvements considered to a comparative appraisal, in the sense commented above, AEA allows us to compare the behaviour of the agro-ecosystem at the various stages of its historical development. This is shown in Figure 2. The main conclusion drawn is that the social value of the agro-ecosystem has been reduced in all senses when comparing the traditional with the modern day agro-ecosystem. The change to scrubland of the area and the reduction in manpower are a symptom and result of lower productivity, stability and sustainability. It may be stated that the line of development followed by the agro-ecosystem in Vilar favours one agro-ecosystem, the existing one, where the amount of goods and services produced has been reduced, where it is necessary to turn to flows from another part of the economic system to satisfy human needs and where a greater inequity in the current distribution of the product and a deterioration in the resource base cause an increase in cost in which future generations will incur through a need for the productive mobilisation of the agro-ecosystem.With the twofold purpose of avoiding a situation whereby the dynamics of the agro-ecosystem studied have negative effects, both now and in the future, on other agro-ecosystems and to raise its social value, i.e. to guarantee its net contribution to the well-being of the base community, it is vital to establish the possibilities for improving its function and to redirect its development.

Improving the agro-ecosystem function

The improvements presented include structural modifications to the agro-ecosystem, listed in order of priority for the community[5]. As shown in Figure 3, regenerating scrubland is the improvement which shows the best behaviour as regards properties as a whole and the variables specified. Scrubland regeneration is also the improvement with least impact on other agro-ecosystems, both diachronically and synchronically. In general terms, this improvement involves the reproduction of the basic relationships of the traditional agro-ecosystem which are as follows:

1. Maximum use of solar flux reaching the agro-ecosystem.
2. Maximum interrelationship between component subsystems or the maximum use of resources within the agro-ecosystem.
3. Minimisation of generated waste or cyclical conversion of the processes present in the agro-ecosystem (biogeochemical cycle, hydrological process).

Furthermore, we uphold the idea that the economic feasibility of the agro-ecosystem bears a positive relationship with semi-specialisation in meat production, the prime food source of cattle being common grazing land. Figure 3 shows how all the innovations to be introduced into the agro-ecosystem bear a positive incidence on productivity, with particular emphasis both on industrial cattle fodder and on scrubland regeneration. In the first of these cases, as a result of the fact that, regardless of the characteristics of the land, and even in the absence of any land whatsoever given over to forage, it would be possible to feed both animals as there were financial resources available to purchase this input. We would obtain a greater productivity for regenerating scrubland since this improvement implies an overall, diversified exploitation of the land, both at the substrata level and in the various land levels (grazing land on the lower level, wood in the upper). The incidence of scrubland regeneration on this

a greater or lesser cost, of the period of time required for benefit, of their social and technical feasibility and in terms of their political compatibility.

[5] These results were obtained in the course of several Workshops, using RRA tools. It must be noted that, although they are treated separately, not all the improvements are mutually exclusive.

primary explicative property of the social value of the agro-ecosystem would go beyond the alternatives involving the expansion of forestry as a result of a greater exploitation of energy linked to the multi-use strategy: not only trees, but other animal and plant species, would serve as mechanisms for converting solar power into products available for human consumption, directly or indirectly.

When defining stability as variations in productivity over time, all the improvements would bear a positive influence on the stability of the agro-ecosystem. The greater contribution of improvement n.1 is the result of the accompanying diversity in production. Also, in common with improvements 4 and 5, involving the large-scale planting of forestry species, the objective would be to produce totally for and via the market, buying inputs from outside, there would be greater variations in productivity. Sustainability refers to the agro-ecosystem's capacity to stand up to distorting forces, be they pressure orientated (regular, predictable and relatively small distortion) or disturbance orientated (infrequent, extended and unpredictable distortion). So, converting the agro-ecosystem into a forestry monoculture has a negative impact on the sustainability of the agro-ecosystem as it breaks the internal links between subsystems and hinders compensation between them when a distortion occurs, simply because only the forestry subsystem would operate. In other words, in this case, the agro-ecosystem structure is simplified, becoming more vulnerable when subjected to a disturbance (fire) or pressure (the gradual reduction of wood prices).

Improvement n.1, scrubland regeneration, presents a greater positive incidence on the sustainability of the agro-ecosystem as productivity comes both from locally existing inputs, such as complementarities between subsystems (cattle-crop-wood land). Furthermore, in an agro-ecosystem of this type, process inputs predominate over product inputs[6] and the high variety of products obtained gives them several escape strategies. In this paper, we demonstrate that the productive and organisational structure of the Vilar agro-ecosystem, once this improvement is enforced, would be more sustainable than any of the other possibilities considered.

The final two defining properties of the social value of the agro-ecosystem, equity and autonomy[7], as shown in Figure 3, would contribute, to a large extent, to the social value of the agro-ecosystem if this were developed recovering abandoned lands and changing them into natural grazing lands and small multi-species forests. Figure 3 establishes a comparison of the different improvements in terms of the financial costs involved, the period of time required for obtaining benefit, the technical and social feasibility and adaptability to current policy. In this Figure, we observe how improvements in scrubland regeneration, semi-specialisation in meat production and building access routes to the cropland areas are those which would most consolidate the variables under review. Scrubland regeneration is the only option which, simultaneously, presents a high social (complete unanimity prevails in the community in this regard) and technical feasibility, since the means required for recovering grazing land, the key

[6] Process inputs are those which make it possible to obtain a benefit for production (e.g. crop fertilization) by natural means present in the agroecosystem (association of species) or the application of locally existing traditional knowledge. Product inputs, on the other hand, are those which come from a normal production process. The former give a greater resistance to be able to overcome the distorsion in force.

[7] We may understand equity to be those situations where it is possible to deal with reasonable food developments without the social cost of its production increasing or, conversely, to be the maintaining of the natural basis of resources to guarantee the production over time. Autonomy, in this context, refers to the level of control exerted by an agroecosystem on the conditions of production.

element in the "new" agro-ecosystem structure, already exist within the agro-ecosystem[8]. The period of time required to reap the benefits is by no means short since the regeneration of an agro-ecosystem, as described, requires non-automatic structural modifications, but in any case, the time elapsed will be less than that associated with intensive reforestation.

Conclusions

We uphold that making the agro-ecosystem sustainable implies a strategy such as the one commented on: one that defends local production by means of the existing resources and processes, to be controlled locally by local and regional consumption. For this, social and political mobilisation is required with a view to appraising the "positive economies" which accompany the traditional management of resources and the dignification of rural life.

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[8] What is missing is, firstly, manpower to substitute the old and poor income collectors of the country, and secondly, a thorough restructuring of local initiatives (Forestry Commission for Commonland and Local Authority).