

The Vital Link

Munpas and Their Forests



Seeta Giri

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*This book is dedicated to
the Monpas of Jangbi, Wangling and Phumzur*



5th December, 2004

Foreword

Seeta Giri's "The Vital Link: Monpas and Their Forests" is the first comprehensive study of the Monpa communities of Bhutan. It gives a deep insight of their origin, history, their spiritual practices and how they live in harmony with nature. The Monpas sustain the environment as the environment sustains them having being interdependent on each other for thousands of years.

This documentation of the Monpas, who are very few in number, living in the heart of our country, is very timely as mainstream culture erodes their original way of life. They are very precious being the last of the remaining original inhabitants of our country with their religion and self-sustaining livelihoods having existed before Buddhism came to Bhutan. Having met the Monpas in their villages in Langthil geog in Trongsa and in Adha Rukha in Wangdiphodrang, I understand their need to improve their quality of life while at the same time preserving their age-old beliefs and customs. This must be facilitated and respected without the Monpas becoming a museum society.

The rest of Bhutan can learn from the Monpas to understand and appreciate our origins and to know that independence comes from dependence on each other and the environment. The fruit of Seeta Giri's research not only creates awareness of the Monpa communities but also instills appreciation and responsibility for the vulnerable communities in our country. I commend and congratulate Dr. Giri for shedding light on Monpas of Bhutan.

Tashi Delek!

A handwritten signature in black ink, appearing to read 'Dorji Wangmo Wangchuck'.

Dorji Wangmo Wangchuck
Queen of Bhutan

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Seeta Giri

GLOSSARY

ara	distilled alcohol made from cereals
bangchang	brewed beer, made from cereals
bangchung	lunchbox made of bamboo
cham	wooden beam used to build house
champaka	white flowery seeds from <i>Oroxylum indica</i>
chanjey	gift
chathrim	rules and regulations
chorten	stupa/ Buddhist monument
chunyer	drinking water and irrigation water watchman
chuzhing	irrigated land where paddy is grown
dambro	green leafy vegetable collected from forest (<i>Elatostema platyphyllum</i>)
deng	Tree fern (<i>Cyrtosperma</i> spp.)
duth	deity
dzong	fort
dzongkha	national language of Bhutan
dzongkhag	district
genja	agreement
geog	smallest administrative unit, equivalent to a Block
gho	dress worn by Bhutanese men
gomchen	lay priest
guli	fruit of <i>Persea fructifera</i>
gup	elected head of <i>Geog</i>
kamzhing	dry land where non-irrigated crop is grown
kappa	pin made of bamboo
karma	deed
kasho	court circular or royal decree
kera	belt
khengkha	dialect of the <i>Khengpas</i>

kidu	welfare, term used for a welfare petition to the King
kira	dress worn by Bhutanese women
kulima	nettle plant (<i>Giardina diversifolia</i>)
lhakhang	Buddhist temple
Lhotsamkha	language spoken by Lhotsampa
Lhotsampa	Bhutanese people of Nepali origin living in the south part of Bhutan
mang	community
mangap	village elder (also assistant to gup)
mangrimdo	ritual performed for the well being of a community
Mempas	Monpas of Wangling, Jangbi and Phumzur
menyer	village forest guard
meptshi	torchwood from pine tree
migmar	Monday
Monkha	dialect of the Monpas
naem	daughter-in-law
nye	sacred pilgrimage site
pacha	cane shoot (used as vegetable)
pagay	dress worn by Monpa men and women
palang	bamboo pail used as water/wine container
pamo	female traditional healer (shaman)
patang	Bhutanese knife
pawo	male traditional healer (shaman)
phurba	thunderbolt
puja	general term in Nepali for religious prayer ceremony
reedam	traditional forms of sanctions
sadag	deity of the land
saptolemi	labour contribution to Royal Government
sathram	land record
shinglep	wood used as roofing shingle
shingnyer	agriculture crop damage arbitrator
sisiseng	Oak tree (<i>Quercus griffithii</i>)
so-dalang	a tightly woven container made of cane
sokshing	government forest registered in individual's name for collection of leaf litter

togo	jacket worn over the kira
Thram	a certificate issued by the Land Record Office to the proprietor of registered land as proof of ownership
Thrimzhung	Supreme Laws
Chhenmo	
Tsamdo	grazing land
tseri	forest land registered in an individual's name for shifting cultivation
tshoesa	vegetable garden
tshogpa	elected or nominated head of a village
wangpem	edible orchid (<i>Calanthe Spp.</i>)
yika-makhu	oil extracted from the seeds of <i>Aesandra butyracea</i>

ACRONYMS

BMNP	Black Mountain National Park
DoFS	Department of Forestry Services
FAO	Food and Agriculture Organization
GEF	Global Environment Facility
MOA	Ministry of Agriculture
NCD	Nature Conservation Division
NEC	National Environment Commission
NSB	National Statistical Bureau
NITM	National Institute of Traditional Medicine
NTFP	Non timber forest products
Nu.	Ngultrum, Bhutanese currency (US\$1=Nu. 45)
PCS	Planning Commission Secretariat
PRA	Participatory Rapid Appraisal
RGOB	Royal Government of Bhutan
RNR	Renewable Natural Resources
SGP	Small Grants Programme
UNDP	United Nations Development Programme

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Introduction

June 24, 1999. It was a bright sunny day. I began walking down from the roadhead towards Mangdechhu, the major river basin of central Bhutan. Three porters went ahead of me carrying the essentials - sleeping bag, clothes, candles, vegetables and other grocery items. I was followed by my companions- District Forest Officer, Deputy Ranger, and Ap Nakari from Jangbi village who I had only just met. The walk to the river was very short and we were at the Mangdichhu suspension bridge in about 15 minutes.

The view of the river was magnificent and I stopped for a few minutes capturing the beautiful view with my camera. Somehow I felt that I would come again to this place. The excitement of visiting a remote indigenous community in the buffer zone of the Black Mountains made me continue my journey towards Jangbi, the first Monpa village that I was to visit.

Compared to some of the Kheng villages that I had trekked to before, the walk to Jangbi was gentle. As we passed through the forests and streams, Ap Nakari would pluck leaves of the plants beside our trail and tell their names in his local dialect, Monkha, and what they use it for. Similarly, he would point to the trees and describe the taste of different fruits. After two hours of walking we could see a few houses with a couple of orange trees around them. Cattle and roosters roamed nearby.

Soon we began to see a cluster of houses and Ap Nakari informed that we had reached Jangbi. As we walked towards the Community Primary School, where arrangement for my

stay was made, we passed by friendly-looking faces. Some of them had already known that I was coming to visit their village.

The school was the only modern structure in that village surrounded by thick forests and mountains. My room was one of the classrooms, as the school had closed for summer holidays. The Deputy Ranger who turned out to be a great cook, guide, translator, and research assistant brought me a steaming mug of tea. While I began to sip my tea, I saw people gather around the school building. The Deputy Ranger led them to my room and I was offered fruits, eggs and local wine by the Monpa men and women. As in most other rural villages, the Monpas show great hospitality greeting visitors with food and local wine.

The sun was setting down, and I was called by the District Forest Officer to another classroom where local people had gathered. I was told that we could meet and discuss potential project ideas with the people. I had joined UNDP/GEF Small Grants Programme (GEF/SGP) as National Coordinator a few months back, and was invited to visit this community to discuss management of cane and bamboo, the most commonly used resources by the local people. The people needed sustainable supply of cane and bamboo, not only for their household consumption, but also as raw material for their handicraft items which they bartered or sold in the nearest market at Langthil for essential goods such as rice, oil, salt, and clothes.

On my way back to Thimphu, I began to reflect on my two-day stay in Jangbi with warm and friendly Monpas. Ap Nakari was always around me to answer any query I had. During my stay, I also had the opportunity to meet with

Sampa Taula, a respected elderly clergyman from Jangbi. He most eloquently narrated the oral history of the Monpas.

What struck me most about this community was that though not very far away from Trongsa, one of the major towns in Bhutan, it managed to retain its centuries-old traditions and culture. Most of all, the interdependence between the Monpas and the forests around them was of special interest to me. How these two entities have co-existed, while most other parts of the country, and the world for that matter, is grappling with the problem of environmental degradation, unsustainable land-use pattern, and, most of all, loss of culture and tradition!

It was then I decided that I would come back again to this community, and learn more about this indigenous people and their environment. It was also important to document their rich indigenous knowledge of the wild flora, its uses, and management, before it is lost.

This book, “The Vital Link: Monpas and Their Forests”, attempts to capture the social, economic, and cultural dimensions of the Monpa way of life and how the people and their forests have co-existed and sustained each other for ages. In many ways, this book is a tribute to the special bond between humanity and nature that the wonderful Monpas so beautifully affirm and advance.

Seeta Giri

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BHUTAN: AN OVERVIEW

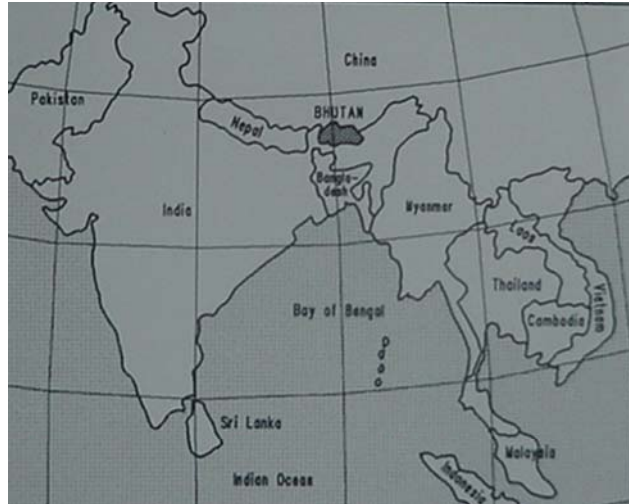


BHUTAN: AN OVERVIEW

General Background

The mountain kingdom of Bhutan, perched between China and India, is located entirely within one of the world's ten global biodiversity 'hot spots', the Eastern Himalayas. The country's rich biological diversity is the result of its unique geographical location in the Eastern Himalayas that extend through both the Oriental and the Palearctic biogeographic regions, and its considerable altitudinal variation from 100 metres in the south to over 7,500 metres in the north. The country covers an area of 38,394 sq km and has a population of 734,340 [NSB 2004].

The Buddhist ethic of universal compassion, the far-sighted policies of the Royal Government of Bhutan (RGOB), and low population density (13/sq.km) have been the most important factors in preserving the Bhutanese environment. With over 70 percent forest cover, Bhutan is known to harbour a wide range of floral and faunal species including over 7000 species of vascular plants, 770 species of birds, 165 mammal species, 46 species of rhododendrons, and over 300 species of medicinal plants that are used in traditional herbal medicine. The country's protected area system is one of the most comprehensive in the world, with more than a quarter of the country designated as protected area which includes four national parks, four wildlife sanctuaries, a strict nature reserve, and a network of biological corridors. Administratively, the country is divided into 20 dzongkhags. Each dzongkhag is further divided into geogs. There are currently 201 geogs in the country. The chief executive of a dzongkhag is the *dzongdag*, and the elected leader of a geog is the *gup*.



Map of South Asia and Bhutan

The geo-physical characteristics of the country fall into three distinct features: the foothills in the south with subtropical forest, the central belt with temperate forest, and the northern uplands with alpine forests and vast rangelands. The orientation and nature of the watershed have influenced the location of settlements and land use pattern. The major watershed that drains the rivers in the eastern region is Manas. The central region is drained by Mangdechhu. The river valleys in the western region are drained by Torsa and Puna Tshangchhu watersheds. People residing in the three different geo-physical regions have responded according to the resources available.

The majority of the population (79%) live in rural areas. The relative isolation of the various valley communities has produced a wealth of agricultural biodiversity and diverse local traditional knowledge. Before forest legislation came into effect in 1969, local communities managed the majority of

forest resource base themselves depending on their personal requirements and communal interest. With various kinds of pressure being placed on natural resources through their diversified use, and dependence of a vast section of the country's population, the RGOB has been introducing centrally controlled regulations for the management of natural resources. In the Forestry Policy of 1991 and the revised Social Forestry Rules of 2000, the RGOB recognises the importance of people's participation in management, use and expansion of forest resources and advocates multiple use to meet the basic needs of the people. In terms of biodiversity conservation, the Bhutan Forest and Nature Conservation Act of 1995 provides the basis for development of strategies for protected areas incorporating the needs of the local people and encourages community participation through establishment of community natural resource management groups.

The natural forest and the traditional integrated farming systems remain largely intact. Bhutan not only has a wide diversity of plant genetic resources but also has a large number of endemics of both cultivated and wild species. Thus Bhutan, though least developed in economic terms, plays an important role in maintaining the global biodiversity and the biodiversity of the Eastern Himalayas, in particular.

Evolution of the Governance System in Bhutan

While no conclusive archaeological studies have been carried out, some stone implements found in Bhutan suggest that the country was inhabited as early as 2000-1500 B.C. Bhutan has existed as an independent nation throughout its history and was never colonized. Buddhism was introduced in the 7th century and is practised by the majority of the population. The other religion is Hinduism. Until the beginning of 20th century,

Bhutan followed a dual system of administration established by Zhabdrung Ngawang Namgyal in 1651. Before the 17th century, Bhutan was divided into different fractions with frequent wars. The Zhabdrung unified Bhutan and established a theocratic system of government including a distinctive administrative system and a code of law. In doing so, he created the office of the *Druk Desi* to look after the temporal administration of the country and the *Je Khenpo* to oversee religious matters. While his successors lacked his stature and vision, this system provided a workable form of government for more than two centuries. However, the elective nature of the post of *Druk Desi* and frequent disputes over the succession to the office of the Zhabdrung resulted in internal instability. The desire of the clergy, officials, and the people for political stability and internal peace led to the establishment of hereditary monarchy. Consequently, the theocracy established by Zhabdrung Ngawang Namgyal came to an end in 1907 when Sir Ugyen Wangchuck was unanimously elected as the first king of Bhutan by popular consensus [NEC 2002].

The Beginning of Modern Development

After centuries of self-imposed isolation, Bhutan opened its doors to the outside world in the early 1960s, during the reign of King Jigme Dorji Wangchuck also known as the “Father of Modern Bhutan”. Development in Bhutan began with the inception of the first Five Year Plan in 1961. Since then, the country has implemented eight Five Year Plans and is now midway into the implementation of the 9th Five Year Plan. Over the past forty years, the country has made remarkable progress in most spheres of national development – “remarkable” especially because it has been achieved without

compromising the country's environmental capital and cultural integrity.

The Bhutanese economy is predominantly agrarian, with 79 per cent of the population living in rural areas and subsisting largely on an integrated system of agriculture, livestock rearing, and use of forest products collectively known as renewable natural resources (RNR). Accordingly, rural development and RNR management are extremely crucial for the nation's progress. A key sector for economic development is hydropower, which is currently the largest contributor to the national revenue. Tourism is another significant sector of the national economy. The country's "high value, low impact" tourism policy and relatively well-preserved cultural and natural heritage lend to the "exclusivity" factor, allowing the country to reap the benefits of tourism sustainably. Preservation of its rich cultural heritage and natural environment has been consistently a pivotal feature in the country's development agenda. Strong conservation ethics, underpinned by the traditional reverence for nature, have influenced the country's approach to environment long before global concerns for environment were raised.

Bhutan's Development Philosophy

Bhutan's development philosophy has been remarkably consistent and has always been marked by a quest for a balance between "the need to have, and the need to be", between preserving its rich cultural heritage and natural environment, and moving forward with economic development. While its basic goal is to improve the living standards and material prosperity of its people as in other developing countries, development in Bhutan is not judged merely in terms of income growth but is viewed in terms of

happiness, contentment, and the spiritual and emotional well being of its people. The outlook essentially is that modernization and progress should be evaluated more by “Gross National Happiness” than simply by Gross National Product or other economic indicators, and that development should take place at a pace consistent with the country's capacity and needs. The RGOB recognizes that a wide range of factors contribute to human well-being and happiness and that it may not be possible to fully and exhaustively define or list everything. For the purpose of its development planning, the country has identified four major areas as the main pillars of Gross National Happiness. These pillars are economic growth and development; preservation and promotion of cultural heritage; preservation and sustainable use of the environment; and good governance.

Economic Growth and Development: The progress towards economic growth and development is broadly indicated by an increase in domestic saving over investment, revenue over expenditure, and export over import. There has been steady progress with respect to all of these financial indicators. However, there is still a long way to go before total government expenditure can be completely financed by domestic revenue. In the near future, revenue from export of electricity from the upcoming hydro-power projects will contribute towards Bhutan’s economic self-reliance.

Preservation and Promotion of Culture: Despite the strong emphasis on cultural preservation, there are inherent obstacles in planning for it. Technocrat planners who are increasingly in charge of the course of the nation, usually have a poor grasp of the cultural setting, as well as a rather dim vision of the cultural shape of the future society. Less is known about local symbols, beliefs, values, ideology and ethno-histories than

about trends and statistics on income, nutrition, health, trade etc. The dynamic relationship between changes in the economic system and the cultural sphere is not easy either to understand or to predict. Unlike economic goals to be achieved, it is difficult to envisage a clear image of the future cultural state of affairs to be attained [Ura K. 2003]. The Bhutanese are also becoming oriented to global culture. Signs of homogenisation and blurred cultural identities are increasingly becoming visible with the rise of imports of both artifacts and ideas. On the other hand, there is also increasing erosion of indigenous culture and tradition through homogenization, as is being observed in many communities in Bhutan.

Preservation and Sustainable Use of the Environment: In Buddhist political theory, a state exists not only for the welfare of human beings, but also for the welfare of all sentient beings. It therefore has an intrinsic duty to preserve the environment. Bhutan is regarded as an environmental leader with its rich biodiversity and pristine environment. Bhutan's environmental legacy can be explained by the following four enabling factors: indigenous institutions for managing common resources like irrigation water, sacred groves and mountains of local deities, woodlots and grazing land; a strong culture of conservation and Buddhist ethics; small population; and enforcement of environmental legislations enacted after 1969. However, greater coherence between the enforcement of national legislations and local people's norms and values is required to continue the preservation of the country's natural resources. If this vital link of interdependence between the nature and the people is not maintained, the sustainability of our bountiful nature will be at stake.

Good governance: A systematic decentralization of authority began in 1981, initiated by the present King to devolve decision-making authority to the *dzongkhag* and *geog* levels. The most profound changes took place in 1998 when His Majesty the King dissolved his Cabinet and devolved all executive authority and power to an elected Council of Ministers who would serve for five-year terms. This was followed by the enactment of the *Dzongkhag Yargye Tshogdu* and *Geog Yargye Tshogchung Chathrims* in July 2002, laws which empower local communities with greater authority and responsibilities to decide, plan, and manage development work at the community level. In 2002, for the first time, the *gup* was elected by one-person one-vote secret ballots across the country. The latest development in Bhutan's political arena is the drafting of the Constitution.

Influence of religion on culture and environment

The majority of the Bhutanese population practice the Vajrayana form of Mahayana Buddhism, which is a mix of the historical teachings of the Buddha and Bon animistic beliefs. Buddhism believes in universal respect for all forms of life and the importance of protecting nature in all its manifestations. This belief is deeply embedded in Bhutanese society and culture. While Buddhism teaches preservation and prohibits killing, Bon inculcates a deep respect for the environment and the belief that all natural phenomena - mountains, rivers, lakes, rocks, and the Earth itself - are imbued with powerful spirits that can influence the general well being of a village, community or society. According to traditional beliefs, to disturb and pollute these aspects of the natural world are to incur punishments from the deities ranging from disease to death. Consequently, the Bhutanese have always treasured the natural environment and looked

upon it as a source of life. This reverence for nature has enabled Bhutan's environment to remain largely intact. Chapters three and five elaborate upon some of these beliefs as seen in the Monpa community.



Chorten and prayer flags

ORIGIN AND HISTORY OF THE MONPAS



ORIGIN AND HISTORY OF THE MONPAS

The Monpas and their Origin

The Monpas have been pushed to the hinter-land of the remote Black Mountain forests today but historically, they were here before the founders of modern Bhutan built dzongs in the valleys of Paro, Bumthang and Thimphu [Dendup et al. 2001]. The Monpas kept themselves uninfluenced by the 2000 year old mainstream culture of Bhutan. The Monpas inhabit Mangdue and Wangdue valleys in central Bhutan and are often considered the first inhabitants of Bhutan. The term *Monpa* once meant little more than southern or western mountain dwelling of non-Indian non-Tibetan barbarians (Aris, Michael 1983). Language and some of the social institutions peculiar to them and their dependence on forest for livelihoods served to link them to the forest dwellers of Kumaun and Nepal, Nagas, Kukis and Mismis of North Eastern Himalaya [Pema Wangdi 2002].

