What Types of Environmental Conflicts Emerge from the Impact of Land Use and Management Changes on Cultural Agro-ecosystem Services?

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INTRODUCTION (1/3) CES in Agroecosystems

- the relationship between agriculture and culture is complex: inter-related (Hashimoto et al., 2015)

- CES in agriculture have been widely recognized (Gómez-Baggethun et al., 2011) but only recently (Dominati et al., 2014)

- Still remain poorly investigated, undervalued, and...

- sometimes referred to as “additional” services (Fagerholm et al., 2016; Bouahim et al., 2015; Aspe et al., 2014; Bernués et al., 2014; Grunewald et al., 2014; Nahuelhual et al., 2014; Milcu et al., 2013 Frank et al., 2012)

- mainly based on metric economic valuations that...

- overlook the question of the immediate relationship between people and their environment (Ruoso et al., 2015; Zhang et al., 2015; Chiesura and De Groot, 2003)
INTRODUCTION (2/3) Land Use and Management Changes

- Agroecosystems undergo environmental changes due to socio-economic-political drivers that...

- leading to transformations in land and lives (Ribeiro Palacios et al., 2013; Pedroli et al., 2016; Munteanu et al., 2014; Zorrilla-Miras et al., 2014)

- Since environment and culture are closely connected:

- shifts in the environment are also commonly leading to changes in cultural systems (Pilgrim and Pretty, 2010)

Agricultural intensification, scale enlargement, urbanisation, abandonment led to a dramatic changes in our landscapes (Pedroli et al., 2016)
INTRODUCTION (3/3) Environmental Conflicts

- Environment is a primary source of livelihood for rural communities whose values and interests are often marginalized and neglected (Martinez-Alier, 2014)

- The gran majority of cultural benefits provided by agroecosystems are seen as non-market externalities (De Groot, 2006) but they are...

- Essential for communities’ spiritual enrichment, rituals, or identity (Hobbs et al., 2014)

- Environmental land use conflicts are related to different interests in land areas between different land-use stakeholders

- Access to and control of natural resources is often an important cause of the tension (Brown and Raymond, 2014; Kumar Paul and Røskaft, 2013; Pacheco and Sanches Fernandes, 2016)

- Since access to and benefits from ES varies across space and different groups (Wieland et al., 2016; Kull et al., 2015)
OBJECTIVES OF THE REVIEW PAPER:

- to categorise and analyse conflicts emerging from the impact of land use and land management changes on cultural ecosystem services delivered by agroecosystems

Environmental conflicts in agroecosystems related to CES have not been problematized enough; most studies did not involve stakeholders in the assessments (Mastrangelo et al; 2015; Nieto-Romero et al; 2014)
RESULTS: A WORLD MAP OF CES STUDIED PER COUNTRY
RESULTS: LUMC TYPES APPEARING WITHIN THE LITERATURE

- Agricultural intensification: 23%
- Urbanisation & industrialisation: 11%
- Agricultural expansion & Monocultures: 10%
- Water; land degradation; pollution & overuse: 10%
- Conservation: 7%
- Abandonment: 8%
- Otros: 30%

Other categories:
- Deforestation; burning & logging: 5%
- Development of rural areas: 4%
- Intensified grazing: 4%
- Afforestation, forestry: 3%
- Irrigation and hydraulic infrastructure: 3%
- Energy projects (renewable & conventional): 2%
- Mining: 2%
- Climate change: 2%
- Ecological intensification: 2%
- Tourism expansion: 1%
- Defense industry projects: 1%
- Transport: 1%
• a **bottom up** identification of CES
• **does not** fully correspond with the **standard classifications** of CES (e.g. CICES, 2016)
• this allows a **flexible consideration** of categories of CES
• give us an idea of the rich variety of CES involved in agroecosystems
RESULTS: INTERRELATION BETWEEN LUMC AND CES

LAND USE AND LAND MANAGEMENT CHANGES %

- Social Environment
- Connectedness to nature
- Traditional local varieties and breeds

- Tourism: 9.3%
- Spiritual Enrichment: 10.8%
- Health of the soil, the environment and the people: 9.3%
- Abandonment: 8.8%
- Protected areas: 11.6%
- Resources degradation: 14.1%
- Urbanisation & Industrialisation: 15.7%
- Intensification: 17.9%
- Expansion & Monocultures: 18.6%

- Sense of place
- Heritage physical artefacts; intangible patrimony
- Traditional knowledge
- Traditional rural lifestyle and agricultural practices
- Aesthetics/Beauty
- Recreation & hunting
Land Use and Management Changes

- Abandonment: 8.8%
- Urbanisation & Industrialisation: 10.4%
- Expansion & Monocultures: 12.3%
- Resources degradation: 13.3%
- Intensification: 13.5%
- Protected areas: 18.6%

Traditional knowledge

Market Influences: 48%
- Nature conservation: 28%
- Different languages: 23%

Conflict Causes

Responses

- Enhanced participation: 33.3%
- Revitalisation of ES-generating structures: 48.5%
- Resilience-based planning: 16.2%
because agroecosystems form a part of ecological, educational and thousands of years of agricultural practices that have left traces in our landscapes

human activity and their cultural traditions are needed to sustain them further (Fischer and Eastwood, 2016)

The undergoing land use changes often do not reflect historical nor recent political, economic or social reasons (Zorrilla-Miras et al., 2014) behind those changes dynamics and its consequences on cultural services provided by agroecosystems (Renard et al., 2015)

it is essential to reveal the full complexity of human relationships, including conflicts within social, economic, and environmental settings (Jose and Padmanabhan, 2016)

Each one of causes of conflicts, or a combination of them, with land use changes as drivers eventually entails negative affects for some actors

outcomes of the conflict point towards the lack of appreciation for farmers’ work and of the cultural value of farming, together with access prohibition and economic distribution such as poverty or gentrification of rural areas
When these types of negative outcomes appear, **people do not remain passive**

The **responses** can be manifested as mobilization and resistance.

In some cases tradition itself is mobilized in the resistance, through the defense of traditional cultivation, cultural and symbolic practices.

Only a small amount of the literature address the complexity behind LUMC and their affect on CES in agroecosystems and...

even less addresses the complexity of environmental conflicts that arise from it.

They do not necessarily always appear as an open direct “clash”, but often as a **“latent”** conflicts between different social groups.
• This study has been approached as a systematic literature review
• we analysed the interrelation between LUMC, CES and environmental conflicts
• A comprehensive map of what the literature has failed to address so far, in relation to the affects of LULM changes in agriculture on CES and related conflicts
• We highlighted the relevance of including conflicts into CES research, and the need of better understanding of existing power asymmetries among stakeholders
• Such asymmetries generate, not only manifested, but..
• also latent conflicts around CES that...
• should be further recognised in planning and management