

Chapter 1

Current Understanding of Shifting Cultivation

Introduction

Shifting cultivation is a farming system mired in misunderstanding. For years it has been seen by governments and development workers as an anachronistic, outdated, and even destructive practice – summarised in the negative phrase ‘slash-and-burn’. But why did this type of farming become common practice across vast swathes of mountainous Asia, continuing for centuries? Why do close to 400 million farmers in the region, despite all gentle and forced attempts to persuade them to change their ways, continue the practice? Is it possible that in fact farmers in the region developed one of the most efficient and least destructive ways of using steep and fragile slopes for production of a varied and balanced diet, whilst protecting the land on which they rely? Recently these questions have become the central theme of a new debate in the eastern Himalayas. Scientists and development workers have begun to realise that while there clearly are examples of negative impacts, shifting cultivation can actually represent an efficient and appropriate form of agroforestry for the steep slopes of the region. Indigenous shifting cultivators have a vast store of local knowledge about their particular landscape and how best to use it for survival, and have much to teach the world about the efficient use of their landscape for combined agriculture and forestry. Equally modern pressures are forcing changes and limiting proper application of the practice. Shifting cultivators are introducing innovations in response that also suggest possibilities for reconciliation of different approaches in the future. This book attempts to document some aspects of this new debate.

Shifting Cultivation – Rotational Agroforestry in Practice

The term shifting cultivation is often used interchangeably with slash-and-burn or swidden agriculture. A wide variety of practices across the globe fall under these terms. Most are characterised by a short ‘cultivation phase’ of a few years followed by a relatively longer ‘forestry phase’ usually referred to as the ‘fallow’. However, there are significant differences in the practices which affect their sustainability and management choices. These have been discussed in some detail by Fujisaka et al. (1996). Such factors are, for example, to what extent does it represent conversion of primary forest versus re-cultivation of secondary forest? Are farmers members of indigenous groups or recent settlers with limited local agro-ecological knowledge? Are lands left to fallow or converted to (permanent) pastures or plantations? Are fallows relatively long and ‘stable’ or short, reducing in recent times? And how

integrated into the national cash economy are the different groups studied? Fujisaka et al. (1996) define 'traditional' or 'integrated' shifting cultivation as the form in which indigenous communities clear and cultivate secondary forests, and leave parcels to regenerate naturally via fallows of medium to long duration. This is the type of shifting cultivation discussed in the present publication.

This type of shifting cultivation is known under different names in the different countries included in the study. In Bangladesh and North East India it is called 'jhum', which literally means 'shifting'; in Myanmar it is 'taungya' or 'hill crop land'; and in Nepal 'khoriya' and 'basmé', which refer to the fallow phase. In Bhutan, 'tseri' refers to the shifting cultivation with forest fallows practised at lower elevations, while 'pangzhing' is a similar practice at elevations close to the tree line where the fallows are mainly grass and shrub.

The common (mis)perception of shifting cultivation is clearly indicated in the terms used to describe it. They give the wrong focus centred on negative images, the slashing, burning, and shifting, and the image of fire. Especially the term 'slash-and-burn' draws attention to a land clearing technique that is used by shifting cultivators as part of their rotational cycle, as well as by others who clear forests for permanent land use. The term draws attention to only a small part of the complete shifting cultivation cycle, and leads to confusion between shifting cultivators and recent migrant settlers from the plains. This language has contributed further to the general condemnation of the practice and the difficulties it faces in gaining respect and acceptance. Shifting cultivation is much better described as rotational agroforestry, agroforestry with a burn cycle, or a form of forest gardening – terms that focus on the growth cycle and continuation rather than the cutting cycle. Farmers practising shifting cultivation actually spend many more years growing trees and crops than burning them – protecting the soil, restoring nutrients, fallowing, and resting.

The bad reputation of shifting cultivation comes partly because the fallow period tends to be seen as abandoned and unproductive rather than as the regenerative phase and an integral part of the cycle. The methodology is thus considered to be wasteful, inefficient, and a leading cause of deforestation; rather than an admirable way of maintaining forest while practising agriculture. As a result, governments have often allocated fallow areas for other purposes, thereby reducing shifting cultivators' access to land. Until recently, state policies invariably viewed shifting cultivation as an old practice that needed to be stopped. Currently, shifting cultivators in the eastern Himalayas face problems with a dwindling natural resource base and difficulties in meeting their livelihood requirements. The question is, however, whether these problems are inherent to shifting cultivation, or the result of policies adopted by governments.