Today, the Monpas occupy Wangling, Jangbi and Phumzur villages under Langthil geog in Trongsa Dzongkhag, and Rukha village (locally known as *Oalay* and hence *Oalaps*) in Adha geog in Wangdi Dzongkhag. The former villages of Wangling, Jangbi and Phumzur have a population of about 261 with 40 households and the Rukha village has a population of about 108 with 12 households. The two Monpa community groups are not in direct contact with each other. Other pockets of Monpa communities within Bhutan include: Reti, about 20 km. north of Nabjikorphu; Chungseng, about 10 km. from Surey; and Berti in Zhemgang, which is 15 km. from Tingtibi.

The whole of Berti village, which was once an absolute Monpa community, has evolved linguistically and culturally into *Kheng* community due to continued cross-marriages with the neighbouring *Khengpas*. Only old people can speak a few *Monkha* terms. Likewise, in Rukha, *Olekha* (original dialect) has become linguistically assimilated to Dzongkha for the same reason. Although *Olekha* and *Monkha* are similar in their grammatical structures, they differ vastly in their vocabularies and tones of speech. *Monkha* is identified as one of the three endangered languages of Bhutan, other two being *Lhokpu* and *Gongdhukha* [Pema Wangdi 2002].

In Reti, there is a high degree of language retention amongst the old people, but youngsters are getting used to speaking the *Mangari* dialect of the neighbouring *Lhotshampa* community. A few cases of cross-marriage have taken place between the two communities. There are only about seven households in Reti, however, the total population is over 55 persons which is due to the practice of joint-family system. It was narrated by the *Olaps* (Monpas of Wangdi dzongkhag) that they had to travel to Gaylegphug, halting a night on the way, to buy salt and other essential food items which are not locally available. It is believed that three Ole brothers had fled away from Wangdi Rukha to Reti because of difficult labour that they had to provide in carrying tea from Dewangiri during the time. This is evident from the fact that there is high level of similarity between the *Monkha* spoken in Reti and the *Olekha* spoken in Rukha. This is further substantiated by the fact that Aum Chodrom who lives in Rukha and Tandi who is in Reti are first cousins but they have seen each other only once in their entire lifetime because it takes a week to walk from Rukha to Reti [Pema Wangdi 2002].

The following excerpt is taken from Karma Ura's article, "The Origin of the Monpas":

Mythically, it is said that there were three lineages of Mon race namely, "Dung-za", "Tak-za" and "Sok-za", since the time of first millennium (Kel-pa Nga-dar) they lived on earth. However, at the end of that immemorial period there dawned nine brothers of sun with an intense heat that anything could be burned to ashes. This was followed by a heavy downpour of rain, the raindrops in the size of yoke. The drought and flood caused heavy environmental destruction. After these calamities only one each descendent of "Tak-za" and "Dung-za" mons survived. Why and how they survived from the grave disaster? It is quite interesting indeed. This was preordained by the Gods of Monpas (Mon-lha) to keep some lineages of Monpas. Perhaps, it must have been the game of the survival of fittest.

During the last calamity, amongst the plants nothing remained except an oak tree (Sisi), a peach tree (Kham), an Amla plant, an Artemesia plant (Kenpa) and a "Kir-ser-ma" plant. The flowers and leaves of the last plant open as sun rises and closes as the sun sets. This phenomenon is even today used to indicate the time by the people of Mons when the weather is gloomy and the sun is not visible.

When on the other hand as stated above, amongst the human race only a descendent each of "Tak-Za" and "Dung-Za" survived. How they survived was in fact apprehensible. The "Dung-za" mon had been safely hiding in the hollow stump of an oak tree closed by a piece of a flat stone from top. At the same time, the "Tak-za" mon was hiding on a trunk of a peach tree. As the latter's hideout was not very safe, he deceived the former to take his place forcibly. "Tak-za" mon was then the well-protected and very safe. "Dung-za" mon was though reluctant his counterpart did not pay any heed to whatsoever he said. As he could not resist the scorching heat and heavy torrent he prayed to god for help and flew away to heaven.

After seven days mon-takza pierced a big needle through the bark of the tree in which he was hiding and made a small hole to peep through. To his great delight he found that the sun and rain had played their parts

and the landscape was rendered invisible firstly heated up by the sun then washed away by the violent rainwater. The sky was so clear then.

Thereafter, the only descendant of "Mon-gued" left on earth was "Tak-za". He had nothing to eat then, one fine day as he was desperately wandering around for food, he spotted a bird (known as Trimola) on the "Kir-ser-ma" plant. He made a bow and arrow out of Artemesia plant (Khen-pa-shing) and shot down the harmless creature. As he dissected its body he found out three grains of "Rey Zang-kala" (a type of cereal). On a trial basis he had sown this grain firstly on a plot size of an area that could be occupied by a sleeping pheasant. Next time he planted on an area that could be occupied by a sleeping deer. The successive year he had sown on an area that could be occupied by a sleeping reindeer. Gradually, he cleared the forest areas to make more space for cultivation. Those days he lived on nothing other than flesh and blood of wild animals for food.

One day on his return from hunting he found that in the vicinity of his field a small plot of land was being burned for use. Again the next day he went hunting in the same direction and during his absence some more area had been burned and a portion was even dug for sowing seeds. He thought it is a mystery to be solved. So he purposely planned to go again the next day and see for himself who does all this. He hid at one end of the field and watched vigilantly when he saw many ethereal ladies (fairies) with wings alighting from the sky on his plot. Some started burning the forest while others were digging the soil. He chased them all to heaven but one was left behind, an elderly one with her wings struck on a bough of a tree. He took her to his home and married her. Her wings were amputated and hidden somewhere. Soon they had a daughter and a son. One day the father had gone somewhere in search of food while the mother was busy weaving (ayuerey). The two children were so hungry and grumbled at their mother for food. Mother felt so disturbed and irritated that she took her weaving stick and hit them. The two kids were hurt so hard that they went crying astray. On their way, they reached to a place where their father had hidden their mother's wings but they were unaware of this.

Suddenly, they spotted the wings and picked them up, but out of astonishment they ran to their mother to show what they had found.

Mother knew that they were her own body-parts and so she decided to fix her wings. Thereafter, she flew away to heaven, her native place. When the father came back from his work and inquired his children about their mother, they told the truth about her disappearance. Accepting the fact, the father decided to go in search of the mother.

He told his children "If I win I will get her along. But if I lose I will make a cry "A-tsace" (utter painful cry) and come back". Having consoled them he further instructed them to look after the valley where he had planted a special grain. Finally he told them "Bury me if I happen to come back with the second condition". Thus he left for a distant destiny.

One day a cry of 'A-tsace' was heard and the children saw their father's body descending to earth with knife wounds all over his body. The wounds were bleeding only to spell the destiny of their father's death. The little children were so adamant that they too flew to heaven to demand compensation for their father's life. Only compensation granted from heaven was a hunting dog and a rotary mill. So they went back with the compensation. Thus the use of the rotary to grind flour has been originated from them, so even today this mechanism is available in Bhutan.

The two children were then abandoned and deserted, there was nobody to care for them. They took their hunting dog and went wandering southward. There they met three relatives of similar race and together with them they returned home (considered to be the area above Gelephu, Sarpang and Deoseri). On their way back, they halted at "Namsinphug" a cave nearby Gelephu hot spring. There they experienced mysterious darkness for complete 9 days. On the last day, a bird was heard singing "Junchi..... Junchill". They understood the words so clearly that it is a message informing them to pray to "Juenlha" (A mon-god). So in darkness they first built a fire by rubbing two pieces of "Namphel" plant and with the help of bamboo sticks. As they prayed to "Juen Lha"

suddenly morning dawned upon them. They then again continued their journey home wards.

At "mon-guel" the three relatives who came from south settled there, while the brother and sister had left for heaven along with their hunting dog. It is therefore, believed that the Monpas are the descendants of God's family. However, since the departure of these two children of "Tak-za mon" to heaven not a single godly descendent was left on earth. The only race of Mon left on earth then was the Mons of the "Dung-za". Amongst them the reverent Kudrak Ponpo Maara Pel was the most prosperous and capable one. When Guru Rimpoche first came to Bhutan he had halted a night at Ponpo's place. Even today we can find the holy impressions and many impressive sacred places of the great Guru at Kudrak and Phumsur.

On his holiness' mission to Bumtha, at Phumsur, Guru met many Monpas on the way. Rimpoche had asked them "Where are you all going?" They replied, "We are going to hunt for bees". Rimpoche was so touched, out of compassion for the poor bees, he told them "please don't kill them, in turn you all can take this". Guru offered them a washing vase reiterating them not to repeat such an evil act. Guru also assured them that this vase should be well cared as it will be very useful to them. Not long after the great teacher departed, they exchanged the sacred vase with "local banchang" to a rich man the reverent Kudrak Ponpo. They thus breached the sacred vows of Guru and once again they followed usual practice of bee hunting. Breaching such a sacred vow meant being unloyal and the wrong-doer become unfortunate.

On the other hand for Kudrak Ponpo it was a boon and a fortunate having procured the holy vase. Since the day he owned this vase his fortune grew more splendidly that this land and even the nearby agricultural land began to give very high yield.

After the first harvest they had excessive grains that they need to sow seeds for the next round. The crops grew naturally. His granary was over filled and he didn't know where to put the surplus product.

When Guru came on his second visit he requested him to give a solution to his problem. Guru blindly refused and instead told him to go throw alms. He tried to do, but yield had increased doubly. Again for the second time, he prayed to Guru for his help to bring down yield of his land. This time Guru was different and told him "If you really want to reduce, sit near me on my mat and keep your cup on the table near mine". He did so as ordered. The consequences then dawned on his fortune.

Thereafter, day-by-day his harvest reduced from meager to nothingness. Finally, as a usual practice for the reverent people, when Ponpo's soul was wandering in "Nelkhiam"(samsara) some of the Monpas, before he came to his life again, burned his body. Hence, even today, the Monpas how hard they work, they are always poor and destitute. This is due to the fact that their ancestors breached the vows of Guru Rimpoche and for not being loyal to his sacred principles. They are always unfortunate.

Oral History of the Monpas

Sampa Taula is an elderly Monpa who lives in Jangbi village. He is a clergyman and the most learned person in the village. Although he could not avail modern education, he went through monastic schooling and can read and write dzongkha. He narrated the oral history of the Monpas in June 1999 to the author.

"It was when the earth was uninhabited by anyone except some of the ancestors of the Monpas, the nine Monpas came from Dewangiri and reached Surey in Gaylephu. It was dawn, and darkness gradually engulfed them. The nine ancestral Monpas found a cave to rest for the night. However, sun did not shine the next morning and they remained in darkness for a period of nine days. Finally, an eagle (chichikin) sounded to them 'Junchil...Junchil'. The Mons realized that they were told to pray to 'Juenlha'. So the Mons started to pray.

They cut a small bamboo (hou), filled it with water and covered it with banana leaves. They also put some rice on another banana leaf, covered it and hung both bamboo and rice together on a tree. They continued to

Origin and History of the Monpas

pray. After the prayer was over, to their amazement, the sun began to shine again. Following this, six out of nine Mons came to Trongsa. The remaining three Mons returned back to their original place.

These six Mons walked for days and arrived near a lake in the Black Mountains. This lake can be seen from Phumzur even today. It was here that the six Mons discussed and declared the three Mon castes – Takza, Dungza, and Shokza. The six Mons separated and selected their own areas to reside. Takzas lived near Black Mountains, Shokzas lived in Ziripa, and Dungzas lived in Jisidunglapen. Dungza lineage has become extinct now.



Sampa Taula, a learned clergyman from Jangbi

The Monpas of Jangbi, Wangling and Phumzur

The Monpas reside in Trongsa, Wangdi and Zhemgang Dzongkhags. This study is focused on the Monpas of Jangbi, Wangling and Phumzur under Trongsa dzongkhag. The three Monpa villages fall within the buffer zone of Black Mountain National Park. The highest peak of the Black Mountains, Mount *Jodushingphu*, is believed as a sacred mountain by the Monpas. The Black Mountain, locally known as *Jowo Dhurshing* is sacred to *Lama Mani Nakpo* or *Mahakala*. There are 40 households of Monpa families today in these three villages of Trongsa. The Monpas are a very close-knit community and inter-marriage between brothers' and sisters' children is a common practice in these three villages. They speak *Monkha*, a distinct dialect.

There are three prominent castes in Wangling, Jangbi and Phumzur. They are: *Shokza*, *Takza*, and *Dhungza*. However, they have a single place of worship, *Jhodushingphu*, for the whole Monpa community, which they believe to be the central portion of the Earth and that it provides them with everything in their lives. The Monpas of Wangling, Jangbi and Phumzur claim that they are direct descendants of the god *Lhayi Juepa*. The caste system, they believe, has resulted out of this. Marriages are determined by this caste system. They also believe that they are poor because their ancestors have broken the vow to Guru Rimpoche who commanded them not to kill animals [Dendup et al. 2001].

It is believed that the ancestors of the present generation Monpas lived by hunting wild animals, which were found in abundance in and around their home. Although this practice has changed, the Monpas' livelihood still remains very much dependent on forest resources. Almost all of their daily needs

are met from the neighbouring forests. This section of the Bhutanese population are least educated and are among the poorest. Whilst poor in terms of economy, the Monpas have a rich reservoir of natural resources as well as a wealth of traditional knowledge which has been developed and passed on from generation to generation. Though the RGOB is bringing them into the national mainstream, the Monpas' survival as an indigenous community would be meaningful and possible only if we allow it to grow with its own intrinsic worth.

Monkha: One of the Three Rare Gems of Bhutan

The Black Mountains are a southern spur of the Himalayas, which run from north to south over a distance of some 200 km., separating western and central Bhutan. The range was so named by the British because of its dense forest cover and its formidable and precipitous dark escarpments. The Black Mountains are home to many species which are endangered or extinct elsewhere.

In the Black Mountains resides a small aboriginal Monpa group speaking an archaic Bodish language locally known as *Monkha*. It appears that the *Monkha* of Black Mountains is an East Bodish language because its core lexicon is largely East Bodish. This would make the major languages spoken in central and northeastern Bhutan and Tawang in Arunachal Pradesh the closest linguistic relatives of the *Monkha* of Black Mountain. This is the only East Bodish language to preserve the Tibeto-Burman biactantial verbal agreement system, and in view of the geography and history, the *Monkha* of Black Mountain is the original of the East Bodish languages, being the one which has undergone the least influence from Central and South Bodish forms of speech, such as Tibetan and

Dzongkha. There are three dialects of the *Monkha* of Black Mountains - Ole dialect spoken in Reti and Rukha, and Southern dialect spoken in Chungseng and Berti, and a Northern dialect spoken in the villages of Wangling, Jangbi and Phumzur which has retained the highest degree of *Monkha* [Driem 2004].

Ugyen Guru Rimpoche's Visit to Mangdue and Founding of Buddhism in Bhutan

Bhutan emerged from *Bonism* to Buddhism after the 6th century A.D. following the visit of Guru Rimpoche and later by several Tibetan saints propagating Buddhism throughout the country.

The Guru Rimpoche is said to have visited Bumthang during the 8th century. On the way, he passed through Mangdue as he found out that the place was infested with malicious spirits. When he made attempts to subdue the spirits, they retaliated by transforming themselves into a huge boulder. The Guru is then said to have probed the boulder as effortlessly as though one were probing mud, with his *Phurba* and subdued the spirits. The present day Phumzur is the place where this incident took place. There are cliffs and rocks near Phumzur where Guru spread the teachings of Buddha among the people. The place is now known as *Ugyen Drak*. This place is said to have Guru's bodyprint on the rocks, including his hat which was used only while giving religious sermons.

During the same period, there were several kings who used to wage ceaseless war among themselves. Guru, realizing that the battle between the two kings Sindhu Raja and Naoche was taking its toll on too many lives, decided to mediate between the two kings. The place where the two kings decided to come

to a truce was in Mangdue. There is a huge boulder in the Knabe Lhakhang bearing handprints of the two kings, a monument of the ceasefire. It was around this time that Guru also blessed the village of Mangdue and it was predestined that Mangdue would be the place where Mahayana Buddhism would flourish, and that it would be the ruling centre of Bhutan and also that *Lho Mon Kha Zhi* would be unified under the *Palden Drukpa*. In recognition of the central importance of the region, hereditary monarchs can only make their way to the Golden Throne after they have been appointed the Trongsa Penlop (Lhendup 2004).



Trongsa dzong: The seat of Trongsa Penlop

3

**SOCIO-ECONOMIC CONTEXT AND CULTURAL
DIVERSITY**



SOCIO-ECONOMIC CONTEXT AND CULTURAL DIVERSITY

An Overview of the Monpas

The Monpas of Wangling, Jangbi and Phumzur villages are a homogenous and close-knit community that live and work in groups. Joint family systems are prevalent in these villages. It was noted during interactions with the villagers that most of the households are related to each other. It is believed that the Monpas of these three villages are members of a huge family whose members got married, moved out of the house and settled in the three villages. For hundreds of years, they have kept themselves isolated from the mainstream Bhutanese society and have been able to preserve their local culture and tradition. However, documentary evidence does not exist to corroborate this fact.

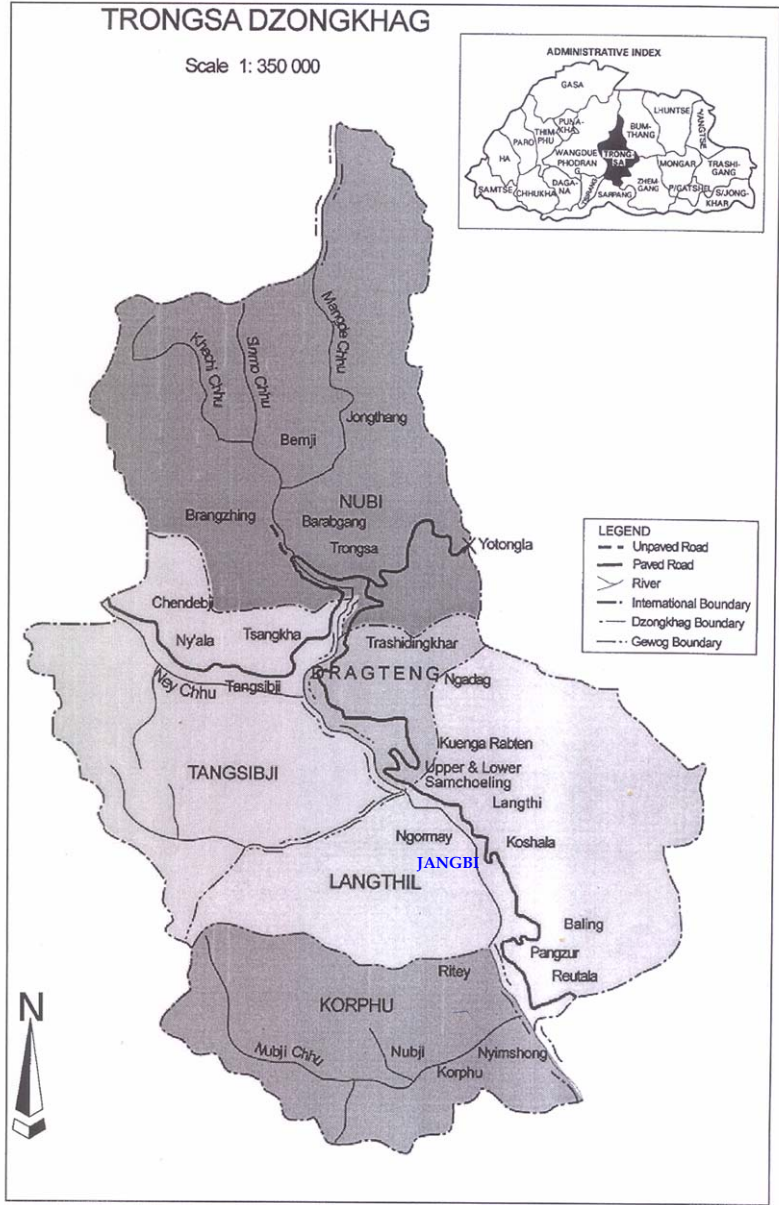
The term *Monpa* as explained by the Monpas of Wangling, Jangbi and Phumzur means “people of darkness”. This explains the isolation, low self-esteem and low socio-economic condition of this indigenous group of people as they see themselves. In general term, *Mons*, are referred to people without a religion and refers to the period before the advent of Buddhism in Bhutan. Buddhism was introduced in Bhutan by Guru Rimpoche in the eighth century.

The Monpas were originally hunters and food-gatherers. The Monpa culture, tradition and practices are all intrinsically linked to the forests around them. The Monpas began to cultivate crops by gradually clearing some parts of the forests through the primitive slash and burn cultivation, known as *tseri*. Subsequently, they began to domesticate cattle and

maintained large areas of land for pasture locally known as *tsamdo*. After several decades, they began to adopt permanent cultivation, mainly dryland farming (*kamzhing*). In 1983, the RGOB introduced wetland cultivation (*chuzhing*) in these three villages. The Monpa people were trained to irrigate their land and cultivate paddy.

