

## Chapter 26

# Social–Ecological Systems in Local Fisheries Communities

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### ABSTRACT

*Even though the study of the commons has been expanding rapidly in the past years, and there have been multiple cases of successful local conservation initiatives, still, significant gaps in knowledge remain. The Social-Ecological Systems framework attempts to analyse the linkages between the “human system” (society) and the “natural system” (ecosystems). In every conservation attempt, the interactions and feedback between the two systems become evident. By examining thoroughly this relationship through the SES lens, we can develop a deep and holistic understanding of the processes that should be taken into consideration before the implementation of conservation actions. This study, through the exploration of the fisheries management procedures in Japan, attempts to develop an understanding of how the adoption of the Social-Ecological Systems approach could promote local development in the insular periphery of the developed world, in countries like Greece, where public participation in the decision-making processes is limited.*

### INTRODUCTION

Grotius (1608) In his book “The Freedom of the Seas (*Mare Liberum*)”, he supported the notion that the sea constitutes a non-disposable common property, as opposed to land. The marine realm should be without borders, free of sovereignty and accessible to navigation (Cocco, 2013). However, this view of the world is treated as somewhat naïve nowadays. Especially in the case of fish stocks, which constitute a profound example of common-pool resources as defined by Ostrom et al. (1994), the current management approaches, based on central planning, and the absence of well-enforced, high quality property rights, have resulted in both declining stocks and decreasing fishermen’s profitability (Arnason, 2009). As governing authorities continue to design and implement managerial plans that cannot combat the

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“race to fish”, which is the result of constant increasing fishing effort due to the competition between fishermen in order to exploit a common-pool resource (Hardin, 1968), the degradation of the marine ecosystems and the artisanal fishing community livelihoods will only continue to spread (Arnason, 2009).

The current paradigm for conservation plans is far from holistic. In their majority, the management formulas ignore or downplay the importance of the human factor and focus mostly on conservation from a purely biological perspective (Bundy et al., 2008). However, the biotic community that constitutes an ecosystem and interacts with the surrounding environment inevitably includes humans. Humans consist one of the most significant factors of the ecosystem equilibrium, as ecosystem health is highly dependent on human behaviour and vice versa (Bundy et al., 2008). Nevertheless, managers, in their vast majority, tend to consider conservation and livelihoods as two conflicting goals: in order to maintain or increase one, the other must be sacrificed.

It is noteworthy, however, that there is an obvious international shift towards more sustainable fisheries, as the actors have begun to realise that there is an urgent need for a paradigm shift. Apart from the damage done to the marine habitats, unsustainable management decisions have also dealt a fatal blow to the local artisanal communities, resulting in income decline, impoverishment and village depopulation (UNEP-WCMC, 2006). Near-shore communities globally are being abandoned for an “easier” livelihood in the cities. In order to avoid utter collapse, multiple nations have started to adopt managerial frameworks focusing on the idea of decentralised, local management. Research has shown that the most efficient management choices are those that include some form of co-management of the resource. By co-management, in this study, we mean the sharing of responsibilities between governmental institutions and groups of users (Matsuda et al., 2009; Persoon et al., 2005).

This management concept cannot be implemented at the national level and it targets only a local habitat or ecosystem. While it is not panacea, co-management has several advantages, among which, it can create legitimacy, empowerment, and responsibility, especially through the inclusion of resource users in the decision-making process, as those involved in co-management gain not only responsibilities, but also rights, and in particular, management rights. (Jentoft, 2005). Firstly, the incorporation of local knowledge in the planning phase may increase significantly the efficiency of the management framework, as it multiplies the known parameters for the targeted resource. The knowledge that the fishermen and the generations of their ancestors before them, have gathered by working in the targeted area cannot be substituted by scientific research. However, the two can complement each other. In addition, by including the local stakeholders in the decision-making process and the following regulation implementation, the authorities may be relieved of significant financial costs, as the fishermen can undertake the task of enforcing the regulations, monitoring the resource and control the local activity (Jentoft, 2005). This approach also contributes highly to the enhancement of local social capital, by developing bonds between the fishermen, the community members, the authorities and the rest of the stakeholder groups, reducing thus conflict between the actors, by clearly defining rights and responsibilities, and by providing an institutional forum for discussion among decision-makers (Tsobanoglou, 2008; Wilkinson and Pickett, 2009).

In this concept, the importance of decentralization cannot be highlighted enough. It is at the local level that the stakeholders face the most prominent financial issues and it those communities that the management shift should target, in order to increase the success likelihood of income source fortification strategies (FAO, 2005). Participation of a variety of local stakeholders has the potential to improve significantly the legitimacy of management and to promote equity, by building a conservation ethic, through the involvement of fishermen in the decision-making processes and the sharing of responsibilities (Berdej et al., 2015; Cash and Moser, 2000; Reed, 2008). The development of social capital, has in turn,

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