The Need for New Policies

Why is it urgent to re-examine and revise our policies? Shifting cultivation is still the most widely practised farming system in the sub-tropical and tropical zones of the eastern Himalayan region (Sharma and Kerckhoff 2004), including in the Chittagong

Hill Tracts of Bangladesh, eastern Bhutan, southwest China, North East India, hilly Myanmar, and parts of Nepal (Figure 1). It is the dominant land use system across much of South Asia, with an estimated 10 million hectares of land cultivated in this way in the above named areas and parts of Lao PDR, Cambodia, Northern Thailand, and Vietnam (Figure 2). Across Asia, more than 400 million people are dependent on tropical forests and a majority of them practise shifting cultivation.

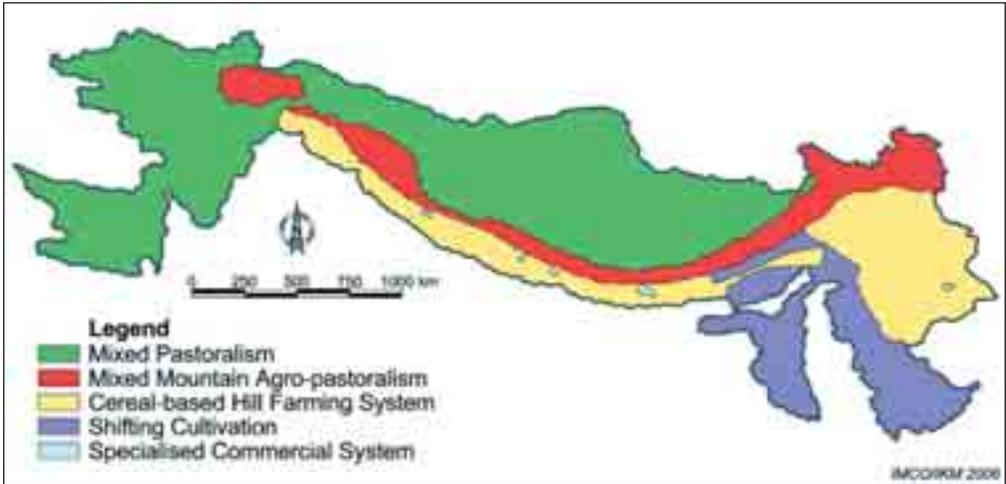


Figure 1: Farming systems in the Hindu Kush-Himalayan region



Figure 2: Shifting cultivation in Myanmar; Nyaungshwe Township, Shan State, Myanmar

The majority of shifting cultivators in the eastern Himalayas belong to indigenous ethnic minority groups. Most of these ethnic minority groups subsist on variations of forest farming supplemented by hunting and gathering activities. Shifting cultivators have benefited from neither the 'green revolution' nor the fruits of Asia's economic growth. They remain on the fringes of society – geographically, politically, and economically – and are frequently among the poorest of the poor, the 14-38% of people in the region who subsist on less than US\$1 per day. The survival of these indigenous peoples and their tropical forest habitats are inextricably linked. However, in many of these places, property rights regimes have made shifting cultivators illegal squatters on land that has been cropped by their ancestors for countless generations; no concerted effort has been made to address this dichotomy in the eastern Himalayan region as a whole, despite individual country initiatives.

Present policies tend to work against good practices of shifting cultivation. These policies are mostly based on questionable perceptions of the ecological and livelihood realities both of the practice itself and of the farmers involved. Policymakers, governments, and analysts have often assumed that shifting cultivation is universally unsustainable and destructive of forests and wildlife and have failed to recognise the great variety of land use types involved, to understand the cultural knowledge of the indigenous peoples, or to realise the vast number of plant and tree species associated with shifting cultivation. Modern tenurial arrangements often undermine the motivation of farmers to invest in longer term agricultural and forestry practices. For example, the laws and policies of many countries treat fallow areas as empty or unused land without valid tenurial claim, despite the fact that they are an integral part of the shifting cultivation cycle.