Cane and bamboo are the two most versatile natural resources available to the Monpas. The Monpas are traditionally weavers and they weave a variety of items for household use. Since a few years ago, they have also started to produce handicraft items for sale. Most Monpas have spent their entire lifetime in their village and forests around them. It was found that some of the Monpas have begun travelling outside their villages including their district headquarters, Trongsa, only in the recent times.

Monpa people by nature are very simple and carefree. They do not have the habit of saving and follow barter system within and outside their villages. Most of the households (92 percent) reported food shortage in the first three months of the Bhutanese calendar (February-April) before the winter crop harvest. In times of famine or food shortage, the Monpas go to Trongsa Dzongkhag Administration and seek *kidu* which they have been receiving until now as they are the poorest community in the district. Recently, after the initiation of a UNDP/GEF Small Grants project in 1999, the community has formed a cooperative and has also established a community trust fund. The Monpa community uses the fund cautiously during food shortage or to perform death rituals.



Geographical location

Trongsa dzongkhag comprises of five *geogs*- Bjakteng, Korphu, Langthil, Nubi and Tangsibji. The three Monpa villages Wangling, Jangbi and Phumzur fall within Langthil *geog*, which covers an area of 50,986 ha. One can reach Wangling and Jangbi, which are the nearest villages located on the bank of Mangduechhu following two hours walk from Tongtongphe. Phumzur is four hours walk from Tongtongphe. For the three Monpa villages, the nearest road head is Tongtongphe 56 km. from Trongsa, the dzongkhag headquarter. The three Monpa villages lie at 27°10'N latitude and 90°34'E longitude [MOA 1995]. The terrain is highly rugged. Wangling and Phumzur are located at an altitude of 1500 meters above sea level, while Jangbi is located at 1360 meters above sea level.



Phumzur village

Climate

Langthil geog falls within the subtropical agro-ecological zone of Bhutan with the temperature and rainfall pattern as given below.

Table 3.1: Maximum and minimum temperature and rainfall in Langthil

Parameter	MONTHS											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Temp.												
Max (°C)	-	16.0	18.7	20.0	27.3	-	-	29.3	30.7	29.4	29.2	-
Min (°C)	-	8.7	9.4	11.0	17.9	-	-	22.1	21.6	22.7	7.3	-
Rainfall (mm)	-	22.6	1.5	27.7	114.3	-	-	203.0	80.3	-	-	-

Source: CSO, 2001

The climatic year consists of three distinct seasons: summer season (April to June); rainy season (July to October); and winter season (November to March). About 50 percent of the annual rainfall occurs over a short period between June and August, featuring a strong monsoon.

Vegetation types

The three Monpa villages are located in the sub-tropical valley on the western side of Mangduechhu, and are within the range of 1000 to 1500 meters above sea level. Chirpine (*Pinus roxburghii*) forest dominates the area with scattered broadleaved forests confined to ravines and depressions. The most commonly found species in the Chirpine forest include *Pinus roxburghii*, *Quercus griffithii*, *Quercus lanata*, *Albizia spp.*, *Desmodium spp.*, *Schima wallichii*, *Rhus javanica* etc. Broadleaved forest at the upper region of Jangbi and Phumzur had *Lithocarpus spp.*, *Cinnamomum spp.*, *Persea spp.*, and *Ficus spp.* The vegetation types include mixed broadleaf forest up to

about 1200 meters altitude, mixed conifer forest above 1200 meters, and bamboo and cane forest at an altitude of about 1500 meters.



Mixed broadleaf forest

Wildlife

The most commonly found fauna around the forests of the three Monpa villages are: golden langoor, himalayan bear, leopard, sambar, barking deer, black panther, wild boar, ghoral, musk deer, bulbul, hornbill, pheasant, hill patrige, monal, cobra and other snakes. During the survey, the Monpas stated that the wildlife population has increased in the recent past because of hunting restrictions imposed by the RGOB following the Forest Act of 1969. Crop damage and depredation of livestock by wild animals was reported to be very common in these villages. During the study, many

stories of human and wildlife conflicts were narrated by the villagers.

Demographic structure

There are a total of 40 households in the three Monpa villages. Wangling and Phumzur have 16 and 15 households respectively, whereas Jangbi has only 9 households. The total population in the three villages was 261, with the maximum of 113 in Phumzur, 98 in Wangling, and 50 in Jangbi. Female per 1000 male ratio in Wangling and Phumzur was 1130 and 1054 and in Jangbi it was 667 (Table 3.2). Table 3.3 indicates the distribution of Monpa population by age. The distribution of the population is broad-based which is typical of any growing population. Those less than 14 years population constituted 31 percent, 15 to 66 years constituted 64 percent, and greater than 66 years a mere 4 percent. It is noteworthy to find that the population less than 14 years and 15 to 65 years was better than the national average of 42.1 percent and 53.6 percent respectively [CSO 2001]. The elderly population was found to be low indicating lower life expectancy.

Table 3.2: Village-wise distribution of Monpa population in Trongsa

Villages	Number of households	Population			Female per 1000 male
		Male	Female	Total	
Wangling	16	46	52	98	1130
Jangbi	9	30	20	50	667
Phumzur	15	55	58	113	1054
Total	40	131	130	261	992

Table 3.3: Distribution of Monpa population by age

Total	Infant Less than 1 yr	Children 1 to 14 yrs	Adults 15 to 45 yrs	Adults 46 to 66 yrs	Elderly 67 and above
261	8 (3)	74 (28)	126 (48)	42 (16)	11 (4)

Value in parenthesis indicate percentage



Young and old: The Monpas look forward to a better future



Monpa children: The future generation

Household size

Family size is directly related to the stage of socio-economic transformation of a community. Joint and large families are found mostly in traditional society. More than 50 percent of the households had 5 to 8 members, followed by 25 percent with more than 9 members. The average household size in the three Monpa villages was 6.5 members per household.

Migration

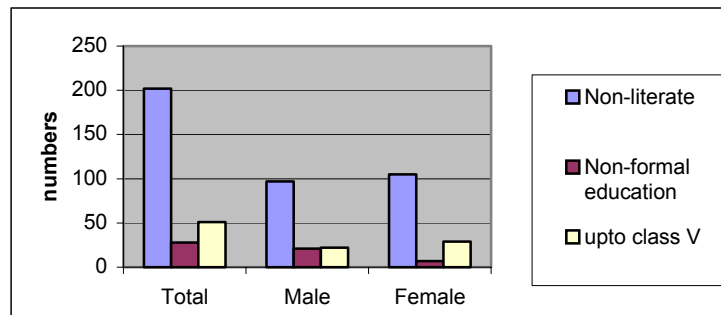
Migration is increasing in the Monpa community. In all, over a period of ten years, 24 people have migrated from the three Monpa villages to other parts of the country, mainly for employment, monastic education, and marriage. It is of

interest to note that although Jangbi village has the smallest number of households (9), but has an equal number of out migrants as in the other two villages.

Literacy

The literacy level of the Monpas is very low, one of the lowest in Trongsa district and the country as a whole. In total there were only 17 percent literates, who have studied up to Class V, and 9 percent had undergone non-formal education, primarily from monastic school. The remaining 74 percent were non-literates. All of the literates fall under the category of six to nineteen years age group, basically those who gained access to formal education after the Jangbi community school was established in 1996. Figure 3.1 shows that a higher number of men than women have gained basic literacy through non-formal education. However, there is increasing number of children, both female and male, attending school.

Figure 3.1: Education by sex



A community school established in Jangbi in 1996, marked the beginning of formal education for the Monpas. The school now has been upgraded to a primary school (up to Class V). There are three teachers including the head teacher, and 36

students with 18 boys and 18 girls. The school also conducts non-formal education classes in the evenings for adults.



Jangbi community school established in 1996



Students at their art and craft class

Language

The local dialect of the Monpas is known as *Monkha*. *Monkha* does not resemble any other language of the country though it has roots in the Tibeto-Burman family, like other languages of Bhutan. Today, due to the cultural influence posed by the outside regions, *Monkha* is facing the threat of extinction. In Oalay, another locality where a few Monpas reside, only one woman speaks the language fluently. In Trongsa, all the Monpas speak *Monkha*. Besides *Monkha*, the Monpas of Wangling, Jangbi and Phumzur also speak *Dzongkha* the national language. Some of them also speak *Khengkha* and *Lhotsamkha*.

Dress

The traditional dress of the Monpas is called *pagay* and it used to be worn by all the Monpas up until a few decades ago. *Pagay* was woven with fibers from the gigantic nettle plant (*Giardina diversifolia*) locally known as *kulima*. The nettle plant grows in abundance in *tseri* land or wasteland. Fibers obtained from the inner bark of the giant nettle plant were used extensively for making *pagay*, ropes, bags, fishing nets, head bands etc. *Pagay* used to be worn like *kira* without *tego* by women, keeping the arms naked. *Pagay* when worn, stretches down to the knees for men and up to the toes for women. The back of *pagay* is folded by *kappa* over the waist and is tied with a *kera*. The dress was rough but once woven, lasted for several years.

The Monpas no longer weave *pagay* as it is far easier to buy dresses from Langthil or Trongsa. As of today, only two women in Phumzur, one woman each in Jangbi and Wangling know how to weave *pagay* from nettle plant fiber. However,

almost all the elderly people (40 years and above) had worn *pagay* when they were young. *Pagay* is no longer worn by the Monpas and is replaced by the national dress, *gho* and *kira*, as worn by all other communities in Bhutan. This changing trend in dress and tradition indicates the socio-cultural transformation of the Monpas. It is very interesting to note that the same is the case for another indigenous community living in the mountains of southern Bhutan - the *Doyas*, also know as *Lhops*. They used to wear their dress similar to the Monpas also woven from nettle plant fiber. This can be viewed as mainstreaming of this indigenous community, but at the same time one can foresee the risk of a permanent and complete loss of a treasure of knowledge, culture and tradition.



Pagay a traditional attire worn by Monpas in the past

Food habits

The food habits of Monpa people are very simple and their diet is mostly dependent on locally available food items. They occasionally visit the nearest road-head market at Langthil and buy essential commodities like salt, rice, or oil. They either buy these by cash or barter them with handicraft items, non-timber forest products, or dairy products.

Their staple food is maize and rice (red and white rice). The most common vegetables eaten by the Monpas are pumpkin, radish, brassica and egg-plant. Local wine, (*bangchang*) made of wheat, buckwheat, maize or some wild plants is consumed most of the time of the day. Even young children drink *bangchang* with their food. *Bangchang* is brewed by women in their homes.

(My Daily Life, narrated by Ap Nakari from Jangbi village)

"I get up at 5 am, prepare my breakfast (bangchang) and drink it. I go to my nearby field and plough. At 8 a.m., I go home, eat red rice and vegetables, mostly pumpkin, and drink bangchang. I go again to the field and plough. At 10 a.m. I leave the oxen for grazing and I come home. Subsequently, I go to forest for firewood collection into the nearby forest. Within half an hour, I return home with a back load of firewood. Fetching firewood is not a problem for my family as my house is near forest. At about 3 p.m., I drink bangchang, take rest for sometime, and weave basket collect cattle, tie them. I have 6 bulls and 15 cows. We used to have 80 cattle heads before, but now there is no one to take care of cattle and there is less fodder. My wife cooks food, I eat food together with family (my wife, mother-in-law, three sons, one daughter, and a cowboy). One of my son lives with my father-in-law and his second wife (my mother-in-law's younger sister). I go to sleep at about 8 p.m."

The Monpas use more than 80 different species of edible plants from forest for consumption. The most commonly used forest foods comprise of wild tubers, mushroom, fern, fruits, green leafy vegetables, cane and bamboo shoots. Food from wild plants form a major part of the Monpas' diet and is eaten either fresh, dried or cooked. The food from wild plants is also preserved by drying, baking or brewing it and consumed later when required. The elder members of the family teach the younger ones how and when to harvest, and how to prepare and store wild plants for food. Children also learn while they help their elder family members to perform these tasks.

Religious practices

Bonism was the main religion practised by the Monpas before the advent of Buddhist doctrines. But they still remain faithful adherents of the former religion. The officiants at ceremonies involving the supernatural are the *Bonpo* and *Bonmo*, the male and female *shaman*. The Monpas have also retained native animist religious practices. Animal sacrifice was practised until recently during the *Bon* rituals, though this practice is today substituted by the offering of boiled eggs. The Monpas of these three villages do have the stories of Guru Rimpoche who, they claim, visited their villages on his way to Bumthang. But their faith in *Bonism* remained. Altars are almost absent in the Monpa households. However, this trend is changing. Of late, most of the Monpas have begun to follow Buddhism and some of them have even joined the monastic school. Recently, they have constructed a *lhakhang* each in their villages.

According to *Bonism*, natural forces like forests, mountains, lakes, rivers, wind, sky etc. are the domains of spirits and disregarding these natural forces will lead to diseases and natural catastrophes. During the mapping of forest resources

by the Monpas, many sacred groves were identified in Wangling, Jangbi and Phumzur (Annexure). It is a taboo to cut trees from the forest considered sacred, as these are considered the domains of local deities locally termed as *duth*. Similarly, big rocks and trees identified by their ancestors are also considered the domains of local deities (*sadag* and *nye*) and are kept protected. It is believed that if sacred groves are disturbed, the local people will suffer illness and misfortune. The Monpas perform rituals twice a year, once in the summer and once in winter, welcoming rich harvest and to please their local deities by offering their first crops and *bangchang*. Thirty-two cups made of leaves filled with new crops are offered to the deities. This ritual is performed by *pawo*, male *shaman*. This symbolizes the welcoming of the forthcoming harvest and people from all the households celebrate together by eating and drinking.

The Monpas also perform annual rituals in their *lhakhang* by offering prayers to Guru Rimpoche. Religious offerings comprise of food, two cups of water, incense, white flowery seeds from the fruit of *Oroxylum indica*, butter lamp, one cup of rice, one cup of *ara*, and one cup of *suja*. After one hour of offering prayers, they offer prayers with *ara*, followed by offering of rice, fruits, puffed rice, and other available edibles. These offerings are then shared among the devotees and eaten. Prayers for a further period of half an hour are then offered to thank as well as bid farewell to the gods and deities.

Sites of cultural significance

The Monpas have a number of cultural and religious sites in their villages. Some of these sites are as follows:

- *Phuzur* (Phurba Zur): This site is on the way to Phumzur village. It is believed by the Monpas as well as other people in the country that Guru Rimpoche had placed his *purba* while traveling through this area.
- *Ugen Drak* (Guru's cave): This is another place of great importance both to the Monpas and others. It is believed that Guru Rimpoche rested one night in the cave on his way to Nabji.
- *Usha*: This site is a rocky cliff with an impression of Guru Rimpoche's head on it. It is believed to be very sacred by the local community. It is located below the Phumzur lhakhang.
- *Dupchu* (Dup chhu) meaning holy water. This place is located above the Phumzur Lhakhang. There is a big rock in the middle of which it has a hole. Water comes out of this hole and the local people believe that it was created by Guru Rimpoche.
- *Kubra* (*Kudra*): It is believed that Guru Rimpoche rested here for one night. There are some footprints on solid rock which are believed to be footprints of the angels who accompanied Guru Rimpoche.



Inside view of the Phumzur Lhakhang

Phumzur Lhakhang is highly revered by the Monpas as Guru Rimpoche is believed to have passed by this site during his visit to Bhutan in the eighth century. This Lhakhang received statues and religious items from Bumthang Kurje Lhakhang in 1999. It is believed that Guru Rimpoche visited Kurje, Phumzur, Kubra and Nabji during the eighth century. The Monpas perform rituals for all these *nye* in Phumzur Lhakhang on the 10th and 15th day of the first, second, sixth, eighth and tenth Bhutanese months.

Traditional healing

Traditional healing practices both for humans and livestock are very popular among the Monpa community. The Monpas used more than 30 species of medicinal plants for curing human and livestock diseases. In the three villages, six *pamo* and three *pawo* were found to be practising their traditional healing. It was also noticed that *pamo* do not consume pork or eggs, since it is believed that eating pork and eggs diminish their power of healing. Most Monpas still prefer traditional practices to cure sickness. Superstitious and orthodox in nature, the Monpas believe that the cause of their sickness is not exactly due to their poor health, sanitation and hygiene but are due to evil spirits and bad *karma*. Recently, however more and more Monpas have begun to believe and use modern medical amenities. A Basic Health Unit was established in February 2002 in Jangbi that also extends its services to the other two Monpa villages.

The Monpas now are no longer hunters and food gatherers. They are witnessing tremendous economic and social changes in their own community.



Sick grandmother and her family



Pamo performing a ritual to cure the sick grandmother

Marriage system

Monpa people have equal preference for both female and male children, though some would prefer daughters since

they would remain at their parent's home after marriage. By contrast, boys go to their in-laws' house. Parents do not play a major role in the marital decisions of their children.

Normally, when an eligible bachelor finds a bride, and they agree to marry, he begins living in the bride's home. He continues to stay there as a family member and works for the house. However, this trend of the groom always living in the bride's home is changing. It is increasingly observed that the relocation of a spouse is now primarily dependent on the shortage of working members in a house, wealth of the concerned families and their mutual agreement. After a period of three years, the bride's parents send a man to the groom's house with the following message "*Your son is in my house, his eyes are not blind, his legs and hands are not broken. Do you need him back?*" If the groom's parents do not want him back, the man continues to live in the bride's home.

Traditionally, if the groom's parents want him back, they have to go to bride's house with *chanjey* (meat of one whole cattle) and two other men, and apologise. These days, local wine has replaced cattle meat. After the acceptance of apologies, the groom's parents take back the groom and *naem* (daughter-in-law) to their house. All the relatives and neighbours are invited when a *genja* is signed by the groom's parents which states that the daughter-in-law will not be mistreated, that all property including cattle, house, land and any other assets in the house is transferred to her name, she being the new owner of all these assets. This also ensures that the man does not divorce his wife. If the man marries again, he moves out of the house leaving all his property to his previous wife. The daughter-in-law can then marry again and bring her new husband to the house. These days, land and property are given more often to one favourite son, daughter-in-law or are

divided among all daughters-in-laws. The Monpas are a homogenous and cohesive community and intermarriage between first cousins is customary. Intermarriage with outsiders is very rare.

Key livelihood occupations

The Monpa people of Wangling, Jangbi and Phumzur are intimately associated with the forests. Their needs are minimal and most of these are met from the nearby forests. They depend on wild tubers and fruits whenever their crops fail. They weave cane and bamboo handicraft items for cash income. Some households depend on resin, tapped from Chirpine trees, which they sell to earn cash. The small number of livestock they have are also entirely dependent on the forest for grazing.

From times immemorial, the Monpas have been engaged in weaving bamboo and cane products. The finished products were bartered with grains in the surrounding villages. They also had the tradition of paying annual tax (in the form of handicraft) to the Princess of Indocholing (who owns most of the *tsamdo* in the Monpa villages). In return, they are allowed to graze their cattle in her *tsamdo* and also would receive food grains in times of crop failure. With time, the Monpa began practising shifting cultivation. However, this was not absolutely easy due to the close proximity of forests around the *tseri* land and destruction of the crops by wild animals and birds. In the recent past, the RGOB policy began to discourage the practice of *tseri*.

The Monpas are engaged in this cash generating activity especially during their free time. Handicraft items are sold generally in the nearest market, Langthil and Trongsa, and

occasionally in Thimphu. In 2000, the Monpas formed a cooperative and, through the assistance of the RGOB and UNDP/GEF Small Grants Programme have received training and exposure in the manufacture of improved bamboo and cane handicraft items, following which their involvement in this activity is more systematized and productive. A community trust fund has been established.

More than 60 percent of the total Monpa population is involved in farming. The same percentage of people weave handicraft in their non-agriculture season and leisure time. Twenty-three percent of them tap resin from the Chirpine trees and sell it to the local dealer in Langthil. Thirteen percent of the population are dependent (below seven years), and 15 percent are school going children. Six percent of them are clergy members, one percent traditional healers, and another one percent are service holders.

The Monpas have switched over to settled agriculture very recently. Farming is at subsistence level with the majority of the Monpa population engaged in it. Recently, two men were employed by the RGOB as a messenger in Wangling and a non-formal education teacher in Jangbi Community School. Four people work as labourers and one as carpenter in Thimphu, the capital city of Bhutan.

Although more than 60 percent of the population practise agriculture, their main source of cash income is handicraft followed by resin tapping. Figure 3.2 shows that handicraft production is the highest source of cash generation with 57 percent total income. Resin tapping, though practised by a relatively small population, accounts for another 23 percent of cash generation followed by agriculture (8 percent), working

as labourer (8 percent), and sale of livestock products (4 percent).

