Tibet: The Sacred Landscape in Transition

Introduction

The uniqueness and fragility of mountain ecosystems has prompted global attention in sustainably managing such ecosystems based on human-centred approaches. Among mountains of the world, the majestic Himalaya, with remarkable diversity in biophysical and sociocultural systems, assumes special place; it is recognised as one of the global biodiversity hotspots. Mt. Kailash with the surrounding landscape is one of the most revered landscapes of the world and is equally known for a plethora of vital goods and services that emanate from the region and meet various requirements of residents living within and much beyond its physical boundaries. Mt. Kailash, also referred to as Gangrenboqi Feng in Chinese and as Kailas’a Parvata in Sanskrit (with similar names in Hindi, Nepali and other related South Asian languages), is revered as Khang Rinpoche among Tibetans (Rawal et al. 2012). The natural and cultural diversity complement each other and together they hold a pivotal key to ensuring resilience in both social and ecological systems. There are critical assets in an era of dramatic global change encompassing the elements driven, directly or indirectly, also by various aspects of climate change. As a distinctive environmental unit, Tibet is home to unique biotic community, made of many rare, endemic and valuable wild animals and plants. It is often described as a major location from which emergence and differentiation of varied mountain biotic species have taken place; it is described as a resource pool of biotic species and a protective zone of biotic diversity. Tibet harbours 6,400 higher plants, 300 of which have special medicinal values. The faunal diversity includes 798 wild vertebrates, 142 wild mammals, 56 reptiles, 45 amphibians, 68 fish, 488 birds and around 4,000 insects. Around 600 higher plants

and 200 terrestrial vertebrates cannot be found elsewhere except in Tibet. Therefore, protection of biodiversity in Tibet is of paramount significance from conservation as well as economic perspective (Yongze and Danaba 2005).

A whole range of sacred natural sites are found throughout the Tibetan Plateau. Many peaks, lakes, mountain ranges, forest areas, groves, meadows, pastures, etc., have connections with some myths or are associated with the names of Gods or Goddesses. Sacred areas function under the principle of faith and fear of God and require commitment of honesty, respect for ancestors and observance of moral values, and are respected as places reserved
for beseeching divinity and supreme spirits. Observation of various rules and customs in the sacred areas for the continued blessings of the resident deities shape the belief systems and provide a cultural identity to the followers, and continued availability of nature’s goods and services, the basic tenets of sustainability (Rawal et al. 2012). Tibet is home to thousands of peaks, many of which are considered abodes of deities that protect the fertility of the land and the prosperity of the people. This unique relationship between the worldly gods, nature and humans has helped the Tibetan Plateau to survive for thousands of years, despite its fragile ecosystems and dense population. It is now getting universally acknowledged that sacred areas often play a major role in environmental conservation.

According to the beliefs of Bön’s, Mt. Yarlha Shampo, one of the nine earthly protector deities of the Tibetan Plateau has helped protect the land and its inhabitants from droughts, diseases, famines, wars and other disasters. The lack of this Tibetan perspective in development models, under the Chinese rule in current Tibet has posed severe threats to this sacred mountain region and its ecology (Z.T. Gyaltsen, chapter 2).

The enormous heterogeneity in land and climatic conditions along altitude, accompanied by access to different cultural forms has contributed to extreme diversification of the farming landscape. Further, marginality, inaccessibility and unique micro-climatic conditions often result in the evolution of peculiar practices, directly or indirectly aimed at the maintenance of genetic diversity in tandem with the preservation of prevailing fragile ecology. One such well established adaptive practice is pastoralism or the trans-humance. Alpine regions, high plateaus and the arid lands characterise the fragile ecological systems of Tibet. Historically such landscapes have been put to use by pastoralists who developed survival strategies involving high mobility. They were as mobile as their herds needed to be in order to adequately feed the animals and to conserve the pastures for future use. Having done so successfully over generations, ironically the pastoralists are sometimes being identified as the ‘causers’ of ecological deterioration, which is an open issue for scientific debate. The human interface of the ecological change in the Tibetan Plateau calls for an in-depth analysis of impacts on the life of stakeholders, the traditional Tibetan herders (A. Gruschke, Chapter 3).

Gabriel Lafitte in Chapter 4 looks at ecology as a unifying science, bringing together narrowly specialised sciences that proceed by isolating atomistic fragments of complex realities to identify their nature, causes and effects. While ecology attempts to integrate all the atomistic knowledge into a whole, a big picture in order to maintain
biodiversity, respect nature and yet maintain productivity for human use; by definition, lack of this delicate equilibrium threatens the ecosystem. In an interesting discourse, the author looks at the entry of modern science, including the science of ecology, by the Chinese, into feudal Tibet and the ensuing ‘State of the Ecology’. Faced with the disequilibrium, even in the ecological sense, Zhou Lei (Chapter 5) looks at the development trilemma in order to describe three elements of development, taking the case of Southwest China. The three elements include ‘development based on infinite growth and material abundance’, ‘prosperity accessible to all’, and ‘nature conservancy and continuity of cultural heritage’. Using a network analysis based on anthropological methods and holistic approaches, the author concludes the resulting scenario as an ecological crisis, and that one should draw carefully the lessons learned for sustainable development in harmony with nature and ecology.

