



Introduction

After decades of research on human-environmental interactions, anthropology, and more particularly environmental anthropology, suddenly finds itself pushed into prominence. A vibrant and kaleidoscopic research agenda has ensued and borrowed extensively from other disciplines. This agenda coincides with increased interest in coupled human and natural systems from both the social and natural sciences. Such attention is not solely the product of academic integration or the analytical reflection of empirical realities; it also stems from growing concern over the role of humans in the global transformation of the environment.

—Orr, Lansing, and Dove 2015: 153

It was in the summer of 1981, when Aparna Rao and I first started our research among the Bakkarwal pastoral nomads in Kashmir, that I first saw Dal Lake. We spent some days on a houseboat and explored the different parts of the lake in one of the gondola-like water taxis, the *shikaras*. In those days, the lake to me seemed to be simply beautiful with its clear fresh water, patches of waterlilies, and lovely lotus fields. We saw the small hamlets of the vegetable gardeners, the artificially constructed small islands with their fields, and the floating gardens, those stretches of reeds on which different sorts of cucurbits were ripening. Back home, to our great astonishment, we found that no anthropological research had ever been undertaken on the lake dwellers and their habitat, and we thought that this could be our next fieldwork.

In 2009, now alone, I started this new project with the idea of describing and analyzing the construction and use of this unique hydroponic floating garden economy. But during my subsequent stays, I became more and more aware of the complex intermeshing of ecology and economy, of the social and political factors determining the livelihood of the mainly Shia market gardeners.

However, there were also Sunni houseboat owners accommodating tourists from all over the world, as well as some small fisher settlements. So I also

became interested in these communities, finally deciding to put into practice the holistic and multidisciplinary approach called for so often and to try and describe Dal Lake as a complex sociopolitical and economic system against the backdrop of the lacustrine ecology.

I also noticed that, in contrast to a number of publications on late Paleolithic and Neolithic stilt house settlements (e.g., Menotti 2004; Menotti and O’Sullivan 2003), to the best of my knowledge, very few cultural anthropologists¹ and geographers have engaged in the study of populations living directly or indirectly with and from lakes. Whereas innumerable books and articles deal with the cultural ecology of past and present hunter gatherers; of pastoral, agricultural, or maritime cultures; and of populations living at high altitudes, the cultural ecology of lake dwellers was barely a topic. Also, whereas there are hundreds of publications on the different ecological zones and habitats—last but not least in the context of “climate change”—the importance of lakes is rarely a focus of interest. In 2011, the outstanding importance of lakes was articulated at the fourteenth World Lake Conference in Austin, Texas, organized by the International Lake Environment Committee Foundation (ILEC) and the River Systems Institute (RSI) of Texas State University:

One estimate is that there are more than 10 million lakes with a surface area of one hectare or greater. They contain more than 90 percent of the liquid fresh-water on the surface of our planet at any given instant.² We use them for more purpose than any other water system, including drinking and irrigation water supply, industrial needs, sports and commercial fisheries, recreation, hydro-power generation, and human and commercial transportation. They provide a range of ecosystem goods and services to humanity. They also represent major habitats and natural ecosystems. They have religious or spiritual significance in many cultures. Finally, they represent some of the most picturesque features of our global landscape. (RSI 2011: Invitation letter)

In the following years and after several more stays on the lake, during which I gained a degree of basic knowledge about the economy and social structure of the three populations on the Dal, some of my informants mentioned that they believe that it is only in recent centuries that people began to live on the lake. This triggered my interest in the history of the Vale, and I wanted to try and find out when the lake first became populated by market gardeners and later by owners of tourist houseboats. I worked my way through the early historical sources—the translated and published Sanskrit, Persian, and Urdu manuscripts—and read the discussions among historians about their verisimilitude. Then, for the later period, I also read the many books written by European, mainly British, explorers and travelers. I realized that the question when humans first inhabited the Dal could be

addressed only by understanding the complex history, the transformation from a Hindu to an Islamic society, the permanent strife between Sunnis and Shias in later years, and the effects all this had on the fate of the different populations in the valley.

Nonetheless, the main part of the book deals with the socioeconomic strategies of the three communities, the ecological condition of the Dal, and the reasons for its increasing degradation. The book is organized into two parts.