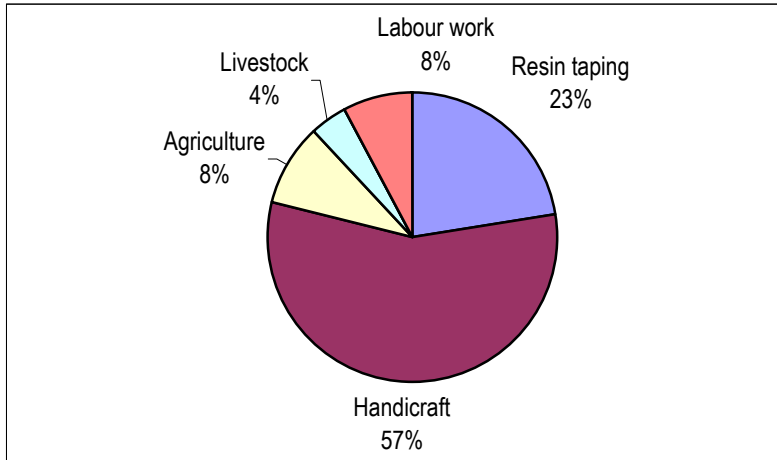


Figure 3.2: Sources of cash income of the Monpas

It was observed that most people from Phumzur weave handicraft products whereas most people from Wangling tap resin, for cash income. It was also observed that Phumzur has the highest population with 113 people but have only 21 percent of the people involved in cash generation activities. Whereas, Jangbi has the smallest population with 50 people but 36 percent of them are involved in cash income generation activities. Wangling village has 98 people and 30 percent participated in cash generation activities. This is directly associated with proximity of these villages to the road head and facility for marketing of finished products.



Cane and bamboo baskets making their way to Langthil



Cane and bamboo handicraft items: An important source of cash income



Resin tapped from Chirpine trees: collected at Langthil

Eighty-nine percent of the Monpas save less than Nu.1000 (US\$ 20) in a year, and only 11 percent of the people save Nu.1,000 to 5,000 (US\$ 20 to 100). None of the households reported annual saving of more than Nu. 5,000 (US\$ 100). Most expenditure is incurred on clothes and food and some expenditure on social ceremonies, household items and taxes (land and house).

Gender-based values and practice at the household and community level

The Monpas with their distinct culture and traditions over a long duration of Bhutanese history is of immense significance. For hundreds of years, the Monpas have remained in the remote Black Mountains with minimal interaction outside their society. Their life and livelihood in the past were simple and sparse. They are now experiencing social transformation slowly but steadily.

The Monpa community is a matriarchal society with female members inheriting land and property. However, this trend is changing slowly. Many people mentioned that these days both son and daughter demand land and property. The

daughter-in-law is very powerful in the Monpa household and so are the parents of the daughter-in-law. Unlike the other matriarchal societies in Bhutan where the daughter inherits the property, the Monpa community follow a unique property inheritance system where the daughter-in-law receives the household property. This was explained thus: the bride's parents are powerful (since the son chose to marry their daughter) and so to make the bride also powerful and please her parents, property is legally transferred to her name in the presence of the village elders. Some parents explained that this system was practised to give the daughter-in-law security as she leaves her own home and moves into her husband's house. This ensures security to the daughter-in-law and that the husband does not leave his wife. If the husband marries again, he does not get any property but moves out of the house. The daughter-in-law can then marry another man and bring her new husband to the house.

In the Bhutanese legal system, all landed property as well as the house are registered in the name of the head of the household. Any transaction of household property can legally be done only with the consent of the *sathram* holder. The property ownership pattern was found to be positive for women in the Monpa community as compared to most parts in the country except in the rural areas of western Bhutan where the property ownership pattern shows 60:40 female/male share [PCS 2001]. However, the study revealed that most household decisions are made by the male members. Male members take household decisions in most households (55 percent) followed by female members (30 percent) and joint decisions were taken in 15 percent of the households. Land was owned both by male and female members of the community with a ratio of land holding at 49:51. Land is

inherited from parents. All cultivated land is registered and it is illegal to cultivate unregistered land.

The Monpa parents give equal preference to both female and male children. It was found that in 93 percent of the households, children themselves made decisions on their marriage followed by 5 percent of the households where both parents decided the marriage of their children and in 2 percent households, family elders decided children's marriage. It was found that parents did not play a major role in the marital decisions of their children.

It is worth mentioning that there is a fine line of division of work and activities. Men are involved primarily in outdoor activities like firewood collection, fodder collection, making and selling handicraft items and other household and farm produce, representing the household in meetings and in *saptolemi*. Women were mainly involved in activities such as cooking, fetching water, tending cattle, kitchen gardening, and collecting non-timber forest products. Both men and women work in the field, take care of cattle and attend to sick children (Table 3.4). It was interesting to note that many of the tasks among male and female members overlapped, particularly manure collection and cattle related works, which are mostly done by women in other parts of the country. Also it was found that firewood is collected mostly by male members, adults (59%) and children (13%), as compared to women which was only 8 percent. This is again different from other parts of the country where, women collect firewood for household consumption.

Table 3.4: Gender-wise division of labour (percentage from sample size)

Activities	Male adult	Female adult	Both adult	Male children	Female children	Both children
Firewood collection	59	8	15	13	0	4
Kitchen garden	0	58	25	3	11	3
Cooking	0	85	4	1	8	1
Water collection	1	38	19	15	18	8
Fodder collection	45	6	10	34	1	3
Cattle related work	3	10	43	10	10	22
Ploughing	76	0	1	23	0	0
Field work	4	3	80	4	1	8
Handicraft	79	6	6	8	0	0
Manure collection	0	33	67	0	0	0
Attending children and sick	3	1	95	0	0	1
Attending meeting	70	5	5	16	3	0
Shaptolemi	52	1	3	28	16	0
Selling farm products	73	0	10	18	0	0

A PRA exercise was undertaken to analyze gender-based access to resources and decision making about its use. It can be seen from Table 3.5 that women and men seem to have equal access to and use of most resources. Women have access to and control over poultry and vegetables, men have access to and control over livestock and cash. Both women and men have access to and control over household items, religious items, crops, land and house. This practice of access and control over resources and decision making differs from the practice in many other Asian countries. At the same time, some similarities can be seen, like the control of cash and livestock with menfolk, although women spend more time

tending to cattle. It was also found that legally women own the land and property, but household decisions are taken mostly by men.

Table 3.5: Gender-based control of household resources

Resources	Control of resources		
	Male	Female	Both
Land			X
Livestock	X		
House			X
Religious items			X
Cash	X		
Poultry		X	
Vegetable		X	
Household items			X
Crops			X
Labour		X	

4

BIOLOGICAL WEALTH



BIOLOGICAL WEALTH

Traditional knowledge of plants and their uses

The Monpa community of Wangling, Jangbi and Phumzur villages in Trongsa district have extensive knowledge about plants. They were able to recognize and use over 270 species of plants. This is a significant number of plant species they recognize and use, considering the small population of 40 households. More than 80 species were recorded as being used as food, 34 species for medicinal purposes, 147 species for household needs, and 15 species for cultural and ceremonial use (Table 4.1). The majority of the plants utilized by the Monpas were trees (55%), followed by herbs (17%), shrubs (10%), climbers (10%), and saprophytes and epiphytes (8%).

Fruits and other parts derived from the wild plants formed a major source of food for the Monpas. It was found that women are mostly involved in collecting non-timber forest products and forest-based food items such as fern, mushroom, and *damburu*, for family consumption.

Table 4.1 demonstrates the rich ethno-botanical knowledge and very high dependence of the Monpa households on forest resources.

Table 4.1: Wild plants, their habit, and parts used by the Monpas

Forest products	Number of species	Plant habit	Parts used
Medicine	34	mostly herbs	root, leaf, stem, bark, flower
Fodder	28	tree	leaf
Timber	17	tree	trunk
Bamboos	20 (8 genera)	tree, shrub	stem, leaf

Biological Wealth

Forest products	Number of species	Plant habit	Parts used
Fuel wood	19	tree, shrub	trunk, branch
Wild tubers	10	climber, herb	tuber
Agricultural tools	15	tree	trunk, branch
Pole	10	tree	trunk
Mushroom	10	fungus	whole plant
Shingles	11	tree	trunk
Rope/fibre	13	tree, climber, herb	bark, whole climber
Religious ceremony	15	tree, shrub	leaf, branch, resinous sap, trunk
Tea	15	tree, shrub	leaf, flower, bark
Fruits	12	tree, shrub, climber	fruit, seed
Vegetable oil	10	tree, shrub	seed
Broom	5	tree, shrub	branch, leaf
Leafy vegetable	9	herb, epiphyte	leaf, stem whole plant
Orchids	6	epiphyte	inflorescence
Fern	6	herb	stem
Vegetable dye	4	climber, tree, shrub	stem, leaf, rhizome
Cane	4 (2 genera)	climber	stem, fruit
Resin	1	tree	resinous sap
TOTAL	274		

Table 4.2: Percentage of households harvesting forest products for consumption and sale

Forest products	Uses	% of households
Fuel wood	Cook food	100
Fodder	Cattle fodder	95
Agricultural tools	agricultural tools, handle for tools	95
Vegetable oil	Vegetable oil for cooking	88
Wild tubers	Food, local wine	86
Shingles	Roofing	84
Cane	Lunchbox, baskets, chair, table, stool, rope, handicraft, vegetable (tender shoot) (household consumption as well as sale)	77
Dambru	Vegetable (household consumption as well as sale)	76
Bamboos	Bow, arrow, winnower, roof, mat,	

The Vital Link: Monpas and Their Forests

Forest products	Uses	% of households
	fence, prayer flag poles, cup, ladle, milk churner, water/ wine container, food/ grain container, basket, handicraft, vegetable (bamboo shoot); (household consumption as well as sale)	70
Tree fern	Local wine, food	68
Timber	Planks, beam, pole, flooring, batten, window	66
Pole	Poles for fence, flags, house construction, batten	57
Rope	Rope, fibre, bowstring, handicraft	54
Betel leaves	Condiment (household consumption as well as sale)	53
Mushroom	Vegetable (household consumption as well as sale)	35
Fern	Vegetable, cattle bedding (household consumption as well as sale)	34
Resin	Resin for sale	26
Resinous wood	Used for lighting purpose	9
Orchids	Vegetable, decoration (household consumption as well as sale)	7
Guli	Fruits eaten	4
Champaka	Religious ceremony	3
Wang pem	Young shoot as vegetable	3
Broom	Clean house	3
Vegetable dye	Colour for thread, cloth, eggs, polish floor	3
Tea	Tender leaves used as tealeaf	1

The three most harvested forest products were:

Edibles: Cane shoot, vegetable oil seeds, and wild tubers.

Non-edibles: Fuelwood, cane, and bamboos.

All these forest products were harvested for household consumption except cane shoot and handicraft items made from bamboos and cane, which are sold in a small scale.

Mapping of forest resources

The study mapped the forest areas as well as the sources of forest products, which the Monpa community harvested (Annexure). This revealed that the Monpas are highly knowledgeable about the location of different forest products and natural resources which they used (Table 4.1). It was also noted that women were more knowledgeable about resource area for minor forest products such as mushroom, fern and *damburu*, whereas men were knowledgeable about resource area for cane, bamboo, and timber. Priority ranking of forest products demonstrated that the priority products for men were fuelwood followed by cane and bamboo, and timber; whereas for women the priority forest products were fuelwood followed by mushroom, fern, and fodder (Table 4.3).

Table 4.3: Forest products availability trend and priority ranking

Forest products	Increasing	Decreasing	No change	Priority Male	Priority Female
Firewood			x	I	I
Cane and bamboo		x		II	VIII
Timber, pole and shingles		x		III	IX
Mushroom, fern		x		V	II
Damburu		x		VIII	IV
Wild tubers		x		VII	V
Tree fern			x	IX	VI
Fodder		x		VI	III
Agricultural tools		x		IV	VII

Seasonal harvest of forest products

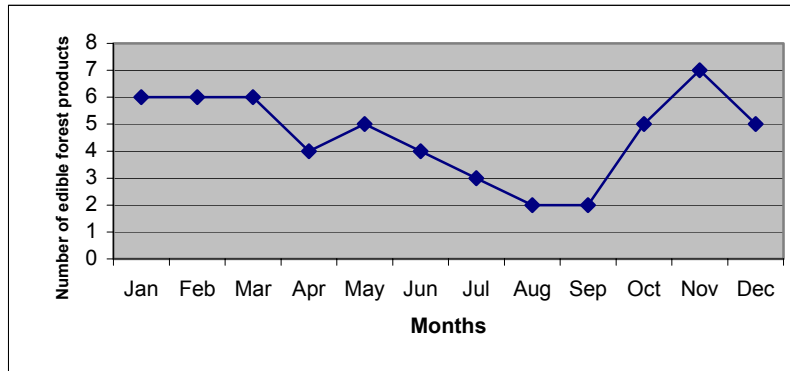
A seasonal harvest calendar was developed during the study in order to become acquainted with the pattern of harvesting forest products. The time of the year when the forest products are harvested is shown in Figure 4.1 and 4.2. It is noted that the largest number of edible plants, especially wild tubers, are

harvested during January, February and March and in October and November. The agricultural cropping pattern of the study area (figure 4.4, page 102) reveals that agricultural harvest occurs mainly in the months of August to October and March. It can be inferred that the forest provides the much-needed supplementary food at the time when crops, especially cereal crops, are in short supply.

Figure 4.1: Seasonal harvesting of forest products (edible and non-edible)

Forest resources	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
bamboo												
cane												
dambro												
Tree fern												
dye												
fern												
fodder												
fruits												
fuelwood												
mush-room												
resin												
shingles												
timber												
wild tubers												
yika												

Figure 4.2: Seasonal harvesting of edible forest products



Forest resource collection and conservation practices

The Monpas collect a variety of plant resources from the nearby forests. All individuals interviewed revealed that they learned about the forests and plants that they use from their elder family members or other people in their village. The following section describes the different products collected from the forests by the Monpas.

Bamboo

Bamboo grows naturally in Bhutan because of the country's largely undisturbed forests. Bhutan's great range of altitudes and climate account for this diversity. Bhutanese bamboo is principally of Himalayan and Chinese-Japanese origin, with some Southeast Asian and South Indian contributions. Bhutan has 15 genera and 31 species of bamboo [FAO 1996]. Of these, 8 genera and 20 species were found to occur in the forests around the Monpa villages. Bamboos are used by the Monpas for various household purposes as well as sold for cash income (Table 4.4).

Table 4.4: Bamboo species

Local Name	Scientific name	Uses
1. Zhushi D M	i. Bambusa tulda ii. Bambusa nutans	Bow, winnower, roofing, fencing, flag poles
2. Zong M Zang K	Dendrocalamus sikkimensis	Churner (milk and tea), cup, ladle, palang, zipa (butter container), dhop (milk pail)
3. Pa M Pagshi D	i. Dendrocalamus hamiltonii ii. Bambusa clavata	Winnower, fencing, roofing, basket, cup, palang, tying material, shoot edible
4. Rawo M Rawa K	Chimonobambusa callosa	Mats for roofing, wall, floor, fence, (not used for handicraft, very rough)
5. Bangshing M		Weave mat, fencing, basket
6. Yengmethla M Kreng K		Handicraft, winnower, fencing, roofing, bag, basket
7. Uphela M Cupi K		Handicraft, winnower, small basket (not used for fencing, not strong)
8. Pishama M	i. Cephalostachyum capitatum (poisonous variety) ii. Cephalostachyum latifolium (non-poisonous variety)	Weave mats, leaf as fodder, poisonous variety used for making arrow, (stem of the poisonous variety is reddish when chopped, non-poisonous variety has whitish stem)
9. Pamethla M Phan K	i. Drepanostachyum intermedium ii. Drepanostachyum annulatum iii. Drepanostachyum khasianum	Bamboo mats for fencing and roofing
10. Zing M War K	Yushania pantlingii	Used for fencing and roofing (small size bamboo)
11. Dei M Dai K	Pseudostachyum polymorphum	Arrow, weaving basket and for tying (small size bamboo)
12. Ree M Rhui K	i. Borinda grossa ii. Thamnocalamus spathiflorus	Mats for fencing and roofing, used as fodder for cattle and horse
13. Teumetla M Suei K	Bambusa alamii	Handicraft, wine container (palang) basket, small bag
14. Mek M Meg K	Yushania microphylla	Arrow, fencing and roofing (small size bamboo)

M=Monkha, D=Dzongkha, K=Khengkha

Bamboo is widely used by the Monpas for making household items such as: bamboo mat for roofing and making walls of houses, as beams and post for houses, floor mat, fence, prayer flag poles etc. Other household products made out of bamboo are winnower, ladle, milk churners, wine and water containers, cups, food or grain containers, baskets of different sizes, rope, bow and arrow. The Monpas eat the tender shoot of most bamboo species, except *Dendrocalamus sikkimensis* and *Drepanostachyum spp.*

Dendrocalamus hamiltonii with sweet shoot is the most preferred bamboo for consumption. Most of the bamboos are used for household consumption, but the Monpas also weave and sell or barter handicraft for items not available locally. Most commonly made handicraft are baskets of different size, bags, furniture, fruit containers etc. Of the bamboo varieties mentioned in Table 4.4, *Dendrocalamus hamiltonii* is the most commonly found. It is also widely cultivated and has great potential for commercialization due to its popularity for handicraft and sweet shoot.



D. hamiltonii cultivated near houses



Bamboo plantation, established in 2000

Making handicraft and household items from cane and bamboo is a traditional craft of the Monpas. This existing skill has been further enhanced through the UNDP/GEF Small Grants project which helped in further improving local skills, product diversification, and marketing linkages. The project also ensures sustainable supply of resources through better management of existing stock, establishment of cane and bamboo nursery and plantation. The cane and bamboo plantation is currently in the process of being registered as community forest.

Bamboo collection and conservation practices

Collection of bamboo is mostly done by men. Two to three people go together to nearby bamboo forest. Bamboo is cut with *patang* from the base, sized further to required length, piled into a bundle that each individual can carry, and is dragged all the way to their houses. It takes almost a day to complete the process. Bamboo is mostly harvested during the months of January and February. The Monpas follow closed season for bamboo harvesting during the months of May to August which is the shooting season. Harvesting is done mostly on *Migmar* (Monday). The Monpas believe that bamboo harvested on Monday is not infected by insects, and thus it lasts longer.

Dendrocalamus hamiltonii is one of the most widely used bamboo species. Most species of *Dendrocalamus* and *Bambusa* are cultivated by the Monpas to prevent soil erosion and to provide bamboo whenever required by the households. *Dendrocalamus sikkimensis* is conserved because of its use as container for wine, milk and butter container. All bamboo species are protected during new shooting stage. The Monpas practise rotational harvesting of bamboo resources allowing regeneration of the harvested stock.

Cane (ratans)

Six species of cane belonging to two genera have been identified in Zhemgang dzongkhag so far. Overall, it is believed that about ten species of cane might occur in Bhutan [FAO 1996]. In the forests of the three study villages of the Monpas, four species of cane representing two genera, *Calamus* and *Plectocomia*, were identified (Table 4.5). *Calamus* is a common climber, which grows extensively in these areas. It

yields strong cane and is used as substitute for rope and as cable for suspension bridges. It is also used for making baskets and containers. The shoot of this cane is eaten as vegetable. Cane shoot of *Plectocomia himalayana* locally known as *patcha* is the preferred cane shoot for consumption. Thicker cane is used for making furniture and walking sticks, among others.

Life without cane would be very difficult for the Monpas. All the four species of cane are utilized to varying extents. Compared to bamboo, cane resources have become very scarce. Currently, it takes eight to ten hours to reach the resource site of cane.

Table 4.5: Cane species

Local Name	Scientific name	Uses
1. Rey M Ree K Rashak (caneshoot)	i. Calamus flagellum ii. Plectocomia himalayana (patcha)	chair, baskets of different sizes, small bag, rope, container, tender shoot harvested for vegetable, patcha (shoot of <i>P. himalayana</i>) sold in market
2. Hampela M Khran K Pangkha-D	Calamus latifolius	Walking stick, rope, basket, chair, table, stool; tender shoot harvested for vegetable
3. Krath K Cheshala M	Calamus acanthospathus	Chair, table, rope, basket, strongest cane - used to make bridge (solitary stem - shoot not harvested for vegetable but judiciously used for handicraft)

Cane collection and conservation practices

Cane resources are scarce and far away from the three villages. In terms of collection, one member from each household goes in a group to the forest and it takes two nights and three days to harvest cane and reach back home. On the first day, the villagers walk to the cane forest and reach there late in the evening. Once they reach the resource site, they

collect firewood, cook food, eat, and sleep. The next day, early in the morning, they harvest cane and make it into rolls. Mature cane is harvested with *patang*, pulled from tree, debarked and rolled into a bundle. The cane rolls are dried on fire the whole night. The people remain awake the whole night drying the cane in the fire. Early next day, the cane is tied up into rolls and they walk back home with cane rolls on the back. They reach home by evening.

