Reflections: Book review

Diagnosing wild species harvest: resource use and conservation

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Review of the book **Diagnosing wild species harvest: resourse use and conservation** by Salo, Sirén & Kalliola, Elsevier Academic Press, London, 2014, pp. 479, ISBN 9780123972040.

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Diagnosing wild species harvest: resource use and conservation by Matti Salo, Anders Sirén and Risto Kalliola (2014) is an important and timely contribution: it aids both academics and practitioners in their understanding of non-timber forest production, where there is a significant lack of knowledge. With a holistic diagnosis of wild species harvest in the 21st century, it has both theoretical and applicable case study examples – mainly from the Peruvian and Equatorial Amazon basin and from Swedish and Finnish forests. Importantly, the focus of the book contradicts the majority of economic research on forests, which have tended to see the wild species harvest as a backwards sector. Indeed, many look at the harvest in the wild as if it needs to be tamed, or replaced by a domestication of species, and going forward, the establishment of species with increasing productivity and economic benefits (Reed 1997). However, due to the climate change, a growing interest in the identification of the traits of species in the wild has appeared, meaning the myopia of looking only for short-term profits is starting to seem more risky. Investments to conserve the final remaining hectares of Macadamia in the wild, in Australia, are an example of this new interest in wild species harvest (ANIC 2014).

In the first part of the book, the authors relay a history of the Amazon, highlighting the myth of its virginity in the following way: *By some 2000 years ago, many of the main Amazonian rivers were already surrounded by large human settlements with dense populations, and these persisted up to the sixteenth century* (Salo *et al.* 2014, 47). This has a clear link to the sections that follow, identifying the borders between what the authors call 'the wild' and 'not so wild', and a section which characterises the Brazil nut, a species that can live for over a thousand years, which because of its location, was originally thought to have been planted by indigenous communities.

The second part of the book involves real stories from the Amazon forest, written from the perspective of the authors' own experiences, and academic and non-academic sources (Salo *et al.* 2014, 41–222). Here the authors focus upon the links between an ample choice of wild flora and fauna species harvested in the wild and their respective markets: international, national, or local. It is useful to read the stories first, because they provide a context to the theory that is applied later, to form a formal diagnosis of wild species harvest. In this section, we find interesting histories of wild species harvest from Amazonia as a whole, such as, hunting the curassow (*Nothocrax urumutum*), pacas (*Cuniculus paca*), spider monkeys (*Ateles belzebuth*), neotropical otters (*Lontra longicaudis*) and tapir (*Tapirus terrestris*) in Ecuador; fishing in the Amazon River and its tributaries in Peru for black prochilodus (*Prochilodus nigricans*), gamitana (*Colossoma macropomun*), sabalo (*Brycon* spp.), dorado (*Brachiplatystoma rousseauxii*) and red-bellied pacu (*Piaractus brachypomus*); and accounts of a turtle-

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egg collection in the Peruvian Pacaya Samiria National Reserve from arrau turtles (*Pocdomenis expansa*), the six-tubercled river turtle (*Pocdomenis sextuberculata*) and the yellow-spotted river turtle (*Pocdomenis unifilis*). In addition, the book touches upon forest legislation in Peruvian Amazonia and experiences with medicinal plants in Ecuador.

My own interest in *Diagnosing wild species harvest: resource use and conservation* started back in 2008, when I visited the Department of Geography at the University of Turku, Finland, as part of a Coimbra Group Scholarship for young Latin-American lecturers. Following this three-month scholarship, I published a paper in *Fennia* about Brazil nut harvesting in the Peruvian Amazonia, from the perspective of ecosystem services, with one of the authors of this book (see Kalliola & Flores 2011). As such, the book plays an important role in my own background analysis of wild species harvest, and the economics of old-growth forest conservation, with a particular emphasis upon Brazil nuts.