Chapter 6 by Chandan Mahanta, highlights some of the impacts of the changing climate scenarios on the Third Pole along with mitigation and adaptation initiatives being undertaken. Based on existing literature on climate impacts in the Tibetan Plateau, it also makes a recommendation for an overall mitigation and adaptation strategy.

India and China’s ongoing parallel moves towards sub-regional integration provide an appropriate context, to understand and probe Tibet’s cultural, historical and social linkages with its Himalayan neighbourhood (N. Kurian, Chapter 7). The author feels that there exist compelling reasons for initiating a dialogue with a conservation bias within the Himalayan borderlands, given the interlinkages between environmental goods and services in the sub-region. The chapter goes on to offer suggestions for pathways to a sustainable Himalayan development agenda. It should start with recognising the value of mountain regions, enabling inhabitants of the region realise it’s potential by integrating the knowledge and experience of multiple stakeholders, and chartering the path of development which is sustainable, and in sync with the ecology of the region.

The Himalayan high altitudes wetlands (HAWs), which include lakes, marshes, swamps, meadows, peat land or other water bodies at or above 3,000 m (above mean sea level) are crucial for biodiversity and sustainable economic growth not only locally, but also at the river basin and regional levels. The biotic elements found in such places are often endemic and highly adapted to these locations. Additionally, HAWs regulate micro-climates and play a vital role in the hydrological regimes of some of the world’s largest and most important rivers. Each of these rivers is of immense economic importance in terms of hydropower, transport, irrigation and fisheries. Local communities depend heavily on such water bodies to sustain their livelihoods, cultures and spirituality. Unfortunately
these wetlands are increasingly facing the brunt of developmental activities, anthropogenic & climatic changes and unplanned tourism. Some of these are threatened by tremendous grazing pressures and degradation in the catchment areas. In addition to above issues, the significance of HAWs as sources of major rivers originating from the region needs to be kept in mind in order to plan strategic recommendations for the conservation of HAWs (P. Chandan, A. Singh and K. Rajashekariah, Chapter 8). Initiation of economic developmental activities in high altitude regions is often linked with diversion of water for such projects, at some cost to natural ecological systems. Thus defining the ecological requirement of natural systems is necessary before diverting water resources for direct economic gains. A case study of such attempted coordination presents an interesting reading from Arid Quidam Basin, North Qinghal-Tibet Plateau (J. Shaofeng, Z. Wenbin, L.V. Aifeng and H. Yan, Chapter 9). In the next chapter, Grace Mang (Chapter 10) looks at the policy developments and implementation problems as China begins its biggest dam building spree to emerge as a significant force in the global hydropower industry, while all eyes turn to it to see that it plays the role of a responsible global actor, giving due attention to transboundary impacts of the dams. The Qinghal Tibet Plateau, also called the ‘Earth’s Third Pole’, or ‘Asia’s Water Tower’ is the place of origin of major Asian rivers, including Yarlung Zangpo—the highest river in the world. It is often described as Asia’s ecological safety net and naturally attracts worldwide attention—it’s strategic ecological location has no substitute. Exploitation of Yarlung Zangpo requires sustainable scientific strategies that take care of issues related to resource use and environmental sustainability, patterns of geological activities, climate change and preparedness for disaster management, ecological protection and international cooperation leading to regional stability and prosperity (Y. Yang, Chapter 11). The rangelands (2.5 x 106 km2) of the Tibetan Plateau are one of the most extensive grazing systems in the world, and support a unique assemblage of wild ungulates (klein et al. 2007). Pastoralism has been the main form of subsistence for the inhabitants of the Plateau for millennia. The ‘Grassland Ecological Conservation’ in the Tibetan Plateau has attracted a lot of attention in view of the policy of giving rewards and subsidies being implemented by the Chinese government since 2009. Using the case of Gerze County in Ngari prefecture in Tibetan Autonomous Region (TAR), Yang Minghong (Chapter 12) has discussed the objectives, implementation and outcomes of the policy with regard to ecological reconstruction and the ensuing
problems. Based on in-depth analysis of various issues, the author concluded that it is necessary to revise and improve the current ecological incentive and subsidy policy. In a related chapter, Ashild Kolås and Tashi Nyima (Chapter 13) examine the challenges facing pastoralism in contemporary Tibet. The nomadic lifestyle of Tibetan pastoralists has been challenged by large-scale sedentarisation programmes, marketisation of animal husbandry, privatisation of pasture lands, climate change and other environmental stresses.

The future of Tibetan pastoralism is deeply linked with the extent to which policymakers, researchers and activists are able to collaborate and recognise local actors, and the role that herdiers’ resilience plays in achieving sustainable development on the Tibetan Plateau. The Tibetan Plateau has a flare of uniqueness, which is reflected in extreme heterogeneity of biological, physical and socio-cultural forms, in age old traditions of unparalleled systems of indigenous knowledge and practices, and a rich ethos of living in harmony with nature through reverence to the extraordinary power of the sacred. It is bestowed with unique natural beauty and grandeur. The landscape has attracted pilgrims and nature lovers for a long-long time; however, in the recent times, ease of travel has opened up flood gates also for the ‘neo-tourists’ in large numbers, which is an additional and significant contributing factor for the rapid transformation that the landscape is experiencing. Claude Arpi (Chapter 14) has tried to understand the question ‘is mass tourism a boon or a bane in the Himalayan region and in Tibet’ and also looks at a world wildlife fund (WWF) report on ‘Freshwater and Tourism in the Mediterranean’ to draw same lessons. The next two chapters attempt to look at the transboundary issues. The first of these two by Zhou Zhanggui (Chapter 15) examines the case of China’s transboundary water conflicts and prevention. In particular, the governments of Vietnam and India have sent representations to the Chinese on hydropower development in the upstream regions of Mekong and Brahmaputra, respectively. Looking also at the analyses of typical transboundary water conflicts globally, including the Danube, Rhine and the Indus rivers, Zhanggui points to fruitful cooperation based on five principles for arriving at a legal framework: (i) a strong and joint governing body, (ii) integrated goals, (iii) information sharing, (iv) active participation, and (v) a cost-benefit sharing mechanism. Further, it is suggested that application of SIA (strategic impact analysis) process and appropriate tools in social stability risk assessment will play important role in conflict prevention in hydropower projects in transboundary rivers. Chapter 16 by L.M.S. Palni and R.S. Rawal deals with the Kailash Sacred
INTRODUCTION • LOK MAN S. PALNI

Landscape Conservation and Development Initiative, one of the seven such transboundary landscapes identified by the International Centre for the Integrated Mountain Development (ICIMOD), an intergovernmental organisation located at Kathmandu, Nepal. The Kailash Sacred Landscape, with Mt. Kailash being the central pillar and most revered mountain, comprises of a large part of TAR, and some parts of India and Nepal. The rich and unique biological diversity, ecosystem goods and services and value-based cultural heritage of this landscape are severely threatened in recent decades. On a welcome and positive note, this initiative is based on regional cooperation for undertaking ecosystem management and livelihood promotion activities.

The last three chapters look at the extent and likely impacts of climate change that the region is experiencing. The Tibetan Plateau has already experienced climate warming and the future warming is predicted to be ‘greater than average’. More than six of Asia’s major river systems originate on the Tibetan Plateau and on the order of 1x10^9 people live on or downstream of the Tibetan Plateau. The impact of climate change is, therefore, likely to affect the lives of a vast humanity. Detailed studies regarding the magnitude of climate change in different ranges and high altitude regions of NW Himalaya in the last century (M.R. Bhutiyani, Chapter 17) have significant bearing on the mass balance of the glaciers in the region and the hydrological behaviour of various river systems of the Himalayan region. Archana Sarkar (Chapter 18) presents historical trends of rainfall and temperatures in the transboundary Subansiri sub-basin of the Brahmaputra river basin pointing towards statistically significant changes in the temperatures. Based on the simulations of a daily snowmelt runoff model (SNOWMOD), using six years of data, Sarkar has analysed the probable effect of temperature increase and changed precipitation scenarios on snowmelt runoff. State of glaciers, impacts of climate change and alternatives for regional cooperation in the Third Pole Region (S. Tayal and N.B. Dkhari, Chapter 19) analyses the glacial extent in Himalayan river basins based on data available through glacial inventories. It also attempts to establish a linkage between climate change and probable impact on the Himalayan glaciers. The lasting impacts of climate change will affect water availability in the region, hence the need to look at alternative approaches to ensure future water security in the region.

For the sake of convenience of esteemed readers, the chapters
have been clubbed together in four groups: Sacred Ecology of Tibet under Change (Chapter 2-6); Highland Biodiversity and Water Resources (Chapter 7-12); Pastoralism, Mass Tourism and Transboundary Issues and Opportunities (Chapter 13-16); and Third Pole under Climate Change (Chapter 17-19). This publication attempts to put together the major highlights and outcomes of a Regional Dialogue held in 2014 in New Delhi, India under the aegis of Foundation for Non-violent Alternatives (FNVA), an institute for developing peace studies. The document, while providing a brief on the status of biophysical and socio-cultural attributes in the sacred landscape, also brings together the relevance of certain policies and their implications, particularly on the life of the indigenous inhabitants and other stakeholders, along with transboundary issues and opportunities for building trust and prosperity in the nations that share the same ecology. It also cautions towards the need to look at the imminent impacts of climate change, which need to be factored in the vision and action plans for the sustainable future for the landscape. Activities related to infrastructure development, demographic and land-use changes, human migration are amongst the other most visible and apparent drivers of change. As it stands, this publication provides a glimpse to the sacred landscape in transition.