Tender edible cane shoots are also cut for household consumption or sale. Since 2000, the Monpas have introduced a local regulation, which is not to harvest more than ten number of cane shoots at one time. This is because, the Monpas have come to understand that harvesting young cane shoot can be harmful to the plant, and its regeneration is low. Cane is mostly harvested during the winter months (December to March). The Monpas practise selective harvesting, only the best quality and required type of cane is harvested. They also practice rotational harvesting of cane resources allowing regeneration of the harvested stock. People from other villages are not allowed to harvest from their neighbouring forest.

The Monpas harvest only mature stems allowing all stems of clum to reach their maximum size before being cut. There is widespread knowledge of the growth habits of cane species among those people harvesting and utilizing cane. Most people were aware that *C. acanthospathus* (Krath) is solitary and that harvest of this cane necessarily kills the plant. Villagers commonly cite this characteristic as a cause of its rarity and use this cane very cautiously. Similarly, the clustering nature of *P. himalayana* is commonly noted as a reason why the species is less vulnerable and relatively abundant in the forest.

Cane is used by 77 percent of the Monpa households for various purposes and handicraft items. It is used to make rope, bowstring, walking stick, sieve, bangchung, basket of different sizes, chair, table, stool etc. Cane is also used to make various other handicraft items along with bamboo. Young shoot of *Calamus* spp. is eaten as vegetable and also bartered or sold in the market.

Medicinal plants

Langthil *geog* in Trongsa district is the most important collection centre for low altitude (Thro-Men) medicinal plant species used in Bhutanese traditional medicine. The Monpas of Wangling, Jangbi and Phumzur villages, which are in the same range as other villages of Langthil, depend entirely on traditional medicine for their health. Diseases, both human and animal, are identified and treated by traditional healers locally known as *pawo* (male) and *pamo* (female). There are two *pamo* and two *pawo* in Wangling village; one *pawo* in Jangbi; and four *pamo* in Phumzur. More than thirty plant species are collected and used by the Monpas as medicines for various illnesses (Table 4.6).

Table 4.6: Medicinal plants and their use

Local Name	Scientific name	part used	Uses
1. Pemagerserseng M Pemgeser D	Bombax ceiba	Flower Bark	Medicine for lungs, liver and heart; used for dog bites
2. Kuemila M Linglingshuk D		Fruit	Medicinal value, sold to NITM
3. Amtrila M	Phylanthus embilca	Fruit	Medicine for cough, blood purification
4. Wompashakpaseng M		Seeds	Medicine
5. Yongkorma M Yoongkar D		Stem	Medicine, sold to NITM

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Local Name	Scientific name	part used	Uses
6. Yurila M		Bark	Bark boiled and water extract used to heal cuts, fractures
7. Tapseng D M		bark	Bark boiled and water extract used to heal wound; women after delivery are bathed in this water
8. Khalimashing D		Seed	Medicine for diarrhoea; made into zinlap
9. Dungmen M Khenpa D	Artemisia vulgaris	Leaf	Leaves crushed and sap applied to cuts/wounds; wounds cleaned with water boiled with <i>A. vulgaris</i>
10. Soman M		Flower	Flower squeezed and placed between teeth as medicine for toothache
11. Katagpa M	Eupatorium spp.	leaf	Medicine for wound/itching wound
12. Chateu M		Leaf	Leaf crushed and sap fed to children with cough
13. Wampakpaseng M		bark	Bark boiled in water and water applied in affected area (gonorrhoea); used as medicine for body itching
14. Wamngatang M		leaf	Leaf roasted in fire and applied when feet itch (fungal and bacterial infection of toes)
15. Aaru D M	Terminalia chebula	fruit	Medicine for cold and fever
16. Baru D M	Terminalia bellerica	fruit	Medicine for indigestion and to cure swollen parts
17. Thalem D M	Punica granatum	fruit, leaves	Medicine for stomach ache; diarrhoea, eye pain (leaves boiled in water and water applied in eyes)
18. Petsheng sha D M	Dryopteris fragrans	Stem	Treats poisoning
19. Khelmashogsho D M	Erythrina arborensens	Seed	Cures kidney diseases

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Local Name	Scientific name	part used	Uses
20. Tsuath D M	Rubia cordifolia	Stem	Cough and cold; Purifies blood
21. Brongkala D M	Butea monosperma	fruit	Skin diseases, diarrhoea
22. Yongka D Youngkadi M	Curcuma longa	Rhizome	Cures wound
23. Bramseng M	Rhus semilata	Fruit	Diarrhoea
24. Shoewo M Thrawa K	Zanthoxylum spp.	Fruit	Deworming, cough
25. Ailanchi D M	Amomum subulatum	Fruit	Stomach ache, diarrhoea
26. Saga D M	Zingiber officinale	Rhizome	Increases appetite, reduce giddiness, warms body
27. Ngakhagchung M	Asparagus racemosa	Root, shoot	Haematoma, shoot eaten as vegetable
28. Khashila M	Adhotoda vasica	Flower stem	Blood purification, steam bath for asthma patient
29. Phising gucha M	Pholidota recurva	Stem	Stops vomiting; skin diseases
30. Pekar M	Canarium spp.	resin	Smoke used to cure giddiness and skin diseases
31. Chang K Guen M	Luffa aegytiaca	fruit	Diarrhoea
32. Kanseng M	Pinus roxburghii	Resin	Cures fresh wounds
33. Chamethla M	Ricinus communis (castor)	seeds	Oil as medicine for wounds, as lubricant
34. Yongkema M		root	Roots crushed and soaked in water, and the water used to treat poisoning

The Monpas identified 34 different species of plants whose different parts including fruit, seed, bark, leaf, root, flower, or resin, are used for medicinal purposes. Although use of medicinal plants is mostly administered by the local healers, elderly members in the community also take part in its dispensing. The traditional healers learn the art of medicine from their ancestors and it is passed on to the younger

generation. Until recently, traditional medicine was the only option for delivering health services in these three Monpa villages. A Basic Health Unit established in February 2002, now provides modern medical service to the local population. However, traditional medicine continues to play an important role among the Monpa population.

Oil yielding plants

The Monpas are one of the very few communities in the country who still use forest plants for vegetable oil production. However, in the recent past, this trend has been changing rapidly and is being replaced by use of oil imported from India. The reasons for this change was reported as - decrease in the availability of these oil producing plants and labour intensive processing. Listed below are vegetable oil yielding forest plants commonly used by the Monpas (Table 4.7).

Table 4.7: Vegetable oil yielding plants

Local Name	Scientific name	Uses
1. KheybasengM Yikashing D	Aesandra butyracea	Olive sized pinkish fruits (fruits peeled off and seeds (white) processed for cooking oil
2. Shingmar M K	Toddalia asiatica	Seed processed into oil, used for cooking; medicine for wounds; feed cattle
3. Aichun M Yongmen K		Seeds processed into oil; used for cooking
4. Polompaseng M		Seed processed into oil; used for cooking
5. Pharjakpo M		Seed processed into oil; used for cooking
6. Domseng M K	Symplocus paniculata	Seeds processed into oil; used for cooking
7. Muram M K		Seeds processed into oil; used for cooking; (less frequently used these days)
8. Semuthla M Kin K		Seeds processed into oil; used for cooking
9. Nga Damang M Dumangla K	Gynocardia odorata	Seeds processed into oil; seeds crushed and fed when cattle have worms
10. Chamethla M K	Ricinus communis	Seeds processed into oil; used as medicine for wounds and constipation, lubricant

The above plants produce oil bearing seed, which are collected and processed into vegetable oil. *Brassica spp.* is cultivated in the dryland and its seeds are pressed to produce edible oil. It was found that 88 percent of the Monpa households collected and extracted oil from wild plants (Table 4.2). Households that have adequate labour to process oil from oil bearing seeds from the forest, do not purchase additional oil from the market to supplement their daily diet. Self-sufficiency in oil could be greatly enhanced through improved oil extraction technology and better resource management.

Collection and conservation practices

Fruits of *Muram*, *Semuthla*, are collected from the tree by sickle tied to a long stick, or by climbing and cutting down small branches with fruits. Seeds are also collected from fruits that have naturally fallen off the tree. Collection is done during the month of October when seeds are completely mature. *Polompaseng* has become rare and it is very difficult to get its fruits. But, unlike other seeds, its fruits do not require intensive processing. The fruit can be just pounded and added to curry.

Indigenous method used to extract *Yikashing* oil

Yikashing (Aesandra butyracea) is a medium sized tree that grows in the wild. Its stem is generally crooked. When the fruits ripen in the months of May through July, they fall down. Fruits are collected and carried home in bags. Fruits are cleaned in water and dried, and then pounded into powder. A big pot with water is placed on fire. A smaller pot with *Yika* powder is placed at the neck and any possible gap is covered with cattle dung or mud. The pot with *Yika* powder is covered with big leaves and the bigger pot is heated using firewood. After heating, the *Yika* flour is transferred into the "so-dalang". Heated *Yika* flour is then placed on a

slab made of wood with channels on it for oil to drain out. The Yika flour is pressed with a wooden plank and stones are placed on top of the plank for increased pressure. After sometime, oil drips down the channel into a container placed below it for collection. "Yika makhu" is used as regular oil for cooking but should be heated slightly for better taste. It looks like Dalda (commercial vegetable oil) and becomes solid when cold. Yika oil is also bartered or sold in the market at the rate of Nu. 100 per kg.

Ornamental plants

Some of the common wild ornamental plants used by the Monpas are: *Rhododendron arboreum*; *Magnolia spp.*; *Dendrobium spp.* *Cymbidium spp.*; *Cupressus cashmeriana*; and *Daphne spp.* Flowers and stem of these plants are kept in the house for decoration.



Orchids in the wild (*Dendrobium nobile*)

Natural dye

Natural dye plays an important role in traditional Bhutanese fabrics. The Monpas obtain natural vegetable dye from plants and minerals by simple, traditional extraction methods. These dyes can be grouped into four categories: leaf dye, bark dye, stem and root dye, and mineral dye. The household survey revealed that only 3 percent of the Monpa households extracted vegetable dye. However, based on actual observation on use of some vegetable dyes, the actual percentage should be higher than revealed during the survey.

- *Leaf dye*: Different plants are used for colouring hand-woven fabrics. The most commonly used leaf dye include *Symplocos paniculata*, *Strobilanthes flaccidifoliosus*, *Rubia cordifolia*.
- *Bark dye*: Bark of walnut tree and *Berberis* species are used as dye.
- *Stem and root dye*: Stem and root dyes are used for varied purposes. Dye from *Curcuma longa* are used for colouring food and yellow colouring for woven fabric.
- *Mineral dye*: These dyes are obtained from natural mineral salts and oxidized iron. e.g. Mordant (*Praksut (D)*)/*Prosala (M)* which are found in rocky cliffs. This mineral, when added to the natural vegetable dye, makes the colour fast.



Eggs boiled with *Rubia cordifolia*



Turmeric planted in the kitchen garden

The following table shows the different species of plants as well as different parts of those plants used by the Monpas to extract dye.

Table 4.8: Plants producing vegetable dye

Local Name	Scientific name	Uses
1. Semethla M Tshuth K	Rubia cordifolia	Whole plant with leaves used; red colouring of thread/cloth/eggs, monk scarf, floor polish
2. Ram D Joemethla M	Strobilanthes flaccidifolius	Leaves used for blue colouring of thread/cloth
3. Youngkadi M Yongka D	Curcuma longa (turmeric)	Rhizome; yellow colouring of thread/cloth Also edible as spice; cultivated
4. Zim M	Symplocos paniculata	Leaf used for light blue colouring of cloth/thread, earlier used to extract oil from seeds

Edible products from forest

The Monpas depend on wild plants and tubers both during normal and food-scarce seasons. During the food-scarce season, they live on wild tubers. It was found that 86 percent of the Monpa households harvested and used wild tubers as food and for brewing local wine (Table 4.2). There are a number of plant species whose fruits, seeds, tubers, roots, leaves or stem are collected and consumed by the Monpas. The study found that more than 80 different species of plants were used as food in some form or the other (Table 4.1). Considering the small population and area, the number of species utilized by the Monpas is impressive and the importance that these plants play in their nutrition and food security is considerable. The large number of species (10 species) categorized as wild tubers are of particular importance as these plants are a major source of carbohydrate during the food-scarce season (Table 4.9). Some of these edible plants include:

Stem

Fern grows wild in the forest surrounding the Monpa villages. The study population identified six different species of fern that they collect. Edible fern is collected only at a tender stage. It is harvested during the months of March through June. Fern is boiled with cheese and some butter, and eaten with rice.

Mushroom grows wild in the forests surrounding the Monpa villages. Different species, both edible and non-edible, are found in the local forests. The Monpas identified ten different types of edible mushroom. It is collected mostly during summer, June through September. It is also dried for better taste and for longer storage. Mushrooms form an important vegetable item for the Monpas.

Young **shoot** of cane are harvested and used as vegetable. Vegetable made of young tender shoot of cane is a delicacy in the Bhutanese cuisine. Shoot of some species of bamboo is also used for vegetable purposes. Tuber and tender inner part of shoot of *Cythea spp.* (Tree fern) is used for brewing local wine. It is also cooked and eaten during the food-scarce season.



Fern (*Diplazium spp.*): A seasonal vegetable Tree fern (*Cythea spp.*)

Flowers

Forests around the Monpa villages grow abundant variety of orchids. Orchids flower during the months of February through September. *Olachoeto* (young flower buds of *Cymbidium spp.*) is consumed as a vegetable and is a cherished culinary in Bhutan. *Olachoeto* flowers are plucked along with the stem. They are harvested during the flowering season in the months of February through September.

Leaves

Betel leaf is chewed with betel nut, smeared with lime. It is also chewed with the bark of *Poikilospermum lanceolatum* and lime, that gives a similar taste, flavour and stain as betel nut. *Piper betleoides* (betel leaf) grows wild in the surrounding forests which is harvested by the Monpas both for consumption as well as for sale. Leaves of several other species of plants are consumed as vegetables viz. *Elastostema spp.*, *Phylodendron spp.*, *Allium spp.*



A Monpa woman plucking betel leaves

Women chewing betel leaves with bark of *Poikilospermum lanceolatum*

Fruits

Wild fruits are abundant in the nearby forests. The Monpas utilize wild fruits for various purposes like extraction of edible oil, lubricant, direct consumption and for medicinal purposes. The Monpas identified twelve different varieties of fruits from the forest used for consumption, and ten other species of plant fruits used to extract edible oil (Table 4.9, 4.7).

Roots/tubers

Ten different varieties of wild tubers were harvested for consumption by the Monpas. These wild tubers are found in abundance in the nearby forests and form an important food supplement for the Monpas in the lean season. Roots and tubers from the forest are also used for brewing local alcohol for household consumption. Wild roots and tubers are primarily collected in the months of January through March and in October and November.

Wild roots and tubers are collected when plants mature. Roots and tubers are dug out from soil, cleaned, boiled and consumed. Tubers of Tree fern and *Jengpa* are boiled, dried, mixed with barley or wheat for alcohol brewing. Wild tubers play a very important role in maintaining food security and nutrition of the Monpas.

Table 4.9: Edible forest products used by the Monpas

Local Name	Scientific name	Uses
EDIBLE FERN		
1. Ngakey D M	Diplazium spp.	Eaten as vegetable
2. Shama M Ngakey D		Eaten as vegetable
3. Guenshimar M		Eaten as vegetable
4. Wowa Ngakey M Rawo Ngakey K	Diplazium spp.	Eaten as vegetable (bigger size and taste better)
5. Deng MK	Cythea spp.	sliced inner stem after

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Local Name	Scientific name	Uses
	(Tree fern)	water treatment is boiled and eaten or ground into powder and cooked; also make ara, bangchang after fermentation
6. Kilangma M		Stem cooked and eaten as vegetable
EDIBLE MUSHROOM		
1. Selishamu M D	Pleurotus spp. (Yellow)	Vegetable
2. Khalashamu M D	Pleurotus spp. (Orange)	Vegetable
3. Sejuromo D M		Vegetable
4. Wompokpa M		Vegetable (less used)
5. Yugalamu K Komshu M		Vegetable
6. Legashamu M	Hydnum rapandum	Vegetable
7. Nelangarting M Jelinamcho D	Auricularia auricula	Vegetable
8. Simikangmising K Wombamingsing M		Vegetable
9. Belamu M	Lycopodon spp. (White)	Vegetable, taste good
10. Yongkalamu M		Vegetable
EDIBLE CANE		
1. Rey M Ree K (Rashak - caneshoot)	i. Calamus flagellum ii. Plectocomia himalayana	tender shoot harvested for vegetable, shoot of <i>P. himalayana</i> sold in market
EDIBLE BAMBOO		
1. Pa M Pagshi D	i. Dendrocalamus hamiltonii ii. Bambusa clavata	tender shoot eaten as vegetable
EDIBLE ORCHIDS		
1. Olachoto D M	Cymbidium spp.	Flower buds edible winter (flower white-red)
2. Olachoto D M	Cymbidium spp.	Flower buds edible summer (flower white)
3. Bogpatla M	Coeleogyne spp.	Flower buds edible flower red-white
4. Wangpem M	Calanthe spp.	Buds and flowers edible
EDIBLE PLANTS		
1. Damburu D M	Elatostema platyphyllum	Stem and leaves eaten as vegetable
2. Pan M	Piper betleoides	Betel leaf

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Local Name	Scientific name	Uses
3. Zimchangchung M		Green leaves used as vegetable (grow on trees)
4. Mashay M	Allium spp.	Vegetable
5. Chelampi M	Nasturtium officinale	Vegetable (grow in marshy area)
6. Mentala chok M	Murraya keonigii	Tender leaves cooked with meat and eaten; Fruits eaten when ripe (sweet, black colour)
WILD FRUITS		
1. Guli K M	Persea fructifera (Avocado)	Fruits are eaten (fruiting once in 3 years)
2. Shekila M Amsuguli D	Mangifera sylvatica	Fruits are eaten
3. Khashakorok M K	Phytolacca acinosa	Fruit eaten
4. Kashak M Tagoshing D	Juglans regia (walnut)	Fruits (seed kernel) are eaten; also cultivated
5. Namarip M K	Mahonia spp.	Fruits eaten
6. Numpang M Humpa D	Citrus medica	Fruits eaten in place of lemon
7. Jaga churpo M	Citrus spp.	Fruits eaten in place of lemon
8. Andey M D	Diospyros kaki	Fruits eaten (orange colour)
9. Shing-lam-benda M	Eyphomandra betacea (Tree tomato)	Fruits eaten as vegetable
10. Yangkadi M		Fruits roasted in fire, peel off skin, keep in water for 3 days and consumed
11. Lechila M		Fruits eaten (wild mango)
12. Pataye M Phatey K	Thelypteris multilineata	Fruit eaten, peel skin, cut into pieces, soak in water for 2 days and consumed
WILD TUBERS		
1. Mochela M Mokeh K		Tubers boiled and eaten as food
2. Dawaila M	Dioscorea spp.	Tubers boiled and eaten as food
3. Kokshola M	Dioscorea spp.	Tubers boiled and eaten as food (tuber red colour)
4. Shakpa M Zhugpa K	Dioscorea pentaphylla	Tubers roasted in fire and eaten, boiled and eaten, make wine

Local Name	Scientific name	Uses
5. Jengpa M		Make bangchang, boiled and eaten
6. Kochak M Khawang K	Dioscorea spp. (used to be cultivated in tseri)	Make bangchang, tubers boiled and soaked in water for 2 days and eaten
7. Yoemeka M Blue K		Tubers boiled and eaten as food
8. Chelanki M		Tubers boiled and eaten as food
9. Pakalasha M Paralacha K		Skin peeled off and eaten raw
10. Chee M Kee K	Dioscorea hamiltonii	Tubers boiled and eaten as food

Tea yielding plants

The tea leaves are collected primarily for local consumption. Some of the plant species used for making tea are: *Persia odoratissima*, *Loranthus spp.*, *Juglans regia*, *Viscus nepalensis*, *Osyris lanceolata* etc. The collection of tea leaves from the forest is extremely difficult, as they are found on tall trees. At the same time, it was reported that these plants are becoming rare. Mature leaves of *Persia odoratissima*, *Loranthus* are boiled with ash, dried and used when preparing tea. Flowers of *Juglans regia* (Walnut) are dried and used for preparing tea. A total of fifteen species of plants were identified, the leaves and flowers of which are used in preparing tea.

