

# LUCC DATA REQUIREMENTS WORKSHOP

Survey of needs, gaps and priorities  
on data for land-use/land-cover change  
research

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## SOCIO-ECONOMIC INFORMATION FOR A COMPREHENSIVE ANALYSIS OF LAND USE CHANGES

Nelson Lourenço

*Universidade Nova de Lisboa, Portugal*

Teresa Pinto Correia, Maria do Rosário Jorge and Carlos Russo Machado

*Universidade Atlântica, Portugal*

Understand the meanings and motives underneath the processes of land use/land cover changes is an important issue to the knowledge of these processes of change. In this way the scientific basis of this work is the belief that integrating physical and socio-economic approaches in the study of land resources and land use systems represents a conceptually correct means of addressing the unifying issue of economic and environmental sustainability.

Thus, we are departing with the farmer and his farm as our Unit of Analysis. This departing point assumes that the farmer induces the land use changes but he also reflects the changes made by other agents that intervene, directly or indirectly, in the land use.

So if we want to study these processes of change in an European context we must consider and analyse the impact of external driving forces such as the Common Agricultural Policy or Environmental Measures, which consists in a large group of political measures and regulations of the different interventions in rural areas.

However we must also consider the possible consequences resulting from the global environmental changes. The desertification processes, aridity processes, the increase of flooded areas or the changes in the productivity of soils are some environmental processes of change that must be in account regarding its possible consequences on the productions systems dynamics.

We think that this kind of approach must be made at two different level of analysis. In a Regional Level we must identify, by the use of remote sensing techniques and statistical information, the changes, and its trends, present in the region studied. In a Local Level we must understand, using local case studies, the dynamics of the processes of change.

Therefore the construction of indicators of land use change is an important step in this kind of approach which aims to achieve an integrated comprehension about the land use changes effects.

What kind of information is needed to the construction of indicators of land use change? The land use changes studies must be a contextualised analysis centred in the individual (the farmer) inside the context where he acts. Thus the analysis must be made at a Regional Level and at a Local Level.

At Regional Level we want to know some information related to:

### *Changes in population*

The knowledge about the dynamics of resident population structure, active population, agricultural family population, farmer's age and pluriactivity allow us to understand, for exam-



ple the changes in the regional and local markets, the changes in the labour available in articulation with others activities, etc.

#### *Changes in agrarian structure*

The analysis of the dynamics in the number of farms, concentration/dispersion of agricultural area used, and of type of use: forest, crops, pasture and fallow area and cattle production stand for the identification of the changes in the dominant regional production systems.

#### *Changes in the territory uses*

Other territory uses like touristic or other rural services, urban or industrial can compete to or complement the agricultural use of the land. Moreover the identification and analysis of ecological and environmental problems are often related to this different territory uses.

#### *Agricultural policies assessment, impacts, planning and regulation*

The analysis of this issues permit the identification of the main legal constraints influencing the ordnance of the region. The regulations on the agrarian structure, the differences in land taxation, the political priorities defined to the region induces distinct trends of change.

Therefore, the collection for different periods and the treatment of this information allow us the identification of the main characteristics, problems and development of the region. However we must always consider the interrelation with a global (national and international) frame and the importance of the different local contexts (local lobbies, municipal intervention).

Nevertheless the regional frame doesn't allow the total comprehension about the different processes of change. The dynamics of change are, therefore, studied at two levels of analysis: identification and understanding of the more global factors of change at regional level, and the integration in the analysis, at local level, of the complex web of social relations that structure the social systems (attitudes, expectations and representations of the future) permitting the comprehensive analysis of the social dynamics.

Thus we must analyse some information at Local Level (Farmer Level) which let us identify and apprehend in what way the farmers intervene in the land. So we must collect information related to:

#### *The farmer*

His age, level of instruction, dominant activity and his articulation with the agricultural policies. These characteristics are important because they influence the processes of decision making by the farmer, his capacity of articulation with the market, introduction of innovations (technological and organisational).

#### *Farmer's expectations*

The farmer succession expectations and his opinions about the future are a very important question about the future dynamics of the farm unit and allow us a perspective of evolution. In the same way the knowledge of the succession and heritage systems, related to the land tenure systems, is very important to the comprehension about the transmission of properties.

#### *The farm*

The dimension/dispersion of the farm, the main land uses: forest, crops, pasture and fallow area and the cattle production in different periods show us the farm structure and the production system allowing the definition of trends of change.

### *Organisation of the production factors*

The information related to the evolution of the Investments, Labour force in the farm, Level of mechanisation and chemical products permit the identification of the intensity of the use of the land and contribute to the definition of trends of change.

These different types of information should provide, after a statistical treatment, an analysis about which ones are the most associated to the changes in land use. At the same time they should be at service of the integrated methodology and help us to understand, at different levels of analysis, the meanings and the motives of the land use changes.

This approach allows therefore the complexity of the interactions defined by the social systems/natural systems to be incorporated in the analysis and allow us to know where and why land use/land cover changes occurs and to understand, from a regional and local perspective, its impacts on economic and environmental sustainability.