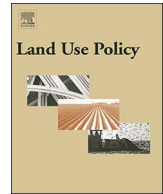


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## Ecosystem services and use of Afro-descendant land in the Colombian North Pacific: Transformations in the traditional production system

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## ARTICLE INFO

## Keywords:

Ethno-development  
Environmental perception  
Economic practices  
Traditional practices

## ABSTRACT

When understood to be a mixture of social relationships, interactions with biotic and abiotic surroundings, and historic context, the environment presents major challenges to assessments of ecosystem services (ES: ecosystem benefits that are obtained by a community) for communities that live in biodiverse and multi-ethnic areas. The objectives of this study are to assess the perception of the Joví community (an Afro-descendant community in the Colombian Pacific) of the provisioning and cultural ES, the economic activities developed in the village, and the perceived changes in services with a focus on the three main economic activities: agriculture, fishing, and tourism, with the latter being outside the traditional production system. This research is an ethnographic investigation that includes techniques such as participant observation, document research, social cartography, and semi-structured interviews, of which social cartography was critical for the identification of the main sites utilized by the community. The results indicate losses in ES and changes in land use; for example, traditional crops and cultural and community activities have been lost. This prompts a discussion on the changes in the traditional production system and the consequences for agrobiodiversity and community life. Finally, some recommendations are provided for a potential approach to the challenges that arise from the identified environmental and social changes.

### 1. Introduction

Colombian rural Afro-descendant communities perform integrated management of their territories based on their social-ecological relationship with the environment. This integrated approach can be found in the ancient practices and customs of sociocultural; production; economic relations; and solidarity in life, adversity, and death. Moreover, it has particular forms of territorial appropriation at the family, collective, and semi-collective levels (Riscales, 2005).

These black communities have developed particular lifestyles that have allowed them to adapt while using the natural environment and benefitting from ecosystem services (ES). In that sense, the traditional production system (TPS) was a key factor in maintaining the relation between the community and its surroundings. The TPS is multipurpose, that is, based on complementary practices such as agriculture, fishing, gathering of forest resources, animal farming, hunting, and craft-making. The TPS is deeply incorporated into the social and cultural systems and encompasses its own forms of knowledge and rationality, also contributing to food security and environmental conservation (Escobar, 2010; Riscales, 2005; Sanchez, 1998).

In that perspective, the Republic of Colombia's 1993 Law 70 "aims to recognize black communities that have been living in unoccupied land in the rural areas along rivers of the Pacific Basin, according to their traditional production practices and with the right of collective property." Law 70 confers cultural and territorial rights to black communities, highlighting their unique life styles and their practices that are considered ancient or traditional, and it further intends to establish mechanisms to protect the cultural identity and rights of these communities as an ethnic group, promoting social and economic development to ensure that these communities attain real equality of opportunities.

More specifically, Chapter IV of this law determines that the community traditional practices do not require authorization and will be prioritized over any commercial, semi-industrial, industrial, or sporting activity. In addition, the law establishes the community council (Article 55) as the highest ethnic authority. The function of the councils includes ensuring the conservation and protection of collective property rights, preservation of cultural identity, and utilization and conservation of natural resources. Based on this premise, the councils should encourage and evaluate projects that promote the economic

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<https://doi.org/10.1016/j.landusepol.2018.01.043>

Received 29 May 2017; Received in revised form 23 January 2018; Accepted 24 January 2018  
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development of the region while also preserving cultural diversity and protecting the biodiversity of the Colombian Pacific.

However, the historical configuration of the Afro-Colombian territories was also influenced by gold and platinum mining, timber exploration, armed conflicts, and co-existence of communities, mainly in the rural context (Arruti, 2000; Escobar, 2010). Therefore, this study is based on the premise that individuals are dynamic and capable of continuous transformation; can be altered by the environment; and have great potential for discovering, maintaining, or restructuring their surroundings (Bronfenbrenner, 1987). Despite the concept that human populations invariably degrade nature, “there also exists a distorted image that local or traditional populations always live in harmony with nature, as ecologically good savages” (Hanazaki, 2003, p.8).

It is important to highlight that the relationships established by the human communities with the environment will define the degree of impact on and the conservation of natural resources (MEA, 2005). Explaining this relationship requires the invocation of the concept of ecosystems services (ES), which are defined as benefits that people obtain from ecosystems and are classified by the Millennium Ecosystem Assessment<sup>1</sup> MEA (2005) into four major categories (supporting, provisioning, regulating, and cultural) that are further divided into sub-categories that more specifically indicate the type of benefit that people can obtain from different ecological systems (MEA, 2005).

The link between the provisioning and cultural ES categories and the land use in communities is clear: communities use their territory for food, fibers, water, raw materials, fuel, and medicinal plants. Places can also have aesthetic, tourist, recreational, ritual, magical, cultural, and historical meaning, or meanings that contribute to the sense of community roots. “The landscape is the result of a common and intertwined history: the human and natural history” (Diegues et al., 2000, p.8). Therefore, this link appears to be highly dynamic; that is, when the use of the territory changes, the ES obtained by the communities and the impacts on these services also change. Some authors have characterized this relationship as feedback (Walker and Salt, 2006), meaning that conservation initiatives that, deliberately or not, engage in social (cultural, economic, or political) change could have subsequent environmental impacts (Miller et al., 2012).

The strength of these links and the degree to which these services can be replaced determine the ecosystem alterations. Therefore, ecosystems are affected in turn by shifts in human wellbeing (MEA, 2005). For example, the results of a study of rural communities in the Mediterranean showed that land-use changes that led to higher incomes and employment rates also caused a decline in the aesthetic value of the landscape and often groundwater depletion. According to this study, due to the low profit generated by traditional land uses, most land has been converted for intensive agriculture or abandoned over the last 50 years. The study also noted that agriculture has a lower impact on community income, resulting in greater development of private industry, such as services related to hospitality (Vidal-Legaz et al., 2013).

This analysis reveals an additional variable that increases the complexity of the matter: the Colombian Pacific was defined as a region-territory of ethnic groups, that is, an ecological and cultural unit intended for the creation of alternative life and social models (Escobar, 1998). In addition, the implementation of ethno-developmental processes causes constant tension between cultural autonomy and integration into state structures and the national and international economy (Little, 2002).

The lack of consensus among these approaches generates the

following questions: Currently, to what extent do local populations know and take advantage of the available resources in their territory? Which benefits are the community obtaining from their ecosystems? Are there accompanying changes in the social-ecological relationship? To understand current land use in local communities in this context, the goal of this study was to analyze the provisioning and cultural ES perceived by the Joví, an Afro-descendant community in the Colombian Pacific with traditional and ancient practices. Specifically, we investigated the ES involved in the three main economic activities in the village: agriculture, fishing, and tourism; the community perception of the economic activities developed in the village; and the perceived changes in both ES and economic activities. Therefore, observations on how these changes in ES occur and the reasons for these changes in the communities are discussed.

This research was based on the classification of the ES defined by MEA and is complemented with documentation by the local ethnic authority regarding resource utilization. The study was developed from an ethnographic perspective; however, social cartography was also used to identify the primary sites used by the community. The results are discussed from the perspective of how economic activities are changing the environment and the community, and recommended management interventions to address these changes are described.

## 2. Methods

### 2.1. Study area

Since the 1980s, the Colombian Pacific has ceased to be seen as a region solely focused on resource extraction, and biodiversity has increasingly been taken into account in the occupation process (Escobar, 2010), meaning that biodiversity has become an important subject of discourse in environmental and international development circles. Different ecological and cultural actions originate inside a network formed by heterogeneous components including ecosystems, social movements and nongovernmental organizations (NGOs), all of which are important elements in the struggle over the Colombian Pacific as a territory (Escobar, 2010).

The region extends across 8 million hectares, 77% of which comprises rainforest (Escobar, 2010). The Chocó region, which is considered a hotspot, presents high levels of endemism (Myers et al., 2000), high cultural diversity, and has the highest poverty levels in the country (PNUD, 2014). More than 50% of the territory exhibits low levels of intervention due to the use of the TPS (Escobar, 2010). In addition, the territory is characterized by the presence of illegal armed groups and drug traffickers (Oslender, 2008; Defensoria, 2016; Rincón-Ruiz and Kallis, 2013).

In this context, the Joví community, located in the southwestern part of the Nuquí municipality, Northeast Colombia (5°36'54.31"N; 77°22'56.48"W), has an official population size of 270 inhabitants per 37.48 ha (Fig. 1). The economy is based on fishing, tourism, and agriculture (Sucre, 2012). The community comprises 67 homes, five of which belong to indigenous families. As this study focuses on the Afro-descendant communities, the indigenous families were not included in the data. The municipality is located in the Tribugá Gulf, where 99% of the population belong to ethnic groups and 77.5% are Afro-Colombians (DANE, 2010).

According to the ethno-development plan from the local ethnic authority for black communities, the General Community Council or *Los Riscuales* (2005), the black communities have implemented a vision for sustainability that allows the use, appropriation, management, planning, and regulation of their territory without exhausting its natural resources, which are fundamental to life in these communities. In addition, the TPS requires high human energy and exhibits a marked gender division of labor, some reciprocal work relationships, the collective distribution of products per family and extended families, food safety practices (for example, the salting of fish, pork, and other animal-

<sup>1</sup> The United Nations Environment Program coordinated MEA between 2001 and 2005 with the objective of assessing the consequences of ecosystem alterations for human well fare, attempting to define scientific-based guidelines for the actions needed to contribute to conservation and sustainable use of ecosystems. The assessment had the participation of experts in the natural and social sciences from 95 nations. The analysis incorporated input from the private industry, professionals, local communities, and indigenous communities. (MEA, 2005).

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