Table 4.10: Local tea used by the Monpas

Local Name	Scientific name	Uses
1. Samte Dema M		Leaf used for making tea, wood used for making cup
2. Choksengma M	<i>Persea odoratissima</i>	Leaf used for making tea
3. Chalamaseng M Chalam K	<i>Acer cambelli</i>	Leaf used for making tea
4. Tamkharla M		Leaf used for making tea
5. Chemarma M	<i>Osyris lanceolata</i>	Leaf used for making tea
6. Ugyen Guruja/ Sertakshing M		Leaf used for making tea

Local Name	Scientific name	Uses
7. Sengleng M	Morus mucurea	Leaf used for making tea (wood black)
8. Khuchegi meto M	Juglans regia (Walnut tree)	Flowers dried and used for making tea (preferred amongst others)
9. Zekta M		Leaf used for making tea
10. Sela M K		Resinous sap used for making tea
11. Sewa M		Leaf used for making tea
12. Karmapokchija M		Leaf used for making tea
13. Langmaja M		Leaf used for making tea
14. Kesangmetog M		Tea from red flower
15. Ngenshithup M	Viscus nepalensis	Leaf used for making tea

Incense

In Monpa culture, plants play a major role in the rituals of purification through fumigation. Everyday, villagers offer incense to the deities. Some of the common species used as incense by the Monpas are *Cupresses cashmeriana*, *Canarium spp.*, *Rhododendron arboreum*, *Cinamomum grandiliferum*, *Citrus spp.*, *Artemisia spp.* etc. These plants are also regarded as sacred as they are offered to local deities. Leaves or small branches are used for fumigation. Some trees like *Canarium spp.* produce resinous sap which is also used as incense. *Cinamomum grandiliferum* gives very good perfume and the Monpas consider this species as a valuable plant. A total of six species of plants are available in the nearby forests which are used as incense.

Table 4. 11: Plants used as incense

Local Name	Scientific name	Uses
1. Poikala M	Canarium spp.	Wood and resinous sap used as saang for puja (Pawo/Pamo use this saang while performing rituals)
2. Arkaseng M	Cinamomum grandiliferum	Saang, gives good aroma
3. Arnaseng M	Aquilaria agarlocha	Wood used as saang (wood black)
4. Tselu M	Citrus spp.	Wood used as saang, leaves dried and ground for saang
5. Chendenseng M Tshendenshing D	Cupressus cashmeriana	Wood and leaves used as saang
6. Tangmekka M Khenpa D	Artemisia spp.	Used as saang (used commonly earlier)

Fiber/rope

Fiber and rope are used every day for household and farming activities by the Monpas. These are derived from plants such as: *Calamus spp.*, *Dendrocalamus*, *Daphne*, *Giardina diversifolia* etc. *Calamus* is a common climber, which grows in the forests. It yields strong cane and is used as a substitute for rope and as cable for suspension bridges. Thirteen species of plants were identified by the Monpas which they use for extracting fiber (from bark) or making rope [Table 4.12].

Table 4.12: Plants used for rope/ fiber

Local Name	Scientific name	Uses
1. Pagala M Payerla K	Phoenix sp.	Make good rope, fiber used for weaving cloth in the past
2. Nampela K Kulima M	Giardina diversifolia	Used as rope, fiber for cloth and bag
3. Chaksela		Used as rope, fiber for cloth
4. Khasharophi M K		Used as rope for fencing
5. Ngatangtela M		Used as rope, fiber for cloth
6. Taptengma M Marep K		Used as rope, fruits eaten
7. Tokchuma M		Used as rope for fencing
8. Denap	Daphne spp.	Rope, tie bundles of bamboo
9. Nangugla		Bark for making rope, fiber for

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Local Name	Scientific name	Uses
		bag
10. Kesia		Rope, bowstring, fiber for bag
11. Ray (cane)	Calamus flagellum	Rope, tie edge of baskets
12. Yangkati M Yang gali K		Used as rope, fiber, fruits eaten or brewed into alochol
13. Nausengla		Used as rope, fiber



Tree bark being harvested to make rope



Women with cane rope

Fodder trees

Livestock rearing is an important activity of the Monpa community, and fodder plays an important role in maintaining this activity. Almost all the Monpa households rear cattle. Although the Monpas graze their cattle in the forest, *tsamdo*, and their own field, more than 70 percent of households supplement grazing with fodder. Fodder is mostly collected by men from the forest. Farmers need fodder particularly during winter months when the ground herbage is exhausted. More than twenty five plant species are used by the Monpas as fodder for their cattle (Table 4.13). Most of these trees are inferior timber species but are important to the Monpas as fodder.

Table 4.13: Fodder trees used by the Monpas

Local Name	Scientific name
1. Okseng* M Bagushing D	Ficus auriculata
2. Phoseng* M	Ficus oligodon
3. Pong* M Nyashing D	Ficus spp.
4. Sangseng* M Redang K	Ficus spp.
5. Kitlangka* M	Ficus spp.
6. Sipsangla* M	Ficus subincisa
7. Shepen* M	
8. Japkarmo* M	
9. Jerupi* M	Bridelia spp.
10. Krapla* M	
11. Sorsolaseng M	Celtis tetrandia
12. Tompangla M	Tririna politoria
13. Moram M	Keydia calicina
14. Yomngatam M	
15. Kueseng M	
16. Kansengmo M	
17. Youeng M	
18. Ley M	Pyrus pashia
19. Solam M; Sar K	
20. Banpalakpa M	
21. Wormjaptan M	
22. Wamzaptan M	Altingia excelsa
23. Peeseng M	Quercus griffithii
24. Namsengma K M	Grewia optiva
25. Pokseng M	Castanopsis spp.
26. Tompangla M	Trevesia palmata
27. Tomalaseng M	
28. Ledramo M	Crateva religiosa

*Fodder tree that produce milky sap

Collection and conservation practices:

Fodder trees are lopped mostly during the winter season when the ground vegetation is exhausted. Lopping of fodder trees is avoided during the months of April to August and when the trees are coppicing. This is to allow regeneration of fodder trees so that they can provide good forage during winter months when needed most. It was found that 95 percent of the Monpa households used these trees as cattle

fodder (Table 4.2). After the cattle feed on the fodder, the twigs are dried and used as fuelwood.

Broom

Brooms are made from plants collected from the forest. The most commonly used plant species for broom are: *Thysanolaena maxima*, *Artemisia spp.* Besides being used as brooms, some of these plants are also used for thatching. Broom made from these plants are sold in the market (Langthil, Trongsa and Bumthang) for about Nu. 10 each. *Thysanolaena maxima* is harvested only in the month of January and February. If harvested earlier or later, it breaks off and does not last long.

Table 4.14: Plants used for broom

Local Name	Scientific name	Uses
1. Pheksangla M	<i>Trachycarpus fortunei</i>	Broom
2. Pokthela M Tsakhusha D	<i>Thysanolaena maxima</i>	Broom (good quality)
3. Parala K Pakala M		Broom, for thatching
4. Duenkami M		Broom
5. Tangmeka M Khenpa D	<i>Artemisia spp.</i>	Broom, used for mulching

Fuelwood

Fuelwood is one of the most commonly used forest products by the Monpas. It is used daily for cooking, heating and for home lighting (Table 4.15). A large quantity of fuelwood is also used for brewing local wine. More than 60 percent of fuelwood requirement is met from nearby forests and the rest is collected from their own agriculture fields. On an average, each household consumes about one back-load (20 kg dry) of fuelwood per day. While collection of fuelwood is mostly done by male members, cooking is mostly done by female

members. Some of the commonly used fuelwood tree species are: *Quercus spp.*, *Castanopsis spp.*, *Alnus spp.* (Table 4.16). Nineteen species of plants were identified by the Monpas as fuelwood. Besides fuelwood, the Monpas also collect *Meptshi* (torchwood) from Chirpine tree. *Meptshi* was found to be one of the main sources of household lighting in these villages.

Table 4.15: Fuelwood - a major source of energy

Fuel type	Cooking	Lighting	Space heating
Fuelwood	100 %	69 %	92 %
Resinous pinewood (<i>meptshi</i>)	-	15 %	8 %
Kerosene	-	16 %	-

(The above figures include percentage of households)

Table 4.16: Plants used for fuelwood

Local Name	Scientific name
1. Kumaseng M Gamaa D	<i>Alnus nepalensis</i>
2. Peeseng M Sisishing D	<i>Quercus grifithii</i>
3. Kreeseng M	<i>Quercus lamellosa</i>
4. Sagseng M	<i>Pinus roxburghii</i>
5. Gumashing D	<i>Quercus glauca</i>
6. Shokhoiseng M	<i>Castanopsis spp.</i>
7. Chepmala M	<i>Castanopsis spp.</i>
8. Choksengma M	<i>Persea spp.</i>
9. Sheykeyla M	<i>Castanopsis spp.</i>
10. Phangragpa K	
11. Polombaseng M	
12. Tsegpashing	
13. Mekham M K	
14. Bomchusang M	<i>Macaranga denticulata</i>
15. Jakaka M	
16. Kholomaseng M Kholongbashing D	<i>Astrodiodes</i>
17. Orkela K	
18. Olaseng M	
19. Sikpaseng M	

Meptshi used at home for lighting and heating



Collection and conservation practices

Firewood collection is not a problem for many households as they live near the forests. One of the key informants tells that he can collect a back-load of firewood within half an hour from his nearby forest. Some Monpas complained that these days there is restriction (from Forest Department) on firewood collection from the forest. The Monpas cut branches, lops and tops of trees felled for timber. Wood from dead trees is also collected as fuelwood. In the past, the Monpas collected fuelwood as and when required, but these days they collect and store fuelwood for later use as it is becoming scarce.

Agricultural tools

The Monpas make many household items and farming tools from wood. They have gained knowledge about the suitability

and strength of each type of tree based on their experience and knowledge passed on by their ancestors. Wood of *Quercus spp.* and *Toona spp.* are known for their strength and hence are used for making plough. Other farming tools such as axe handles, knives handles, yokes, rice pounders, tools for grinding chilli etc. are also made by the Monpas. The commonly used plant species for farming tools are *Quercus spp.*, *Rhododendron arboreum*, *Schima wallichii*, *Toona ciliatta* etc. Ninety five percent of the Monpa households used wood for making a variety of agricultural tools needed for their farming and other daily use. A total of 15 species of plants were identified by the Monpas which they used for making agricultural tools (Table 4.17).

Locally made tools for use at home



Kitchen items

1. *Dochung* - keep dry meat, food items (made of bamboo)
2. *Umpang* - store fermented cereal for alcoholic drink; store seeds, wild fruits; (this plant grows in *tseri* and is not edible).

3. *Chongke* – used as ladle to pour water, alcoholic drink; (this plant grows in *tseri*).
4. *Pedma dung* – used to store salt, seeds; (made of *D. Hamiltonii*; two pieces of bamboo clamped together).
5. *Chemeling* – Pot stand; (made of cane).



Knife handle made from root of *Dendrocalamus Hamiltonii*

Table 4.17: Trees used for making tools by the Monpas

Local Name	Scientific name	Uses
1. Tsela M K		Plough, axe handle, knife handle
2. Kree M	<i>Quercus</i> spp.	Plough, grinder handle
3. Yai seng M	<i>Toona ciliatta</i>	Plough, grinder handle
4. Metsarma M		plough, axe handle, knife handle, yoke
5. Gumashing M K	<i>Quercus glauca</i>	Used for making plough
6. Keptishing M K		Used for making plough
7. Dektola M		Tool for beating rice, plough

8. Jenseng	<i>Schima wallichii</i>	Tool for beating rice, plough
9. Tekarseng M		Yoke
10. Choksangma M	<i>Persea odoratissima</i>	Knife handle, tool for grinding chilli
11. Shayseng		Grinder handle
12. Arato M	<i>Rhododendron arboreum</i>	Plough, knife handle
13. Tamaseng M		Plough
14. Khebaseng M		Plough
15. Shokhoiseng M Shokoshing D	<i>Castanopsis spp.</i>	Tool for beating grains

Timber, Pole and Shingles

Timber, pole and shingles are the major forest products used by the Monpas particularly for house construction and for fencing. Most of the Monpas use shingles to make roof of their houses. Shingles are readily available and cheaper as compared to the corrugated tin sheets that have to be transported from Gaylegphug or Thimphu, the nearest towns which are about two days journey by road. Trees with straight grains (*Pinus roxburghii*) are generally preferred for shingle. Other trees include *Castanopsis spp.* The shingles are left to dry in the forest for about two months. Both men and women then carry the shingles home. On an average, 500 pairs of shingles are required for roofing of one house, and are changed once in 5 to 10 years. *Castanopsis spp.* is the most preferred species for shingles as it lasts for about 15 years. The Monpas are a cohesive community and follow the traditional culture of labour sharing. Households deciding to change roof shingles, construct a new house, or repair an old house, inform their neighbours. All households contribute labour by assisting in carrying timber and contributing labour for the house construction or repairs.

Poles from trees are mostly used for fencing, house construction, prayer flags, batten, and as tethering poles. Some of the commonly used tree species for poles are: *Quercus spp.*, *Castranopsis spp.*, *Symplocus spp.*, *Rhus spp.*, *Pinus spp.*, *Alnus nepalensis*, etc. Most of these tree species were reported to be decreasing in the nearby forests.

Timber which includes beams and planks is used mainly for house construction. Foundation and walls of the house are often made of stones, but the house itself consists of beams which form the main structure. Often, the walls are made of stones or bamboo mats plastered with clay. The floors are made of wooden planks. The commonly used tree species for plank and beam are: *Michelia spp.*, *Toona spp.*, *Pinus spp.*, *Castanopsis spp.*, *Schima wallichii*. The Monpas believe that trees for beams can be felled anytime of the year but preferably between February and July. It is believed that beams, planks and shingles from trees cut during this period last longer. The Monpas fell trees for timber only on *Migmar* (Monday), as it is believed that the timber harvested on Monday will not be infected by insects and will last longer. The Monpas avoid felling trees on the 15th and 30th day (full moon and no moon), of the Bhutanese month. Beam is made immediately after the felling of trees since fresh wood is easier to split and clean. From an ideal tree, two to three beams can be extracted, though most trees yield only one or two beams. The beams are left in the forest to dry and later, men drag them home.

Table 4.18: Trees used for timber, pole and roofing shingles

Local Name	Scientific name	Uses
1. Saengleng M Sengleng K	<i>Morus macroura</i>	Cham, plank, pole, shingles, tools
2. Kharseng M Kharshing D	<i>Michelia spp.</i>	Cham, plank, pole
3. Yoeseng M	<i>Toona ciliatta</i>	Cham, planks, wooden box

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Local Name	Scientific name	Uses
Chuenshing D		(good timber)
4. Praguli M K	<i>Persea</i> spp.	Cham, planks, fruits edible
5. Lungmarmo M K		Cham, planks
6. Kanseng M Tongphushing D	<i>Pinus roxburghii</i>	Cham, shingles, pole
7. Domseng M K	<i>Eurya japonica</i> ,	Roof ceiling, pole
8. Khashak M Tagoshing D	<i>Dalbergia latifolia</i>	Cham, ceiling, fruits edible
9. Shakeyla M Kemala K	<i>Castanopsis</i> spp.	Shingles, pole, timber, fodder
10. Shokhoiseng M Shokoshing D	<i>Castanopsis</i> spp.	Shingles, timber, pole, fruits edible
11. Kemetla M Kuthmeching K		Cham, planks, pole, fruits edible
12. Namsengma M	<i>Grewa optiva</i>	Cham, planks, pole, fruits edible
13. Hepola M Gumangla K		Cham, plank
14. Jansenka M Kangkala K		Planks
15. Yoeshing D	<i>Toona ciliatta</i>	Planks
16. Merang M		House roofing, prayer flags
17. Janseng	<i>Schima wallichii</i>	Cham, batten, rice pounder
18. Kreeseng M Kraye D	<i>Quercus lamellosa</i>	Poles for fencing, teething pole
19. Chokashing D Bramseng M	<i>Rhus</i> spp.	Poles for fencing, teething pole
20. Pisang M Peshing D	<i>Quercus griffithii</i>	Pole for housing and fencing
21. Kumaseng M Gumashing D	<i>Quercus glauca</i>	Pole for housing and fencing
22. Shakeyla M Shakhoi K	<i>Castanopsis</i> spp.	Used as batten, fencing, housing
23. Jagakaseng M Kakashing D	<i>Alnus</i> sp.	Pole for hut, fencing
24. Chekmala M	<i>Rhus</i> spp.	Prayer flag poles, shingles
25. Yakhroe M	<i>Toricellia tillifolia</i>	Flag pole, fencing, shingles
26. Shekeyla M	<i>Castanopsis</i> spp.	Shingles, pole
27. Kemela M		Shingles
28. Sokar M K		Shingles
29. Sona M K		Shingles
30. Sagseng M		Timber, shingles, batten
31. Kankalaseng M Kankalashing D		Shingles

Timber collection

Collection of all timber products such as pole, shingles, planks and beam are conducted collectively on the basis of mutual help. A group of men go to the nearby forest and fell trees when required. A total of 31 species of trees were identified by the Monpas for use as roofing shingles, poles and timber. Prior to 1969, there was no restriction on the harvest of timber for household consumption. But after 1969, the RGOB has enforced strict rules and rationing on timber extraction. Forest permit is required for felling trees. The forest staff at the *geog* level keeps a strict vigilance on extraction of timber and other prohibited produce from the forests.

Forest products contributing to household economy

The Monpas use a variety of forest products for their daily use and some for sale to earn cash income or barter with goods required for household consumption. The forest products sold to generate cash income include: cane and bamboo handicraft items, resin, betel leaf, fern, *damburu*, mushroom, cane shoot, and avocado (Table 4.19 and 4.20). The non-timber forest products play an important role in the household economy of the Monpas. Some improvement in the processing and packaging of the forest products and market linkages would enhance their cash income.

It was observed that as high as 83 percent of households were involved in selling cane shoot and up to 69 percent households in selling cane and bamboo handicrafts. Cane does not regenerate as fast as bamboo. Due to frequent harvest of cane shoot as well as demand of mature and healthy stem, for the purpose of handicraft, it has resulted in significant depletion of this resource. More than 50 percent of

households collected and sold betel leaves and 27 percent tapped resin from Chirpine trees. Only a small percentage of households were involved in sale of other forest produce like fern, mushroom, *dambru* and avocado, for minimal cash generation.

It should be noted that the data reported is based on voluntary revelation of facts as well as observation of day to day activities. There are government regulations against extraction of cane, bamboo, resin, and hence, voluntary revelation of data may be sub-optimal.

Table 4.19: Percentage of households that sell forest products

Cane shoot - 83%	Cane and Bamboo handicrafts - 69%
Betel leaf - 53%	Resin - 27%
Fern -11%	Dambru-7%
Mushroom -3%	Avocado -3%

Table 4.20: Forest products contributing to household economy

Forest products	For sale	For self consumption	Price (Ngultrum)	Remarks
avocado	x	x	Nu. 1 for 5 pieces	mostly home consumption
bamboo shoot	x	x	Nu. 30-40/kg	mostly home consumption
betel leaf	x	x	Nu. 10/ bundle	high demand
cane shoot	x	x	Nu. 10/ piece	high demand
dambru	x	x	Nu. 5/ bundle	good market
dye (different types)	x	x	Nu. 7 to 50/ kg	sold in Bumthang
fern	x	x	Nu. 5/ bundle	good market
handicraft items	x		various	major income
mushroom	x	x	Nu. 50-80/ kg	good market
resin	x		Nu. 8/kg	major income
vegetable oil	x	x	Nu. 60 to 100/ kg	mostly home consumption
walnut	x	x	Nu. 1 for 5 pieces	sold in Langthil

Cane shoot

Cane shoot is considered a delicacy in the Bhutanese cuisine, and thus has a high market demand. Each cane shoot is cut at a length of three feet and fetches a price of Nu. 10 to 15 per piece. More than 80 percent of the households sell cane shoot. This high demand for cane shoot has resulted in harvesting of cane shoot in huge quantities. Recently, realizing the danger of over harvesting, the Monpas have come up with a local regulation that each person can harvest or sell only ten pieces of cane shoot at a time.

Handicraft items

Cane and bamboo are the two most versatile plant materials available to the Monpas. The Monpas of Trongsa are excellent weavers and they have learnt this art from their ancestors. Bamboo is used for a variety of purposes as house building material, for making mats, baskets, rope, winnower etc. Similarly, cane is also used to make high quality household materials and handicraft items. Cane products are much more durable than bamboo but resources are more scarce as compared to bamboo. Young shoots of bamboo and cane are consumed as vegetable. Out of the total 40 households, 69 percent households sell handicraft items made from cane and bamboo (Table 4.19). Handicraft has become an important source of cash income for this community.

The Monpas of Wangling, Jangbi and Phumzur villages collect cane and bamboo from 17 different forest areas. The people of Jangbi collect bamboo from Kumchen, Lamrang, Zangjan, Moktzhola, Ramdichu, Kubhen, Zaeling and Shingkhai, all located between two to three hours walking distance. Bamboo forests are closer to Wangling, within one to two hours walking distance. Monpa of Wangling collect their resources from Duling, Cupiling, Tangkhala and Dungsum. The people

of Phumzur get their bamboo from Kurtog, Zangjan, Ramdichu, Charpang, Lamrang, Lamrak, Thangda, and Lamlang. All these areas are within four hours walking distance.

