

# Agricultural land-use change and implications on rural livelihoods: A case study from Dagana/Bhutan

## Introduction

The whole topic concerning the enhancement of farmers' sustainable livelihoods in rural areas is without doubt a very complex one. How is it possible for relevant stakeholders to take responsible decisions in a field where various different factors and actors are involved, affecting each other in sometimes unpredictable ways? Being aware of this complexity and the interconnectedness of socio-cultural, ecological and economic influencing factors, this work tries to shed light on certain dynamics of agricultural land-use change from a local perspective.

The work argues, following (LAMBIN ET AL 2001:266), that general patterns may play an important role in understanding agricultural land-use change, but that an understanding of an unique local context and its variables is essential in getting a more detailed and precise picture of land-use change.

Being part of a research project (BC-CAP) with the aim to *enhance livelihoods in Bhutan through improved adaptation measures to climate change and increase carbon stocks*, this work wants to contribute in a way to provide an additional perspective using a qualitative methods approach. The overall aim of this undertaking can be shortly framed with a look at the "[...] lived experiences of peasants in Bhutan as human agents at the nexus of social, political, economic and ecological forces [...]" (Wangchuk, T. 2000:1).

## Research questions

What are current dynamics of agricultural land-use in a village in southern Bhutan with a focus on farmers' sustainable livelihoods?

- What are main livelihoods strategies of farmers living in Tashithang village in order to sustain their living?
- Which processes of change influence the agricultural transition in the area and how do they materialize at the community level?
- What is the role of national policy strategies in the field of agricultural land-use change and how do they emerge at the community level?

## Methods

Before starting the fieldwork in Bhutan, my first step was to conduct a literature review about the field of interests. For the empirical fieldwork I spent 12 weeks in a rural area in southern Bhutan where I focussed on 1 chiwog (village).

For answering my research questions I decided to use an ethnographic approach. This integrated qualitative research approach included participant observation on a farm-household-level, the procedure of semi-structured interviews (9 interviews with farmers on a community level, 5 expert interviews), ad-hoc ethnographical interviews with community members and PRA-methods such as transect walks and a seasonal calendar.

All interviews were recorded and transcribed using a voice-recorder and the computer software „F5“. Field notes, interviews and documents got analyzed following the thematic analysis approach after BRAUN and CLARKE (2006), using MaxQDA for Qualitative Data Analysis.

## Preliminary findings

Agricultural land-use change was observed as being a complex process between various interplaying actors and driving forces manifesting on a local level.

The livelihoods strategies and living conditions of farmers in Tashithang were noticed as changing in a rapid pace with far-reaching implications.

### Modernization and development:

Current processes of Modernization in the region were perceived by farmers and representatives as leading to an increased living standard.

The construction of roads, provision of electricity among others appear to be big steps towards a looming process of development and modernization in the region.

### Cash-crops and subsistence change:

It begins to show that money gets an ever-increasing importance in this formerly subsistence-based economy. Thereby, Cash-crops and the associated need for farmers to earn money are resulting in a significant change of cropping patterns and implications for the land-use system.

Subsistence agriculture, food habits and living conditions are changing. In an ongoing process, staple crops such as

## Case study: A farm in Tashithang

### Head of farm (HOF): D.R. Subbha

- 3 people living permanently on the farm: grandmother, her son (HOF) and stepdaughter
- Private land ownership: 9.5 acres on mostly slopy terrai
- Extension of land-use types  
dry land: 3 acre/ wet land: 1.35 acre/ orchards: 5.15 acre

### Main crops (approx.):

Crop	Acreage	Harvest	Income/Year (BTN)
Cardamom	5,15, acre	90 kg	100.000
Vegetables	0,40 acre	?	app. 30.000
Maize	1,5 acre	1200 kg	3.000
Potato	0,25 acre	200 kg	subsistence
Paddy	1,35 acre	500-600 kg	subsistence

Table1: Main Crops approx. (EUR - BTN 1:75.2)