Implications for Biodiversity

The eastern Himalayan region is one of the 34 'biodiversity hotspots' of the world (CI 2005). However, although it is one of the richest regions in the world in terms of biodiversity resources, it is also home to some of the poorest people, whose livelihoods are heavily dependent on those same resources.

Although the state is the de jure owner of the majority of the tropical forests in the region, some which have already been gazetted as parks and preserves, the ground reality is that most are inhabited by indigenous peoples who depend on them for their livelihoods. These people are the de facto managers of these forests and have been for thousands of years. They have accumulated a wealth of knowledge about the forests that has been passed down verbally from generation to generation. Their practice of rotational agroforestry has actually helped to establish and maintain the biodiversity of the tropical forests, in contrast to areas inhabited by settled agriculturalists in the plains and lowlands around the world, which have simply been cleared of trees permanently.

If land used for shifting cultivation is 'protected' and closed to use by indigenous people, it could actually lead to a long-term reduction in the overall biodiversity of

the region, as the changing pattern of agriculture, shrub, and forest fallow land provides a greater variety of habitat for flora and fauna than simple 'forest'. Similarly, if land is cleared for permanent cultivation in an effort to 'settle' these people, it will definitely lead to an overall loss in forest cover.

Marginalisation of Indigenous Peoples

Integrated shifting cultivation – or rotational agroforestry – is mainly practised by indigenous peoples. These groups tend to be marginalised by mainstream society, and their approaches tend to be dismissed as at best 'inappropriate in modern times' and at worst simply as 'primitive'; which adds to the misjudgement of the practice. Their intimate knowledge of their environment is rarely valued, unless it can be exploited for profit, and is often ignored or even denied. When policies are developed by people from the plains for mountain areas, they are usually based on perceptions of the needs of the environment and the local people that are extrapolated from the plains experience, and are intended to provide what plains people perceive as benefits.

Some of the major factors that contribute to the continued marginalisation of indigenous peoples include intra-state conflicts that lead to a lack of security; federal and national policymakers paying less attention to the needs and aspirations of indigenous peoples compared to more mainstream groups, leading to alienation; widening disparity and inequities between the wealthy and the poor; ambiguous tenure and property rights regimes, including loss of access to and control over common property resources; demographic changes, including both refugee migration across borders and internally displaced persons; and an illegal trade in biodiversity products.

Recent Developments

Recently, a number of national governments in the eastern Himalayan region have begun to take proactive steps to enable sustainable development for their people, the majority of whom belong to a diversity of ethnic groups and minorities. Most importantly, the governments are initiating a set of policies and practices aimed at sustainable management of the bio-resources of the region.

Both farmers and policy makers are key players in the current developments in shifting cultivation. Like farmers all over the world, shifting cultivators constantly try to modify their farming to address the modern needs of larger societies. This is done through an innovative process that is based on guiding principles derived from previous experiences, as well as prevailing values related to what is necessary and appropriate. Their actions take place within the boundaries set by developments and policies resulting from the work of policy makers, who are responsible for the sustainable development of shifting cultivation areas.

In the eastern Himalayas, however, this innovation process seems not to be working effectively for the benefit of either communities or policy makers. Policy makers often feel that farmers are slow to respond to their guidance, whereas recent studies show that many well-intended farmers' efforts are misunderstood and

undermined by current policy and government practice. The greatest risk in the current situation is that shifting cultivators are made to give up their traditional practices but are not provided with real alternatives, as these would take a long time to materialise in practice.

A growing pool of more recent literature has shown how wrong the misconception is of fallows as abandoned and unproductive land – and that far from being abandoned, fallows are often carefully managed by farmers to provide a wide range of economic products and environmental services. Some, for example, transform their shifting cultivation fields into secondary forest gardens by planting them with trees that provide fruits, nuts, resins, fibre, medicinal herbs, and building materials. This forestry phase thus makes a critical contribution to the household economy. Other farmers introduce soil-building trees into their fields that enhance the biological efficiency of the fallow so that soil fertility is rejuvenated, weeds suppressed, and other fallow functions achieved within a shorter time frame. This permits a shortening of the fallow phase without sending the system into a downward spiral of degradation. In turn, this intensified cultivation deflects agricultural pressure from expanding into nearby forests. Rather, they can be excluded from the shifting cultivation cycle and instead preserved as community or state forests.

