A landscapes-based approach to improving linkages among research, management and planning of multi-functional land-use systems; the example of the Montado.

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Multi-functional land-use systems are acknowledged as highly sustainable and resilient, and play an important role in confronting global challenges such as increasing climate hazards, decreasing food security, decline in social capital and biodiversity conservation. The Montado of Central and Southern Portugal falls within such category. The Montado is a Mediterranean silvo-pastoral land-use system dominated by Holm and Cork Oaks covering a wide range of tree densities. It is recognized in its capacity to deliver a wide variety of ecosystem services. However, a slight decline in its extent has been detected driven by the inherent difficulty in incorporating many of these services into current markets and decision-making frameworks. We argue that applying a landscape-based approach can bring a number of advantages compared to those arising from ecosystems-based approaches. This is particularly relevant for Mediterranean environments that are characterized by a long-term history of human transformations and by deep cultural values. From a conceptual perspective such advantages include the inherent nature of landscapes as complex social-ecological constructs that bridge together the natural, socio-economic and cultural dimensions of land-use, the spatial and scalar alignment of landscapes with key land-use planning and management structures and systems, and a potential for jointly engaging scientists, land managers and other stakeholders. Consequently, we argue that a landscapes-based approach can help in improving linkages amongst research, management and planning. In the present context of post-normal and trans-disciplinary science, knowledge is co-constructed by multiple actors within a participatory and multi-level framework. We argue that in such context a landscapes-based approach can become valuable for designing and implementing novel governance models that are effective in achieving increased levels of sustainability and resilience of land-use systems. To test such arguments we examined the Montado of Central Alentejo (NUTS 3) focusing on landscape services and multi-functionality, and also on territorial impacts driven by landscape changes that are dynamic in time and space. Central Alentejo is a region for which a broad dataset of spatial, institutional, socio-cultural, economic and bio-physical information has been built up by our institution over the years, and where mutual trust and bonds with key stakeholders, a key factor of success for action-oriented research, has been gained. Arising from our experience, we can argue that employing a landscapes-based approach potentially represents advantages for implementation of action-research schemes in the context of multi-functional land-use systems such as the Montado, and eventually also for other silvo-pastoral systems.

Keywords; Landscapes Approach; Multi-functionality; Action Research; Montado; Alentejo.