### Livestock:

Cattle 9 / Goats 11 / Chicken 8

### Subsistence change:

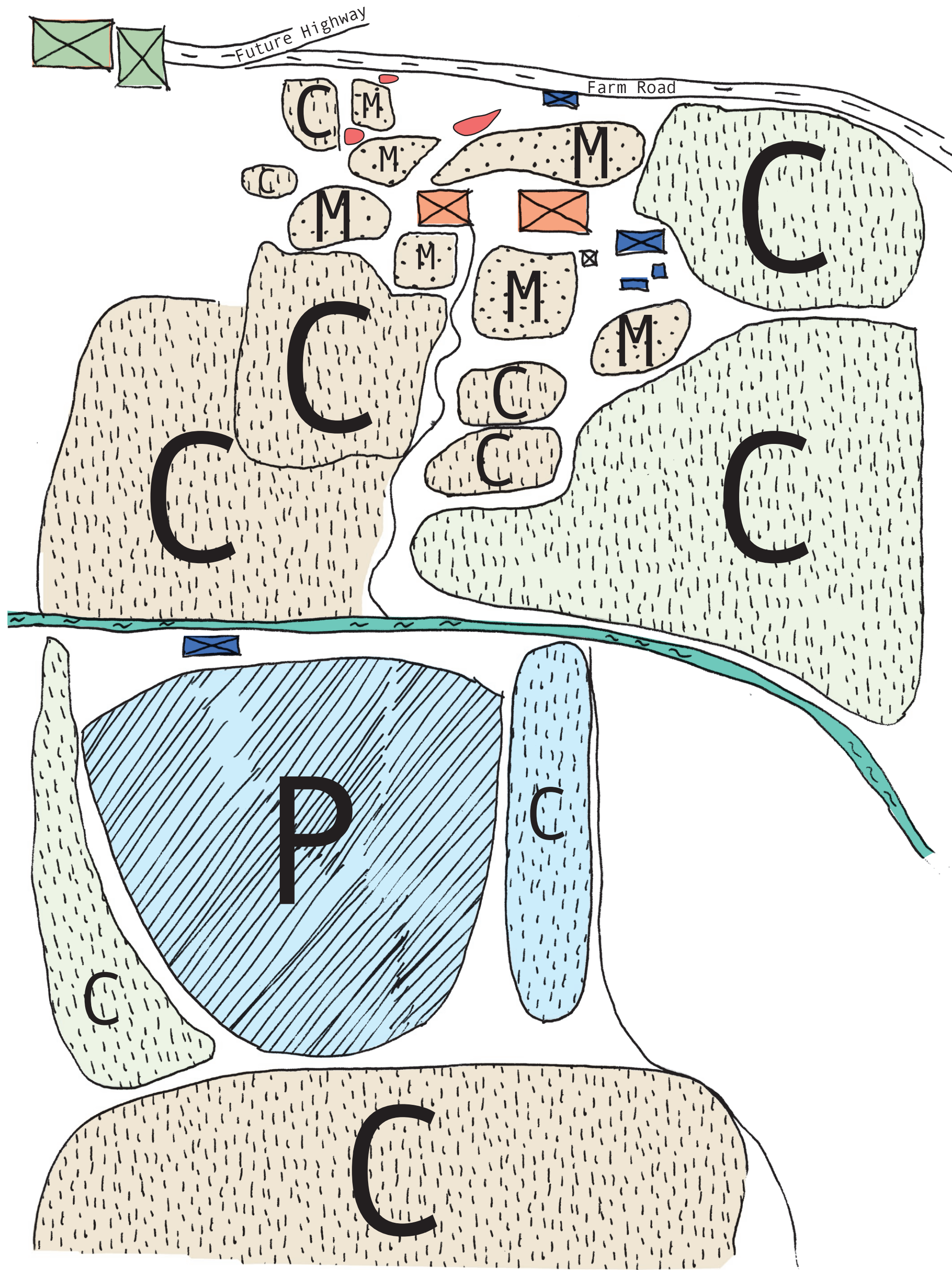
- Family was comparable rich in the past
- Livestock rearing was the main livelihood (mithun, buffaloes, cattle)
- Most animals were sold due to lack of labour and changing circumstances

### Rushing for the black gold:

- Former maize and paddy fields have been converted into cardamom orchards in the last two years.
- Alainchi (black cardamom) gives a high economic return comparing labour invested (hired labour and service exchange) related to money income
- 1 mon (40 kg) of cardamom could be sold between 75.000 BTN (996 €) and 100.000 BTN (1328 €)
- Lack of labour force on the farm contributes to the focus on black cardamom

### Education, migration and agriculture

- Children return home during their vacation (2 months in winter, 2 weeks in summer season)
- 3 younger kids attending the newly introduced Gesarling central school with boarding facilities
- In central schools everything is provided by the government and free for the families (clothes, books, food, hostel, caretakers, etc.)
- Eldest son (19) attending a private college in Gelephu after not passing the exam to continue in governmental system. Family has to pay 50.000 BTN (665 €)/year
- It is still unclear whether one of their children will return to continue the farm work



### Legend

orchards	house
wetland	stable-building
dryland	local shop
irrigation channel	kitchen garden
maize	
paddy	
cardamom	

„While we are talking about the topic of jungle and cowboys he is frying the buffalo-skin in the electric pan saying that he likes this kind of life in the jungle. When he was 15 until he was 32 years he used to go up. He told me that there is no tension. They only have to cut grass once a day and to do milking. But apart from that, they are free to do whatever they like. [...] In 1992 he started going to the jungle until the year 2010. When I asked him who has done all the work while his absence he said that there was no problem at that time. Two of his sisters, the one from the Dokan [local shop] and one who lives in Thimphu now, stayed at home together with his parents and his wife, so there was no problem concerning that. His wife and him got married in 1994. His father and himself they both went up to the jungle always changing. When there was heavy work at home that had to be done, he came back for ploughing the field, collecting firewood etc. During this time, his father went to the jungle“.

Rai, D.R. (2015, 3<sup>rd</sup> of October). Personal interview.

Then, with the opening of the road, more cash-crops like cardamom and then orange, people started planting oranges in the Maize field instead of cultivating, growing Maize, instead of growing Paddy. Instead of cultivating paddy they have cardamom, they have oranges. Because from that there is higher income and less work, it is less tedious.

Gurung, F. (2015, 16<sup>th</sup> of September) Personal interview.

„[...] If you go on my field you see, there is no much more agriculture things, just now I am just new to agriculture. Though I was brought up with agriculture, practically I am new to them. thoroughly I have an idea, but practically I am new to them. In small area, but I am focus on good quality“.

Moti, S. (2015, 10<sup>th</sup> of October) Personal interview.