The ICIMOD Initiative

Despite intensive and lengthy government efforts throughout the eastern Himalayan region to stop the practice of shifting cultivation, the practice has remained entrenched over large areas. Recognising this, the International Centre for Integrated Mountain Development (ICIMOD), with support from the International Fund for Agricultural Development (IFAD), and joined by partners in five countries of the eastern Himalayas (Bangladesh, Bhutan, India, Myanmar and Nepal), designed a new initiative based on the idea that shifting cultivation must make some sense if hundreds of millions of farmers continued to practise it despite all incentives to stop.

The study was designed to take a fresh and unbiased look at the practice, and especially at innovations introduced by farmers in response to modern pressures and restraints. The hope was to find innovations that would help resolve the current situation in which outside interventions are not taking effect, while the practice of shifting cultivation is deteriorating as a result of the limitations imposed on it. The aim was to raise awareness about issues related to shifting cultivation, to establish a platform for exchange of ideas, and to develop detailed policy recommendations to support the work of governments.

The overall design of the project is summarised in Figure 3. The activities started with the formation of country focal teams at a regional partner consultation meeting, and the selection, design, and performance of 20 detailed case studies in the five countries (locations shown in Figure 4) to document the details of local practices of shifting cultivation. The country teams selected and analysed their cases based on their own views and country context. They paid special attention to

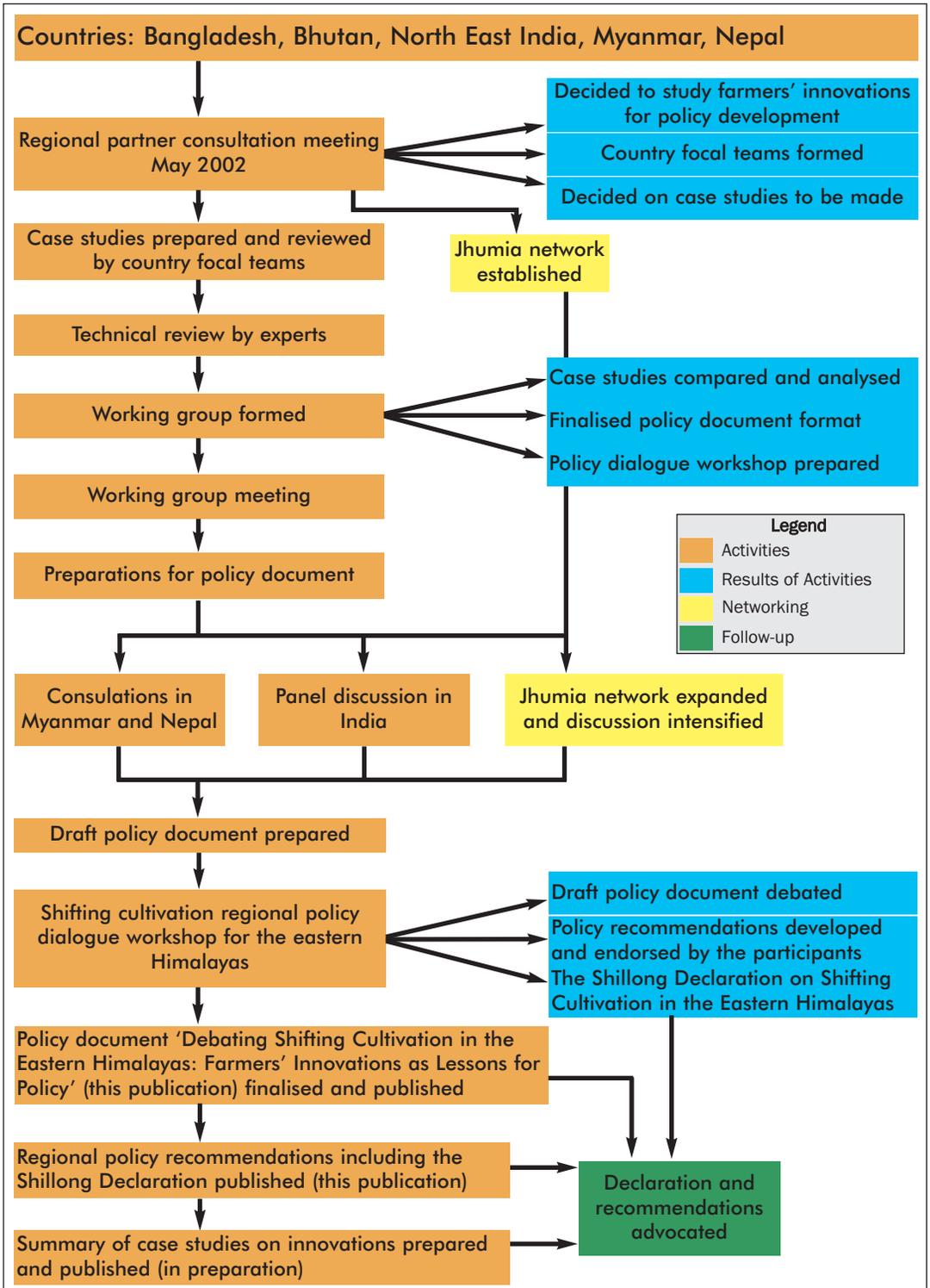
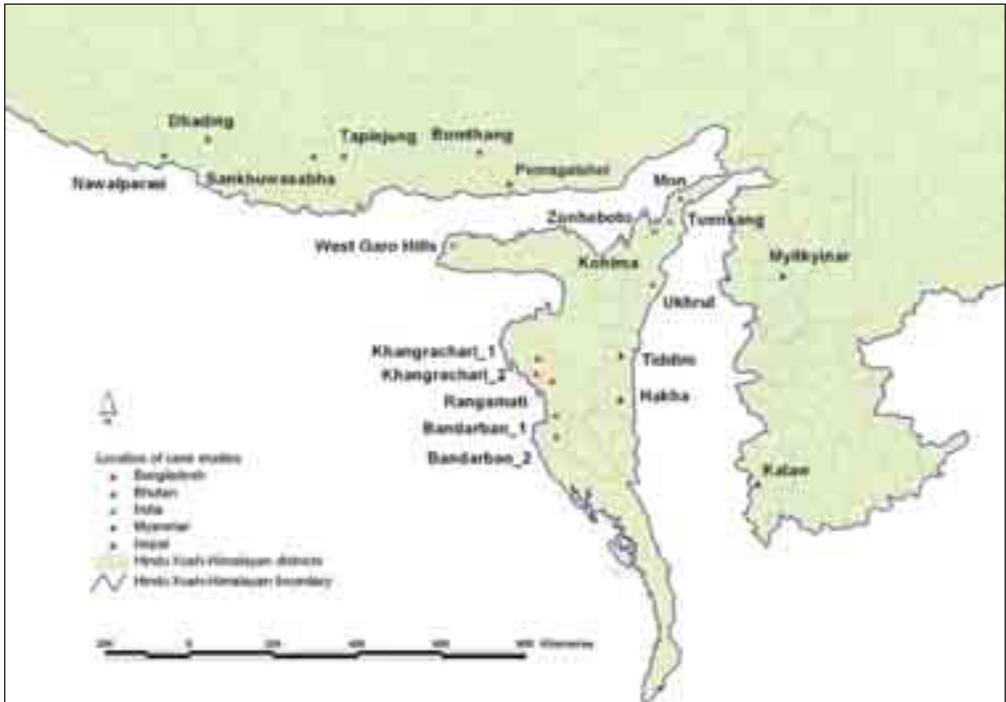


Figure 3: Farmers' innovations in shifting cultivation: policy implications – project design



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Figure 4: Map of case study locations

the benefits that accrued to farmers, the environmental impact, and any recent innovations in the methodology. The focus was on the positive developments and benefits; negative developments were not ignored, but they were not studied in the same detail as there is already considerable awareness of negative developments and impacts, both real and assumed. This study was designed to provide the basis for a more balanced assessment of shifting cultivation to redress the almost purely negative viewpoint prevailing in development circles.

A 'Jhumia Network' was established in parallel as a platform for dialogue – both direct and electronic – for the broad spectrum of people in the region with an interest in shifting cultivation including, researchers, development workers, policy makers, members of community-based and non-government organisations, and practitioners. The case studies were reviewed by experts and discussed by the regional partner group. The findings and lessons learned from the case studies and Jhumia Network discussions were summarised through a series of discussions and consultations and used as a basis for developing policy recommendations. The major findings were finally discussed and agreed at a Regional Policy Dialogue workshop held from 6-8 October 2004 in Shillong, India. Participants included representatives of government agencies, farmers, international bodies, non-government organisations, academia, science and research institutions, local institutions, international donors and development assistance agencies, the private sector, and other professionals (see Annex). The workshop participants formulated the major policy issues and recommendations. In response to the suggestion of the Honourable Union Minister of the Government of India on Tribal Affairs and

Development of the North East Region, Mr. P. R. Kyndiah, these were encapsulated in the form of the 'Shillong Declaration on Shifting Cultivation in the Eastern Himalayas' (see Chapter 6), which was adopted on October 8th, 2004.

The main findings of the case studies and discussions are summarised in this publication. Together these are now being used as a basis for advocacy of new approaches to shifting cultivation – rotational agroforestry – in the eastern Himalayas and beyond, which are now being included in new government policies.

First results

The careful documentation and validation of shifting cultivation practices has helped to show that the common stereotype of shifting cultivators as engaging in wanton destruction of forest ecosystems is more the result of misunderstanding and misinterpretation than a real truth. The results of the study suggest strongly that shifting cultivators are more accurately portrayed as forest planters and managers. Regardless of whether trees are chosen for economic or biological purposes, or most commonly a combination of both, the improved forest fallows play an important role in conserving biodiversity and deliver many of the same environmental services as primary tropical and sub-tropical forests. The fallow phase helps in species regeneration, maintenance of biological richness of forest species, and continuing land coverage by healthy secondary tropical forests. There is thus a growing stream of thought that mechanisms should be devised to compensate forest-dwelling communities for the real services that they provide in managing these forests. The results of the ICIMOD study clearly showed the benefits of shifting cultivation, the practices within shifting cultivation that provide these benefits, and the efforts of shifting cultivators to maintain such benefits under the current circumstances. The study also shows the ways in which policy development can contribute to these efforts.

While the present research is not sufficient to clearly confirm a purely positive or negative view of shifting cultivation, it has served to reopen the debate and suggest a major shift in approach. The study does not deny that problems exist with the present practices or pretend to solve them all. However, it makes a strong contribution towards changing the current research and policy paradigm from an overly negative perception into a constructive approach towards dealing with current issues by building on farmers' innovations. The farmers' practices presented in the following chapters are not all common practice. Rather, they are innovations that show that farmers are aware of the current problematic situation and trying to deal with it. These innovations indicate that shifting cultivation can be managed even under changing circumstances and still has much to provide.

During the course of the study and discussions, it became clear that shifting cultivation – if properly practised – is actually a 'good practice' system for productively using hill and mountain land, while ensuring conservation of (fallow) forest, soil, and water resources. The practice has marked benefits, not only for the shifting cultivators themselves, but also for the countries where it is practised and

the region as a whole. Four major benefits were identified during the course of the studies and discussions: (1) shifting cultivators conserve more forests on their land than any other farmers, and make it productive at the same time; (2) biodiversity conservation is favoured in the forest and farm management practised in shifting cultivation; (3) shifting cultivation is a storehouse of species of commercial value and innovative organic farming practices; and (4) social security is one of the main functions of local institutions of shifting cultivators.

Organisation of the Book

This publication has been prepared in order to share the experiences and knowledge gathered during the course of the project with a wider audience, especially those involved in the policy-making and decision-making that will affect the future of shifting cultivation.

The book is divided into three parts, the first of which is this Introduction. Part 2 provides a summary of particular characteristics of shifting cultivation and farmers' innovations as identified during the course of the project. These findings are presented in four chapters, each focusing on one of the four major benefits identified. Part 3 looks at the lessons for policy that were extracted by comparing the case studies at a regional level. This comparison proved to be a useful exercise both for identifying the benefits of shifting cultivation, and for defining policy options that will help these benefits to be harnessed. These findings are summarised in the policy issues and recommendations formulated by participants at the regional policy dialogue workshop, and the full text of the 'Shillong Declaration for Shifting Cultivation in the Eastern Himalayas.' The final chapter, 'Outlook', provides a brief glimpse of the future and summary of policy developments in progress.