Part I starts with a brief introduction to “The Valley of Kashmir and Dal Lake,” giving basic information on the geography and ecology of the lake and its surroundings. The next two chapters deal with “Kashmir’s Early History and the Conversion to Islam” followed by “The Social Organization of Contemporary Kashmiri Muslim Society.” The fourth chapter, “The Market Gardeners of Dal Lake: Early Accounts,” presents an educated guess as to when the wetlands and lakes first became populated and sketches the rise of the market gardeners’ economy on the Dal. The following chapter, “The Market Gardeners’ Economy Today,” describes the contemporary complex economy and livelihood of the gardeners in detail. It shows how, through their different modes of production, they minimize the uncertainties and risks of life in this hazardous lacustrine environment in order to achieve a fairly stable subsistent economy. The next chapter, “The Productivity of Lacustrine Market Gardening,” follows this up by describing the annual agrarian cycle and estimating the productivity of the market gardeners’ economy using interpretations of satellite images together with ground truth data on acreages, ownership of land, and the carrying capacities of the land, the floating gardens, and the lotus fields. The data obtained show the importance of the gardeners’ vegetable production for the Kashmiri capital Srinagar and its periphery. These data then form the basis for the chapters in the second part of the book.

The chapters on the market gardeners and their economy are followed by an exposition on “The Houseboat Owner Community and the Development of Tourism on Dal Lake.” In contrast to the quite early presence of market gardeners on the Dal, houseboat building and tourism began only toward the end of the nineteenth century. The chapter narrates the step-by-step evolution from the small traditional Kashmiri houseboat, the *dunga*, to the larger boats for traveling British colonial civil servants and tourists. It was only at the beginning of the twentieth century that the first large and luxurious houseboats were built that can still be seen moored on the Dal. Unlike the relatively self-subsistent market gardeners, the owners of houseboats depend completely on the annual influx of tourists—something that is highly unpredictable due not only to climatic change but also and mainly to the

frequent periods of political unrest when only a few visitors dare to come to Kashmir.

This is followed by chapter eight, “The Gad Hanz: The Last Fishers on the Dal,” describing the fisher communities and their traditional methods for catching and conserving the different species of fish. Since the early twentieth century, however, their livelihood has changed dramatically. Not only has the snow trout (*Schizothorax niger*), a much-relished endemic species, become very rare, but the population of other fish species has also declined due to the ongoing degradation of the Dal. Now, except for some small species, the only fish still caught are the carp introduced in 1955. They have multiplied dramatically, thereby endangering even more endemic species. In contrast to the nineteenth century, only very few members of the fisher community work as full-time fishers nowadays, and their families can survive only because some members have taken jobs in the city and away from the lake. Also, in recent years, many families have been rehoused some distance from the Dal, bringing their traditional means and modes of production to an end.

Part II of the book goes on to address the ecological situation of Dal Lake. Compared to a period as recent as the 1980s, the lake’s ecology has deteriorated greatly due to more and more pollution, leading to increasing eutrophication and decreasing biodiversity. This is analyzed in the chapter “The Degradation of the Dal: Causes and Impacts,” which presents limnologic and hydrological data showing the causes for the accelerating degradation of the Dal. It describes the different strategies and measures implemented by governmental institutions to halt the lake’s deterioration or even to restore the so-often-invoked “past glory of the Dal.” This chapter is followed by “The Political Ecology of a Degrading Lake: A Paradise Lost?” By analyzing and partly quoting the hundreds of articles published by Kashmiri ecologists and critical journalists, this final chapter discloses how and why no progress can be seen despite the enormous amount of money allocated to the institutions concerned. Most measures in the “Save the Lake Project” have failed—either because they were designed wrongly due to ecological and/or technological ignorance or because they are not being pursued consistently due to administrative and stakeholder rivalries and corruption. This continues to be the case despite innumerable High Court orders repeatedly commanding the different institutions to implement meaningful and effective measures. The chapter highlights and explains the constant mismanagement of the project to restore the “pristine beauty of the Dal.” It analyzes the corrupt ties between powerful high-ranking officers in the institutions involved in the “Save the Dal Lake Project” and wealthy stakeholders—sometimes also hand in hand with powerful members of the political parties. The last short paragraph finally deals with the relationship between “pollution and Islam.”

It points out that despite Kashmiri society being based on the Islamic canon as the fundament of all decisions and deeds, the pollution of Dal Lake is unfortunately understood solely as a sociopolitical and economic issue and is not related to environmental aspects of Islam.

This book is the outcome of fieldwork carried out between 2009 and 2017. In this period—with the exception of 2014—I spent one to two months on the lake every year. I organized my stays in such a way that I could observe the agricultural activities two or three times throughout each and every season except for the lean months between November and February.

The book should be understood as a cultural and ecological narrative about the past, present, and probably the last phase of the long enduring agony of the “world famous Dal Lake”, the “Jewel of Kashmir”. If the lake dies, the loss will not just be economic: a unique ecosystem and a fascinating facet of Kashmir’s traditional cultural heritage will be gone forever.

Notes

1. But see Altner (2009), Cleland (1982), Leveil and Orlove (1990), Orlove (e.g., 1991, 2002), or Thesiger (1964). For the agricultural use of river islands in South Asia (*chars*), see Lahiri-Dutt and Samanta (2013).
2. See especially Messenger et al. (2016).