

Planning and management for sustainable coastal aquaculture development in Santa Catarina State, south Brazil

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Abstract

Marine aquaculture of bivalve molluscs is an important economic activity in Santa Catarina State, Brazil, with more than 5000 persons directly and indirectly involved and an annual revenue of US\$ 18 million in 2013. In the first decade of this activity, a lack of proper regulation imposed multiple obstacles to the sustainable management of local shellfish farming. The occupation of marine space occurred in a disorderly manner, and the unplanned development led to unfavourable conditions that threatened the sustainability of the industry. This study describes how better planning and management tools have improved governance of marine aquaculture in Santa Catarina State. The process included development of a legal framework for aquaculture planning, elaboration of local development plans with a participatory and multidisciplinary approach, development of a geographic information system to identify favourable areas and creation of a Web-based aquaculture management system. The combined application of these actions, along with continuing extension services, is expected to contribute to the regulation of 837 shellfish farming areas, the expansion of farming activity, the mitigation of the environmental and visual impacts caused by coastal aquaculture and an increase in the public health of shellfish consumers. In this manuscript, we report an example of how the application of better planning and management of the aquaculture sector can prepare the industry for a sustainable growing cycle.

Key words: coastal aquaculture, geographic information systems, management, planning, shellfish.

Introduction

According to the latest Food and Agriculture Organization of the United Nations (FAO/ONU) statistics, world aquaculture production attained 90.4 million tons with a value of US\$ 144.4 billion in 2012 (FAO 2014a). The major groups of species farmed and the farming systems vary greatly among the leading producers. Employment in this sector has grown faster than the world's population. The sector provides jobs to tens of millions and supports the livelihoods of hundreds of millions. According to the FAO (2014a), Brazil relies heavily on inland aquaculture of finfish while the country's potential for mariculture production remains largely untapped.

FAO is promoting 'Blue Growth' as a coherent approach for the sustainable, integrated and socio-economically

sensitive management of oceans and wetlands, focusing on capture of fisheries, aquaculture, trade and social protection of coastal communities. The Blue Growth framework promotes responsible and sustainable aquaculture by way of an integrated approach involving all stakeholders. Through capacity development, the idea is to strengthen the policy environment, institutional arrangements and the collaborative processes that empower fishing and fish-farming communities, civil society organizations and public entities (FAO 2014a).

Major seafood companies want to secure access to reliable and environmentally sustainable supply chains. Matching the growing market demand with this private sector interest in reliable and sustainable sourcing presents a major opportunity for developing countries prepared to invest in improved fisheries management and environmentally