IPSI Case Study Summary Sheet

Basic Information

Title of case study *(should be concise and within approximately 25 words)*			
Assessment of Ecosystems and Ecosystem Services in Barshong, Bhutan			
Submitting IPSI member organization(s)			
Royal Society for Protection of Nature (RSPN)			
Other contributing organization(s)			
International Centre for Integrated Mountain Development (ICIMOD), Nepal.			
Author(s) and affiliation(s)			
ICIMOD and RSPN (Partners)			
Format of case study	Manuscript	**Language**	English
Keywords *(3-5 key concepts included in the case study)*			
State and dynamics of ecosystems and their services and the nexus with human wellbeing			
Date of submission	March 2017		
Web link	http://lib.icimod.org/record/32572; www.icimod.org		

Geographical Information

Country	Bhutan								
Location(s)									
Barshong Gewog (sub-districts) in Tsirang Dzongkhag (district), located in the south-central part of Bhutan									
Longitude/latitude or Google Maps link	NA								
Ecosystem(s)									
Forest	X	**Grassland**	X	**Agricultural**	X	**In-land water**		**Coastal**	
Dryland		**Mountain**	X	**Urban/peri-urban**		**Other**			
Socioeconomic and environmental characteristics of the area									
Barshong is located in the south- central part of Bhutan. Major portion of the area is under forest cover, comprising mainly of broadleaf and chir pine species, combined with agricultural land. Agriculture is the main source of livelihoods with combination of livestock rearing and a small section in waged labor.									
Description of human-nature interactions in the area									
Main land-cover types in the study area include agriculture, fallow land, forest, bare area, and water bodies. Records from 1989 to 2014 shows very minimal changes in land uses and land cover. The three major ecosystems– forest, freshwater, and agro ecosystems largely contribute to the livelihoods of the local population.									

Contents

Status	completed	**Period**	Jan 2014 to Dec 2014
Rationale			
Ecosystem valuation of Bhutan by Kubiszewski et al. (2013) estimated USD 4,944 million worth of benefits derived from ecosystem. However, the state of ecosystem is challenged by fragile mountain ecosystem, increasing economic growth and anthropogenic activities. Development of policies and strategies to address the complexities of ecosystem management and enhance its services for human wellbeing is hence imperative.			
Objectives			
To develop a comprehensive understanding of the state and dynamics of the ecosystems and their services in Barshong Gewog in Tsirang, Bhutan and the nexus with human wellbeing.			
Activities and/or practices employed			

Besides secondary information, Participatory rural appraisal, household survey geospatial tools were used to assess the state and dynamics of ecosystems and their capacity to provide goods and services; community vulnerability to drivers of change and their coping strategies to perceived changes. Additionally, ecosystem services were also mapped bases on importance and dependency.
Results
Nearly 80% of the population are farmers with 100% dependent on varied ecosystems for livelihoods. Majority (29.3%) of households reported vulnerability in relation to poor production. The social and economic sectors indicated improvement in the last decade. Considering the significance on their livelihood, around 87% of households expressed willingness to pay for the management of ecosystems.
Lessons learned
The study was limited to identification of ecosystem services and their utility. Understanding the trends in ecosystem services in relation to the wellbeing of people is key to know the real value of the ecosystem. While the dependency on resources is high, the ecosystem health is still maintained. However, for sustainable management, alternative livelihood options like tourism, cottage industries and market for ecosystem services payment are recommended as opportunities to be tapped.
Key messages
Integrating ecosystem service perspectives, based on local context into policies provides significant opportunities to contribute to key targets of sustainable natural resource management improvement on the quality of life of local people who depend on these systems.
Relationship to other IPSI activities | NA
Funding
The study was supported by the International Centre for Integrated Mountain Development (ICIMOD), through European Union funding, under the broad program of "Support to Rural Livelihoods and Climate Change Adaptation in the Himalayas (Himalica)".

Contributions to Global Agendas

The table below shows based on the self-evaluation by author(s). ● and ■ indicates the "direct" or "indirect" contributions to the following global agendas respectively to which the work described in this case study contributes to.

CBD Aichi Biodiversity Targets (https://www.cbd.int/sp/targets/)

Strategic Goal A				Strategic Goal B					
●	■	■	■	■		●			
1	2	3	4	5	6	7	8	9	10
Strategic Goal C			**Strategic Goal D**			**Strategic Goal E**			
	■		■	■			■	●	
11	12	13	14	15	16	17	18	19	20

UN Sustainable Development Goals (SDGs) (https://sustainabledevelopment.un.org/sdgs)

■		■		■			■	
1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION	7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
	■	■	■		■			
10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION	13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS	