IPSI Case Study Summary Sheet

Basic Information

Title of case study			
Indonesia: Rice Terrace Landscapes and Irrigation Associations (*Subak*) in Bali Island			
Submitting IPSI member organization(s)			
United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS)			
Other contributing organization(s) *(IPSI members and/or non-members)*			
Japan Wildlife Research Center (JWRC)			
Author(s) and affiliation(s)			
Japan Wildlife Research Center (JWRC); Kaoru Ichikawa (UNU-IAS), ed.			
Format of case study *(manuscript or audiovisual)*	Manuscript	Language	English
Keywords			
Rice paddy cultivation, rice terrace, inland water			
Date of submission *(or update, if this is an update of an existing case study)*		March 2012	
Web link *(of the case study or lead organization if available for more information)*	http://collections.unu.edu/eserv/UNU:5448/SEPL_in_Asia_report_2nd_Printing.web.pdf		

Geographical Information

Country *(where site(s) or activities described in the case study are located – can be multiple, or even "global")*									
Indonesia									
Location(s) *(within the country or countries – leave blank if specific location(s) cannot be identified)*									
Bali									
Longitude/latitude or Google Maps link *(if location is identified)*									
https://www.google.co.jp/maps/@-8.4559965,114.7913574,10z?hl=en									
Ecosystem(s)									
Forest		Grassland		Agricultural	x	In-land water	x	Coastal	
Dryland		Mountain		Urban/peri-urban		Other (Please specify)			
Socioeconomic and environmental characteristics of the area									
The vegetation on Bali Island varies from monsoon forests in highlands to tropical rainforests in the lowlands through to savanna vegetation in between, as well as to mangrove forests in the coastal areas. Local communities are closely tied to nature, culture and religion. The number in the workforce in agriculture, forestry and fishery sector is decreasing.									
Description of human-nature interactions in the area									
The paddy field (rice terrace) landscape is a typical landscape seen in Bali Island. In Bali, the perennial crops grown on the land around the rice terraces include bananas, oranges and mangoes, with bamboo groves and different kinds of palms growing well. In the north, due to the lower precipitation than in the central south, coffee and coconuts are cultivated and livestock farming is practiced. The paddy field landscape is founded on the *subak* system, a system of highly developed traditional irrigation associations.									

Contents

Status *("ongoing" or "completed")*	Completed	Period *(MM/YY to MM/YY)*	03/2012
Rationale *(why activities or policies described, or information shared in the case study are needed)*			
This study was commissioned to be included in the publication "Socio-ecological Production Landscapes in Asia".			
Objectives *(goals of activities or policies described, or of producing the case study)*			
This chapter provides an overview of rice terrace landscapes and irrigation associations in the area.			
Activities and/or practices employed			
Literature review, field observation.			
Results			
The paddy fields provide various benefits, including sustainable watershed management, flood control due to the temporary reservation of rainfall in the paddy fields, groundwater recharging and the stabilization of river flows due to the delayed discharge of water. The appropriate maintenance of irrigation facilities, including reconstruction and repairs, has been indispensable to the establishment of paddy cultivation on Bali Island.			
Lessons learned *(factors in success or failure, challenges and opportunities)*			
At present, rice cropping on Bali Island is under the threat of a decline in its practice for both technical and non-technical reasons. Serious problems include the competition for land and aquatic environments, the decline in the area of irrigation and the resultant decline in rice yields. At least 5,000 ha of paddy fields have been converted to nonagricultural uses, including housing and industrial sites over the last seven years.			
Key messages			
Taking into account the fall in the yield and price of rice in Bali Island, the sociocultural functions, one of the most important functions among the nontechnical aspects of paddy agriculture are brought to attention and the approach that does not simply treat irrigated agriculture as a technical domain, but as an integrated cultural system is suggested as effective.			
Relationship to other IPSI activities *(if the case study is related to any other IPSI collaborative activities, case studies, etc.)*			
This case study originally appeared in the publication "Socio-ecological Production Landscapes in Asia". *This Summary Sheet was produced by UNU-IAS alone.			
Funding *(any relevant information about funding of activities or projects described in the case study)*			
This study was commissioned by UNU-IAS.			

Contributions to Global Agendas

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

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

Strategic Goal A				Strategic Goal B					
●						■			
									
Strategic Goal C			**Strategic Goal D**			**Strategic Goal E**			
■			■				■	■	
									

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

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

	■							■
								
		■			■