A real strength of this work is the way in which the authors succeed in illustrating, dissecting, and demonstrating what they have learnt from many years of ethnographic research, which includes insights from the ten year BIODAMAZ (Biodiversity of the Peruvian Amazon) project, in the Peruvian Amazon (Ministry for Foreign Affairs of Finland 2007). In this sense, the book serves as a basis for developing further projects and policies in the study areas that the book is concerned with. Indeed, other projects, which inform *Diagnosing wild species harvest: resource use and conservation*, have directly contributed to the conservation of the Andean Amazon, such as *The initiative for conservation in the Andean Amazon*, funded by USAID (USAID 2007). Having worked on the ground as program coordinator for Brazil nuts in the Peruvian Amazon with the NGO ACCA (Asociación para la Conservación de la Cuenca Amazónica), I consider that this daily conservationist work benefits from the experience and analysis of these projects, and through this book. Indeed, perhaps the main contribution of the book is the development of the DWiSH (Diagnosing Wild Species Harvest) procedure.

This procedure is especially good at dealing with management and planning if not applied as a recipe (Salo *et al.* 2014, 394). It may be seen, as Salo, Sirén and Kalliola (2014, 394) argue, as an iterative process that would ideally function as part of an adaptive management or governance cycle. For this reason, it should encourage design actions across different levels of governance and from a variety of public, private and third-sector stakeholders. The main questions in developing the steps of DWiSH are in its potential to improve economic and socio-cultural benefits, by changing the praxis of harvest and management. In turn, what impact this would have on the conservation of biodiversity and the state of the ecosystem. The contribution of this book is to provide an approach to manage this important task and to improve current databases, as the assessment of threats for biodiversity conservation in the wild is a challenge for different stakeholders in different countries. One example of this is *Actions for Biodiversity Conservation* (ABC) in Australia (Department of Environment, Land, Water and Planning of Victoria-Australia 2015).

DWiSH has three steps: case definition, collecting information about the case, and explorative diagnostics of seven thematic perspectives. The first step defines the resource that is harvested in the wild, then defines the geographical area of interest, and finally, defines the main players in the focus of analysis. The second step highlights the importance of metadata, and the third step aims to include a balanced assessment of the updated information of seven thematic perspectives. This is discussed in part three, which emphasises the uniqueness of the case and its relatedness. It is the most extensive section of the book (Salo *et al.* 2014, 223–388), and provides support for the DWiSH process based upon systematic work that covers the seven perspectives. These are: 1) resource dynamics behind the provision from nature, 2) management of resource systems, 3) governance shaping incentive structures, 4) costs and benefits weighed by harvesters, 5) knowledge for action and interaction, 6) spatiality in nature and society, and 7) legacies from the past and for the future. A reading guide with figures related to each perspective appears in the margins of the book. The authors also provide a good number of definitions for readers from different backgrounds, so they can start with a baseline in the conceptual framework, claims, hypothesis and diagnosis. Among the large number of concepts defined are: harvest, wild, species, biological diversity, biodiversity, genetic diversity, ecosystem diversity, species diversity, species richness, evenness, effective number of species, alpha diversity, gamma diversity, beta diversity, species distribution, population density, ecosystem functions, ecosystem services, biological matter, natural resources, transactions with

nature, harvesters, sustainability of wild species harvest, sustainable development, resilience and social-ecological systems.

This book, as such, arms its readers with the right questions, and provides a solid insight into harvest in the wild, especially with respect to challenges, diagnosis of problems on the ground, and how to build action plans that can be shared amongst public sector offices and private stakeholders. The DWiSH procedure specifically, which is extensively relayed in the book is a practical tool for use in academic discourse and for international agencies, national and local governments, and NGO practitioners. Due to the academic background of the authors, there are plenty of useful spatial and biological definitions. However, there are perhaps a number of socio-economic concepts that could be addressed in a further study. For example, the book refers to a type of debt-bondage called 'enabling' in rural areas, which is not only greed but adaptation to a low-government presence, as such, the consideration of this practice as adaptation, can be controversial. While the harvest models are presented in a clear way, they do not include many references to game theory and spatial dynamics modelling. Yet, these are minor details, in what is otherwise an indispensable and rigorously researched study on, *Diagnosing wild species harvest: resource use and conservation*.

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