Resin

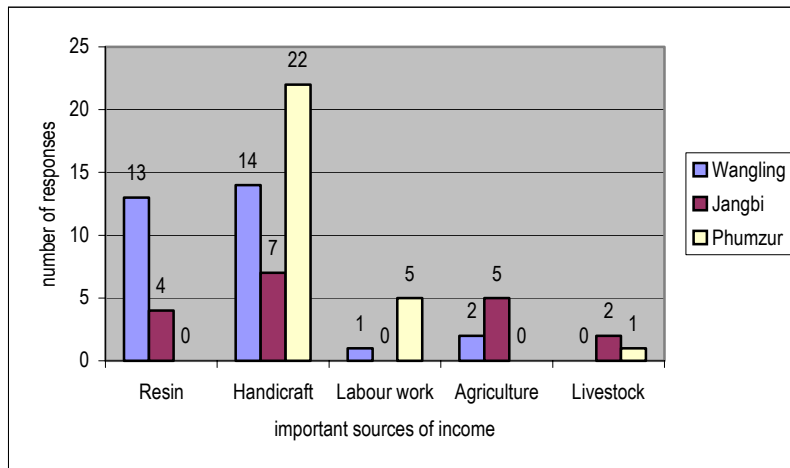
Resin tapping started in Bhutan in the year 1974 with the signing of a fifty-year lease agreement between the RGOB and Dasho Ugen Dorji, Chairman of Tashi Group of Companies. Chirpine forests of five eastern districts were allowed for tapping under this lease agreement. Till the late 1980s, labourers from Himachal Pradesh were engaged for all tapping activities, as Bhutanese did not have the expertise. By the nineties, all tapping activities had been handed over to Bhutanese people trained by Tashi Rosin and Turpentine Industry.

The Department of Forest has developed guidelines and regulations on resin tapping. Deviation from this prescribed regulation has made Chirpine trees more susceptible to damage from fire and wind. In some cases, excessive tapping has led to girdling of trees and ultimately their death. This problem is exacerbated by *meptshi* collection. The oil bearing exposed part of the tree trunk (after resin trapping) is chipped out and these chips (*meptshi*) are used for lighting the houses and as torchwood at night.

Although resin tapping seems harmful to the health and sustainability of Chirpine forests, it is an important off-farm enterprise that contributes significantly to the household income of the tappers [Norbu 2000]. It is evident that 60 percent of the Monpa population practise agriculture, but their main source of income is handicraft made from cane and bamboo, followed by resin tapping (Figure 4.3). The Tashi

company pays a royalty of Nu. 4 per kilogram of resin to the RGOB and Nu. 8 per kilogram to the tappers as the price of resin. Twenty seven percent of the Monpa households tap resin. Figure 4.3 shows that the majority of the people from Phumzur weave handicraft items whereas most people from Wangling tap resin, for income. The Monpas follow the French Cup and Lip method to tap resin from Chirpine trees. Resin is tapped during the month of March to November with a rest period of three months from December to February. It was reported that maximum resin flow occurs during the months of May and June.

Figure 4.3: Important sources of cash income by village



Betel leaf

Betel leaf also forms an important cash earning forest produce for the Monpas. Fifty-three percent of the households collect and sell betel leaf (Table 4.19). Betel leaves (*Piper betleoides*) are collected from the forest and sold in small bundles in Langthil, Trongsa and Bumthang. Each bundle fetches around Nu. 10.

Fern

Fern is an important source of green vegetable to the Monpas. It is also harvested and sold by some households (11 percent) for cash income. It grows abundantly in summer primarily between the months of March and June. Six species of edible ferns were identified by the study population. The tender shoot of fern is plucked, a handful tied into a bundle and sold in the market. Each bundle of fern fetches Nu. 5.

Mushroom

Mushrooms are found in abundance in the forests during the summer months. The Monpas identified ten different varieties of mushrooms that are edible. It is harvested mainly during the months of May through September. Mushroom has good market value and is sold at a cash price of Nu. 60 to 100 per kilogram depending on the variety.

Forests and food security

The edible plants harvested from the forests form a major part of the diet for Monpa households. The Monpas harvest and consume more than 80 edible plant species from the forests. The period when the largest number of edible plants are harvested from the forests coincides with the time of the year when farmers face shortage of food-grains. The health and nutrition of the Monpas appear to be related to the availability of forest food plants, and hence, the biodiversity of their neighbouring forests. The availability of these edible plants in the forests also affects their attitude towards developing and maintaining kitchen gardens. A very few Monpa households have kitchen gardens.

Although all Monpas in the three villages are dependent on forest food to a great extent, this trend is changing. The

Monpas of Wangling and Jangbi have begun extensive cultivation of crops and depend less on forest food, whereas in Phumzur, which is further away from the road-head, people still depend on forest food to a great extent (Table 4.24, page 106). Among the three Monpa villages, Wangling and Jangbi are better off and self-sufficient in food grains as compared to Phumzur. They save grains for seeds, festivities, religious congregations and household consumption.

Forest contributes to self-reliance



A Monpa woman with her child

One can notice how valuable forest products are when we visit any Monpa home. Almost every item available in the Monpa house is associated with forest or forest products. Without the forest resources close to their villages, they would be forced to purchase much of what they currently produce themselves. In view of the limited cash economy in the three Monpa villages, it is not unreasonable to view the forest as a kind of bank account. When all else fails, the forest provides a buffer for the Monpas' self-reliance.

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Forest products for household use – house building materials, tools to pound grains, firewood, baskets, bags from nettle plant fiber, ladle, tea & butter churner, big leaves to dry grains



Indigenous knowledge and practice contribute to conservation of forests and its biodiversity

The extensive ethno-botanical knowledge and use of plant diversity by the Monpas (Table 4.1) has grown from generations of sustainable use and conservation of the biodiversity around them. The multiple use of forest products necessary for the survival of such indigenous people, is an important incentive to improve forest management and ensure sustainability by protecting the resource base against excessive extraction and depletion. This is contrary to the modern forest management practice which values timber as the only major resource, thus failing to recognize the complete value of forests.

The three villages of Wangling, Jangbi and Phumzur serve as protective zone for the accessible natural resources in the BMNP area. The Monpas live in harmony with nature. They derive all their daily necessities from the forest which they harvest cautiously and sustainably utilizing their age-old knowledge of the forest resources and their functioning. During the study, some conflict on resource use were discussed (Figure 4.7, page 129). The conflicts occurred over resources such as the cane and bamboo, *tsamdo* and non-timber forest products. The resource conflict matrix indicates that the Monpas have conflicts with neighbouring villages and people of other dzongkhags and none among themselves. There is no conflict regarding the natural resource utilization within themselves as they have devised a mechanism for sharing, which naturally prevents such conflicts. This is also demonstrated by the various traditional institutions and systems for natural resource management followed by the Monpas, in order to promote equal benefit sharing and ensure sustainable supply of resources as explained in chapter five.

The Monpas have conflicts with outsiders, but the conflict as well as local norms of resolution of such conflicts help towards sustainable use and conservation of resources. If these three Monpa villages did not exist, the resources, particularly cane and bamboo, the most sought-after forest resources in this region would have been depleted due to over exploitation by people coming from other villages and dzongkhags in the region.

Farming System

The three Monpa villages, Wangling, Jangbi and Phumzur, fall within the dry sub-tropical agro-ecological zone. The Monpas practise integrated farming system that includes cereal crops, livestock, citrus orchard and kitchen gardens. They believe that nature is given by a superior power. Hence, numerous rituals accompany farming activities, upholding local culture and knowledge. Their traditional land-use systems integrate crops, livestock, and forest in a sustainable manner. Optimum use of local resources is another notable feature in the indigenous farming system of the Monpa community. Various methods of soil and water conservation are practised, with emphasis on fallowing (shifting cultivation) and recycling of plant and animal waste by organic manuring and composting. The cropping pattern of the three villages in the study area is shown in Figure 4.4.

There is a strong link and interaction between the farm and the surrounding forest, especially concerning cattle management practices. Cattle are grazed in the forest throughout the year. In addition, farmers are known to utilize a vast array of forest plants to meet their household needs. The forest and agriculture in the three Monpa villages is characterized by a substantial diversity and a high degree of

self-reliance. There is also a close relationship between the food-scarce season and the collection of forest foods. The Monpas are highly dependent on forest food during the lean agricultural season, which form an important part of their daily diet. However, changes have been observed in the recent years in the traditional agricultural systems and forest food collection habits of the Monpas. These changes are driven by socio-economic and cultural changes, the conservation policies of the RGOB, and reduced availability of natural resources. Change from subsistence farming of traditional food crop agriculture to cash crop-based agriculture is beginning to be noticed in the Monpa villages.

Agriculture practices

Agriculture is the main on-farm occupation of the Monpas with more than 60 percent of the total population involved in farming. All Monpa households except three households own private registered land and are involved in agriculture. Land is inherited from parents. Two Monpa households have received land from the RGOB as a grant. Average land holding is 2.2 hectare per household.

Land is categorized into different groups depending on its use. *Kamzhing* (dryland) is used for cultivating primarily maize and wheat. The Monpas have an average of 0.8 hectare of *kamzhing*. *Chuzhing* (irrigated land) is another important category of land. The Monpas have an average of 0.7 hectare of *chuzhing*. It was found that 17 percent of households do not have *chuzhing*.



Paddy fields at Wangling village

Table 4.21: Land use and land holdings

Land use type	Land area in hectares
Kamzhing	36.1
Chuzhing	30.1
Tseri	23.6
Tsamdo	654 (private)+ 749 (communal)

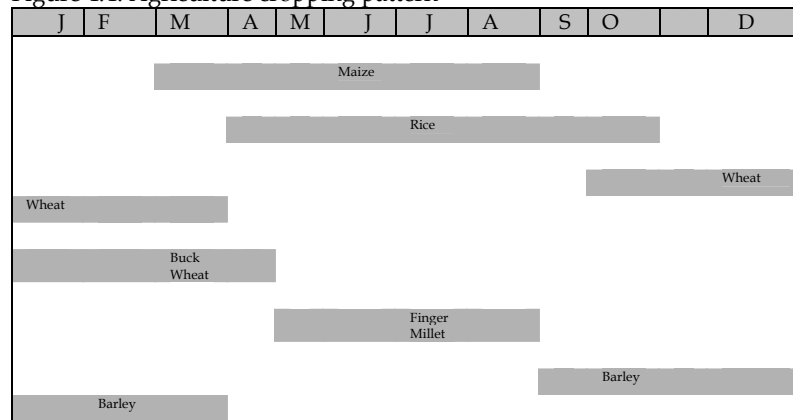
The cropping cycle and type are based on climatic variations. Major summer crops are rice, maize, and millet while wheat, buckwheat, and barley are grown in winter. Rice is the main crop in the irrigated land production system, with some wheat and barley grown in winter. Tall red or white rice varieties are grown following local practices. Cattle manure is by far the most important source of plant nutrient, used by the Monpas who greatly value their livestock for manure production as well as for milk, and other dairy products such as cheese and butter. Additional nutrients are added to the animal waste with lavish use of cattle bedding from the forest or field. This allows most of the nutrients from the livestock urine to be retained in the manure. As cattle migrate from the mountains down to the valley, winter crops are often

inadvertently grazed. Additionally, damage of crops by wild animals was also reported.

Labour utilization and inputs

Average yearly labour input for different household tasks included the following: agriculture (180 days), livestock (90 days), fuel wood collection (30 days), handicraft (30 days) and forest food collection and other works (30 days). The culture of mutually sharing of labour is prevalent in the Monpa villages. Generally, all hard labour work and fuelwood collection are carried out by men. Tasks such as sowing, weeding and harvesting are carried out by women. The head of household and spouse together control and allocate labour requirement and contribution within the households and community. Almost all households own agricultural land and cultivate it.

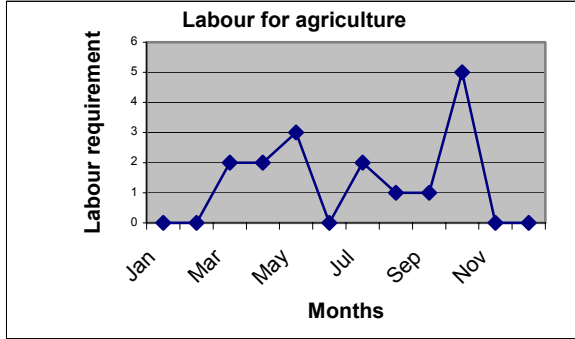
Figure 4.4: Agriculture cropping pattern



Group discussion with villagers demonstrated that maximum labour requirement was felt in the months of October

followed by March, April, May, and June as shown in Figure 4.5. The need for labour during these months is corroborated by the agriculture cropping pattern (Figure 4.4).

Figure 4.5: Agriculture labour requirement



Source: PRA Seasonal calendar

The Monpas also practise *tseri* (shifting cultivation). They have a total of 24 hectares of registered *tseri* land for this purpose, with an average of 0.6 hectare per household (Table 4.21). More than 60 percent of households have registered *tseri* land. Most Monpas find *tseri* better than other types of land-use because, it is less labour-intensive and crop yield is good. On the other hand, *chuzhing* also gives better production but requires intensive labour. The Monpas follow subsistence farming and their staple food is maize and rice. More than 90 percent of the households indicated that rice is the most preferred crop followed by maize. Generally, the choice of crops is determined by the nutritional requirement of crops, socio-economical conditions, and cultural preferences.

The Monpas practise kitchen gardening on a very small scale. The size of the kitchen garden in the three villages is small as compared to other rural villages in the country. The most

commonly grown vegetables are: radish, *Brassica spp.*, pumpkin, chilli, onion, egg-plant, tree tomato, and beans. Limited business knowledge and lack of access to market force the Monpas to sell their surplus agricultural produce at low prices to the traders or shops in Langthil against cash payment or bartered in exchange of food commodities like rice, salt, oil, etc. The traditional barter of agricultural crops or handicrafts is very common among the Monpas.

Tsamdo or grassland is used by the villagers to graze their cattle especially in winter months. *Tsamdo* is either owned by the whole community or by single households with absolute grazing rights. The Monpas have 654 hectares of private *tsamdo* which is completely owned by individual households (Table 4.21). They also have communal *tsamdo* which belongs to the whole Monpa community, and other *tsamdo* that belong to people from outside their village. Some households own as much as 121 hectares of *tsamdo*.

Table 4.22: Land use type by village

Land use type	Wang-ling	Jangbi	Phumzur	Summer crops	Winter crops
Kamzhing (hectare)	10.3	15	10.8	Maize, buckwheat, rice	Wheat, barley, buckwheat, mustard
Chuzhing (hectare)	15.2	9.5	5.4	Rice, buckwheat	Wheat, barley, buckwheat, mustard
Tshoesa (hectare)	0.6	0.5	0.6	chilli, onion, ginger, brassica spp., radish,	brassica, radish, potato, mustard
Tseri (hectare)	5.4	4.4	13.8	Finger millet, buckwheat	Maize, finger millet, buckwheat, rice
Cash crop trees	83 orange	100 orange	42 orange	NA	Orange Cardamom
Tsamdo (hectare)	281	243	130.4	NA	NA

In addition to the traditional farming system, the plantation of cash crops is fast emerging as a progressive system in terms of generation of cash. Two important cash crops of the Monpas are orange and cardamom. However, the Monpas also grow other fruits such as banana, sugarcane, guava, peach and pear mainly for consumption and sometimes also for sale in small quantities. About 65 percent of the Monpa families cultivate orange with maximum households (75%) in Wangling involved in it. All the 16 households in Wangling were involved in cardamom cultivation while a few households in Jangbi (4) and Phumzur (14) cultivated this cash crop.

Table 4.23: Yield levels (kg/hectare) of major crops grown by the Monpas

Season	Crop	Yield national average	Yield Monpa villages
Summer	Rice	2392	1862
	Maize	1358	1240
Winter	Wheat	1123	931
	Buckwheat	883	761
	Finger millet	887	924
	Barley	1100	1050

Source: Author's household survey 2001; CSO 2001 (national yield);

The yield of major cereal crops such as maize, wheat, buckwheat and barley, which account for more than two-thirds of the total cropped area is slightly lower than that of the national average. A more or less similar pattern is seen in the yields of barley and finger millet but the yield of rice varies widely with the national average (Table 4.23). The lower yield of crops could be due to use of local seed varieties, non-use of fertilizers, pesticide and crop damage by wild animals.

All households in Phumzur and Wangling reported food shortage. During the food-scarce season, the Monpas depend

on the forest food, mainly tubers. They also barter handicraft items for food grains from the nearest market (Langthil) or sell their products for cash (Table 4.24).

Table 4.24: Number of households with food grain shortage

village	No. HH with food grain shortage	Food grain shortage coping mechanism			
		Buy from market	Supplement with forest food	Barter with handicraft	Borrow
Wangling	16(100)	16(100)	13(81)	6(37)	10(62)
Jangbi	6(67)	5(55)	3(33)	3(33)	1(11)
Phumzur	15(100)	12(80)	13(87)	14(93)	8(53)

(Percentage in parenthesis)

Determining cropping seasons

It is interesting to note that the sowing time of crops is determined by nature's manifestations, and the farming system is closely associated with local biodiversity. The Monpas believe that call of *Kupthom* (Cuckoo) indicates the time for sowing maize. It is also believed that if *Kupthom* calls at other times, there will be food shortage (crop failure). The time for sowing rice seeds is indicated by the call of *Pengpairung* (Large Hawk Cuckoo). These birds are closely associated to the agricultural cropping pattern of the Monpas.

Additionally, it is sowing time for millet seed when chirpine needles fall down with the wind, and cones are conical in shape. Sowing time of wheat and barley is indicated by the fall of leaves of *Betula alnoides*. Land is prepared in April for summer crops and in October for winter crops. The Monpas believe that black soil is fertile and crops grow well in black soil.

Water Management

Most of the cultivated land is rainfed with little irrigation. Farmers believe “rain” as the indicator for a good harvest. If it rains about two times in the month of January and February, it is a sign of good rainfall for that year. If the mountain peaks do not have snow, it is an indicator of impending drought. The Monpas perform rituals annually at the water source to please the local deity for continued supply of water. Most water sources are culturally protected as they are believed to be the home of local deities (*duth*).

Weed management

Management of weeds is an important agricultural activity and yield of crops and vegetables depends on their efficient management. Weeds compete with crops and vegetables for light, space, moisture, nutrient and reduce crop yield considerably. Weed problems are more serious in the Monpa villages due to heavy rainfall supporting its fast growth. A female farmer from Phumzur expressed concern over the excessive growth and spread of *Eupatorium adenophorum* locally known as “*katakpa*”. This weed was found to grow fast, spread quickly in the field shading crops and result in poor crop production. The most common weed management practices are hand weeding and mechanical methods. Hand pulling of individual weed is a practical and efficient method used in kitchen garden or in smaller areas for eliminating weeds. Mechanical control involves hand pulling, hoeing, tillage, mowing and burning. Burning of naturally matured weeds before land preparation is a common weed control practice. The burnt weed biomass and ash increase soil fertility. Both men and women participate in weeding. It was

reported that barley, buckwheat and wheat, do not require weeding.

Katakpa (*Eupatorium adenophorum*): A weed of concern



Pest and predator management

Wangling, Jangbi and Phumzur are characterized by heavy rainfall, high humidity and mild temperatures that make an ideal environment for the survival and perpetuation of many plant pathogens and pests. However, the pathogen and pest population are under control due to limited land under cultivation and less intensive agriculture, as well as practice of traditional methods of pest control rather than use of chemicals (Table 4.25, page 109). The Monpas have an interesting way of avoiding pests and insects. They believe that if vegetables are planted in the month of September, pests and insects do not infect the vegetables, but, if planted later, the vegetables are highly infected by pests and insects. Pumpkin and beans (climbers) are not grown with other vegetables because they are believed to reduce growth of other vegetables. Generally, if the crops and vegetables are

infected by pests the Monpas perform rituals, apply ash and *Artemisia* plant to repel pests. If problem becomes acute, then they use pesticides as a matter of last resort.

Table 4.25: Indigenous treatment against pests and diseases

Disease	Treatment	Efficacy
cutworm	manual picking	Effective when less
chilli wilt	change site the following season	
trunk borer	application of kerosene into the holes	Effective
Aphids	apply ash and <i>Artemisia</i> plant	
Worm (Kong)	perform puja "Lapsang" for 3 mornings	

Unlike in other parts of the country where potato is widely cultivated, the Monpas reported that they do not plant potatoes because red ants infect the potatoes and harvest is not considered worth the energy invested. Common pests include cutworm, rice wilt, trunk borer, root rot, aphid, and chilli wilt. Besides the pests, most Monpa households also complained of predators such as wild boar, sambar, barking deer, bear, porcupine, and monkey which destroy significant quantities of their crops. When the crop matures and is ready for harvest, people guard the crop day and night until it is harvested.

Soil management

The Monpas use cattle manure and cattle bedding in the field to increase soil fertility. It is believed that, cattle tethered in a land for one year can maintain the soil fertility for three years. The Monpas also grow mustard to increase soil fertility. Sisiseng (*Quercus grifithii*) is believed to increase soil fertility and is retained in the fields. Stone wall and drainage channels are also made to prevent soil erosion.

Biological Wealth



Cattle tethering to increase soil fertility



Harvested paddy field being ploughed for winter crop

Rice, maize and buckwheat give good yield and hence these crops are widely grown. Oxen drawn plough is used for preparing land for sowing. Ploughing is mostly done by men. However, in households that do not have male members, women plough the land. There is no social taboo against women ploughing their land.

Seed selection

The Monpas preserve seed for most of the crops. Improved variety seeds of wheat and rice are bought from the Agriculture Commission Agent in Langthil. Differences in the system of preserving seeds were noted among the three Monpa villages. The Monpas of the Jangbi and Wangling preserve their own seeds except for wheat, whereas the Monpas of Phumzur borrow or barter seeds from neighbouring villages. Among the three villages, Phumzur was found to be less self-sufficient in food grains.

Both men and women are involved in harvesting, processing and storing but women are mostly involved in harvesting crops. Crops and crop variety are selected by both male and female members. However, it was found that female members were extremely knowledgeable about the crop varieties and their characteristics, both the old and newly introduced varieties. One of the local residents of Wangling village stated, "if we do better selection of seed, crop yield is better, but these days, the younger generation does not care to do seed selection and it results in poor yield".

Agriculture and field implements

The Monpas use a variety of locally made tools for their daily farming use. It was observed that women had more

knowledge of agricultural tools, and men used and had more knowledge of the implements used in the forests. A wide range of tools have been developed and used by the Monpas over generations. Some of these tools are described below.

Tools used for agriculture



1. *Kokse* (spade) - to dig soil
2. *Shigula* (smaller spade) - used for weeding
3. *Lageing* (small spade) - to dig wild tubers from forest, also used to dig hole for sowing maize
4. *Sumti* (wooden plate) - used with plough to dig soil

5. *Abu* (oldest tool, sickle) – used for fodder collection
6. *Jhorwa* (sickle) – used to harvest paddy, wheat, millet; (good for cutting field crops from the base of the plant).
7. *Abu* (sickle, new tool) – used to cut bigger herbs/shrubs
8. *Patangla* (big knife) – used to cut trees; knife handle made from *Dendrocalamus hamiltonii* root, knife cover made from *D. hamiltonii* stem
9. *Tachung* (axe) – used to chop firewood, timber for house construction, make plough
10. Plough

Tseri (shifting cultivation)

Shifting cultivation (*tseri*) forms an important part of the agriculture system of the Monpas with more than sixty percent of the households practising it. Although the trend of conversion from shifting cultivation to permanent cultivation is increasing with government discouraging *tseri*, the Monpas feel very positive about *tseri* in terms of energy efficiency and food security. Seventy-six percent of the households expressed that *tseri* cultivation is good for their land because it produces high yield with minimal labour, and burning enhances soil fertility. Only seven percent of the households said that *tseri* cultivation is not good because cutting trees and green vegetation degrades the land and cropping can take place only once in many years.

The Monpas grow maize, finger millet and buckwheat in their *tseri*. Potato and chilli are also grown in *tseri* land. It was reported that yield of potato and chilli is better in *tseri* land and these are not infected by pest and insects as compared to when grown on other types of land. During the monsoon period, increased soil erosion was noticed in permanent cultivated area as compared to shifting cultivation area. This is contrary to the popular belief that one of the main sources

of soil erosion is the practice of shifting cultivation. The Monpas strictly follow the fallow period to maintain soil fertility. Most households (75 percent) maintained fallow period of five to six years. All the Monpa households carry out slash and burn of their *tseri* land before cultivation. The Monpas said that production from *tseri* is good, but fear that they may not be able to continue *tseri* cultivation due to strict national park regulations.



Wheat planted in *tseri*

Tseri cultivation by the Monpas

Cutting and drying of vegetation: After site selection, the standing vegetation is cut and left to dry. The cutting starts in December and the vegetation is left to dry for three months. In the majority of cases, the site is clear felled. Some households retain economically valuable timber trees.

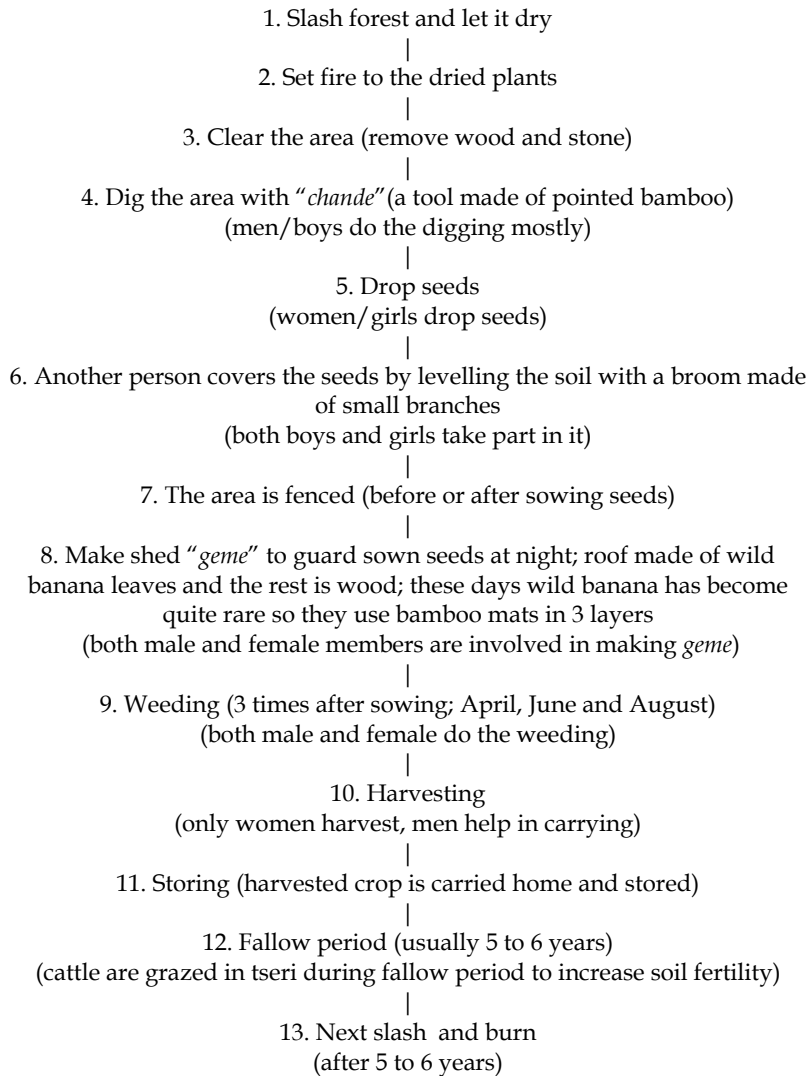
Burning and clearing: Burning is one of the critical elements of *tseri* cultivation. The Monpas pay great attention while

burning the dried vegetation to avoid fire hazards outside their *tseri* land and to achieve maximum burning. The *tseri* owner together with the village *Menyer* (village forest guard) and a few villagers organize the burning operation. It is believed that successful burning results in minimal growth of weed, increases soil fertility and crop yield. The unburnt wood is left at the site to decay or is carried home for use as firewood. Mushrooms are found to grow on the decayed wood which is harvested for consumption.

Sowing, weeding and protection of the crop: Sowing is done immediately after burning with no soil preparation. The Monpas believe that the heat of the ash helps fast germination of seed. The soil is dug with a tool made of pointed bamboo (*chande*) and seed is dropped into the hole and covered with soil. Some Monpa households also fence their *tseri* land if the site is small in area, to protect it from wild animals. The seed is protected from birds and wild animals until it germinates and seedlings are established. A small shed is made at the site and household members guard the crop day and night against birds and wild animals. The Monpas reported increasing crop depredation by wild animals such as wild boar, monkey, sambar and bear.

Fallow period: The Monpas strictly follow the fallow period of five to six years between two cultivations. During the fallow period, the farmers graze their cattle in their *tseri*. This also enhances fertility of the land. Plants such as *Artmesia spp.* and *Cannabis spp.* grow in plenty in the *tseri* land, after it is kept fallow for a couple of years.

Figure 4.6: Steps followed during the process of *tseri* cultivation



The Monpas follow two types of *tseri* cultivation. One type is the slash and burn of *tseri* land with bigger trees. The big trees are felled, and are either collected for fuelwood or left in the field to decay. Mushrooms grow on these decayed trees providing the much-needed additional nutrients for the family. In this type of *tseri*, different crops are cultivated continuously for four to five years after which a fallow period of up to 12 years is maintained allowing the land to regain soil fertility. In the other type of *tseri* with small trees, bushes, and shrubs, the vegetation is slashed and burnt. Crop is cultivated for two subsequent years after which the land is kept fallow for a period of five to six years or more.

Table 4.26: Social performance relating to shifting cultivation

Indicators	Before the park rules were enforced	Now(2001)	Future
Trend of increase/decrease	Tseri was practised extensively in their private tseri land, and sometimes also extended into the government land	The Monpas are practising other forms of land use such as kamzhing, chuzhing and orchard	Decrease in tseri and increase in permanent form of cultivation-kamzhing, chuzhing and orchard; as well as other forms of livelihood such as handicraft
Land use change	Most households depended entirely on tseri production	More tseri land being converted to permanent agriculture and cash crop production	This trend will continue as BMNP management is discouraging practice of tseri and unlike in the past the Monpas face more restrictions

Agricultural biodiversity

The most commonly grown crops by the Monpas are maize, rice, millet, wheat, barley, buckwheat and mustard. Four varieties of maize [*Yangchipa*(1), *Dangphu geyza*(2, 3),

Chempadumbo (4) Photoplate 4.3], three varieties of finger millet [*Makong*(1), *Prakangla*(2), *Losumpa*(3) Photoplate 4.2] two varieties of buckwheat [*Chakama*, *Mhama*], and other crops are planted. Other minor food crops such as *Mudai* (*Amaranthus*), *Hapame* (*Sorghum spp.*), *Shontongka* (*Sorghum vulgari*), *Yangre* (*Fox-tail millet*), and *Sangbo* (*Millet*) were also cultivated. However, the trend is changing.

Other food crops such as beans, soyabean, *Dioscorea spp.* and vegetables are planted in the garden near houses. Crops like large cardamom and orange are grown on a large scale for cash generation. Other fruit trees include guava, banana, peach, pear etc. Ginger and turmeric are also planted on a small scale for home consumption.

Amaranthus



Photoplate 4.1: Sorghum (2 varieties)



Photoplate 4.2: Finger millet (3 varieties)



Photoplate 4.3: Maize (4 varieties)



Wheat grown in kamzhing



Minor food crops

Several minor food crops are cultivated by the Monpas. These crops are mostly grown in *tseri*. Mudai (*Amaranthus*) is cultivated in *tseri*. These days, Mudai is also cultivated near houses in small numbers. It is eaten as food and brewed into local alcohol. Hapame [*Sorghum spp.* Photoplate 4.1(2)] is grown only in *tseri*. Hapame cultivation is decreasing these days and only a few Monpa households cultivate it. It is eaten as food and brewed into local alcohol. Shontongka [*Sorghum vulgari* Photoplate 4.1(3)] is cultivated in *tseri*. They are also grown near houses and in *kamzhing*. Shontongka is fermented and brewed into alcohol. Yangre (*Fox-tail millet*), two varieties, black and white, are cultivated. Sangbo (*Millet*) is grounded and cooked into porridge.

Table 4.27: Important crops and fruit trees cultivated by the Monpas

Field Crops	Botanical name	Sowing time	Harvesting time
Maize	<i>Zea mays</i>	Mar	Aug
Rice	<i>Oryza sativa</i>	Apr	Oct
Finger millet	<i>Eleusine coracana</i>	May	Aug
Fox-tail millet	<i>Setaria italica</i>	May	Aug
Wheat	<i>Triticum aestivum</i>	Oct	Mar
Barley	<i>Hordeum vulgare</i>	Sept	Mar

Biological Wealth

Field Crops	Botanical name	Sowing time	Harvesting time
Sweet buckwheat	Fagopyrum esculentum	Jan	Apr
Bitter buckwheat	Fagopyrum esculentum	Jan	Apr
Sorghum	Sorghum spp.	Sept	Feb
Legumes and vegetables	Botanical name	Spices	Botanical name
Soyabean	Glycine soja	Ginger	Zingiber officinale
Bean	Phaseolus sp.	Large cardamom	Amomum subulatum
Dioscorea	Dioscorea spp.	Turmeric	Curcuma longa
Tree tomato	Lycopersicum esculentum		
Radish	Raphanus sativus	Fruits	
Pumpkin	Cucubita moschata	Orange	Cirtus reticulata
Mustard leaves	Brassica gentia	Guava	Psidium guajava
Egg-plant	Solanum lycopersicum	Banana	Musa spp.
Turnip	Raphanus repa	Peach	Prunus persica
Onion	Allium cepa	Pear	Pyrus pashia

Trend in agriculture practice

Shifting cultivation to permanent cultivation: In the past the Monpas of these three villages practised only *tseri* cultivation and maintained large areas of *tsamdo* (pasture). Later they began to adopt permanent cultivation, mainly dryland (*kamzhing*) farming. In 1983, the Royal Government introduced irrigated land (*chuzhing*) cultivation in these three Monpa villages. The Monpas were trained to prepare their land, irrigate it and plant rice. The Black Mountain National Park was established in 1995, and the three Monpa villages fell within its buffer zone boundaries. After 1995, there has been strict enforcement of forest rules and regulations and people have been discouraged to practice *tseri* which has resulted in increased practise of permanent cultivation.

Subsistence farming to cash crop based farming: The traditional crop diversity of these three Monpa villages is slowly coming under threat. In the past, crops such as maize (4 varieties),

amaranthus, sorghum (2 varieties), fox millet, millet, buckwheat (2 varieties), finger millet (3 varieties), and mustard were cultivated. Of late, crops such as rice, maize, wheat, millet, buckwheat, barley and mustard are grown. This demonstrates that earlier the Monpas cultivated a variety of crops including the minor food crops but subsequently the diversity of crops has been reduced and the Monpas have begun to discard the traditionally cultivated minor food crops. The changing pattern of *tseri* to permanent type of cultivation is one of the main factor resulting in the change of crop diversity. *Hapame* (*Sorghum spp.*) which grows only in *tseri* land is already discarded by the people and may be lost in a few years time.

Maize (*Yangchepa*, *Sharshokpa* variety), wheat and rice are the new crops that have been introduced recently. The Monpas prefer rice and maize because they have now become the staple food. At the same time, it was reported that since rice is preferred by monks during religious ceremonies, they have to keep rice at home. Among others, *Amaranthus* and mustard are crops that used to be grown widely. Vegetables grown in the past were pumpkin, beans and chilies. The newer addition are radish, *Brassica spp.*, and egg-plant. Cash crops such as cardamom and orange were introduced on a small scale as early as the 1960s. But the cultivation of cash crop picked up in 1986 when the Royal Government provided free seedlings and extension services to these three villages.

Some changes in the traditional farming systems are already evident. They have also begun cultivation of newer varieties of vegetables.

Table 4.28: Crop varieties cultivated in the past and at present

Crop varieties	Earlier	Now
Rice	Zongkola; Paraka; Kotongmey; Pongzomo; Bumchi lingbo; Chinangmo Kamthe gormo	Bajo karp, Phinangmo
Wheat	Uekar	Zhungkar (RNR supplied)
Barley	Nemar; Nekar	Pedenla (RNR supplied)
Buckwheat	Chakama (sweet), Mhama (bitter)	Chakama (sweet), Mhama (bitter)
Maize	Changrepa (taller variety); Chempa dumbo (for popcorn) Dangphu geyza	Yangchepa (RNR supplied) Sharshopa (short variety)
Millet	Makong; Prakangla; Losumpa	Makong; Prakangla; Losumpa

Traditional agricultural knowledge and its significance

There are a number of current issues facing the Bhutanese agricultural system. Due to increasing population, particularly the non-farming urban population, and the goal of attaining food self-sufficiency, traditional agricultural practices are yielding to new farming systems, crops and varieties, most of which are alien to the country. This will lead to erosion of native plant genetic diversity. The narrowing of the genetic base could pose greater risk of crop failures as witnessed elsewhere in the world. The greater dependence on a few plant species, about 20-30 in the national context, creates the need to conserve the native genetic resources. The indigenous knowledge and practice of seed selection, pest and weed

management, and soil and water management, should be incorporated into modern farming system to boost agriculture production and prevent from pests and diseases.

Animal husbandry

Livestock rearing is one of the most important livelihood occupation of the Monpas. Ninety five percent of the Monpa households rear livestock. Cattle and poultry are the most common in the three Monpa villages. Unlike other rural communities in Bhutan, the Monpas do not rear pigs. Cattle are kept for ploughing agriculture land, manure for crop production, and dairy products. The Monpas graze their livestock mostly in the forests, farmland, and *tsamdo*. Wangling village was found to have the maximum number of cattle.

Livestock rearing

In the land-locked situation prevailing in these three Monpa villages, field crop production occupies the primary position and livestock plays a supplementary and subsidiary role. The principal objectives of maintaining livestock are to fulfill the need for ploughing agriculture land and provide farmyard manure and not much stress is given to improve livestock productivity in terms of meat and dairy products. The dairy products are by and large utilized domestically and the surplus, if any, bartered in the neighbourhood. The livestock is also utilized as the chief medium of disposal of crop residue and agricultural by-products. Though poor in productivity, due to their multifarious utility value, cattle are maintained in substantial numbers. There is no serious attempt to cull the unproductive animals, not only because of sentimental reasons, social customs and taboos but also because, even well

past the productive age, they may provide manure and are used in ploughing agriculture land.

Most cattle are grazed and kept in the forest. Only milking cows are kept at home. Bulls are kept at home during ploughing season. It was reported that livestock population, particularly cattle, has reduced significantly in the recent years due to lack of fodder and labour shortage. But recently, poultry population has increased due to its demand for eggs, mostly bought by staff of school and the Basic Health Unit in Jangbi.

Feed and fodder management

More than 25 species of trees are used by the Monpas for fodder (Table 4.13). The commonly used fodder trees are *Ficus spp.* The Monpas prefer fodder trees that produce milky sap as they are believed to produce more milk from their cow. About 80 percent of the fodder requirement is met from forests and the remaining 20 percent is met from the agriculture fields and *tsamdo*. Most households supplement fodder with other animal feed such as kitchen waste, *ara* or *bangchang* residue and wheat and maize flour, for the cattle that are kept at home. Fodder trees are kept in the agriculture fields and *tsamdo* as fodder banks to feed cattle during winter when the ground forage is scarce. Rice, wheat and barley straw are also stored as cattle forage for winter.



Cattle forage (rice straw) stored for winter

Livestock health

Livestock diseases are usually diagnosed by household members and treated accordingly. These skills are learnt from parents or grandparents. Occasionally, traditional healers also diagnose and treat livestock diseases. The traditional healers do not receive cash but are compensated in kind - usually rice, and offerings like food, local wine and vegetables. The Monpas also take services from the local livestock extension agent. The nearest livestock extension office based in Tongtongphe is more than two hours walking distance. The most common livestock diseases reported by the Monpas are foot and mouth disease, black quarter disease, diarrhoea and liverfluke infection. The indigenous treatment of livestock diseases practiced by the Monpas are given in the following table.

Table 4.29: Indigenous treatment against livestock diseases

Disease	Animal	Treatment	Efficacy
Foot and mouth disease	cattle	Mix buckwheat flour, honey, mollasses/sugar, Jamirip (chinese medicine) and feed cattle; also tethered in windy slope	Effective
Diarrhoea	cattle	Cardamom seed is ground and mixed with water and fed	Effective
Black quarter disease	cattle	Mix soap, mongoose meat, wild cat meat and grind. Feed this mixture to cattle	Effective
Liver fluke infection	cattle	"zhacho" boiled in water and feed cattle	Effective; cattle become healthy
Blood flowing out from nose (mostly bitten by leech)	cattle	Give water to the cattle to drink and leech comes into the water	Effective
Eye disease	cattle	Local onion and white stone powder mixed and blown through a small bamboo pipe into the infected eye	Effective

Traditional veterinary medicine plays an important role in treating livestock ailments in the Monpa community. Local methods offer simple and familiar use of locally available resources. Since the nearest Monpa village is about two hours walk from the road-head and livestock extension office, ethno-veterinary practice is still the only option for delivering health services to their domestic animals.

Livestock population trend

Forest cover is abundant around Wangling, Jangbi and Phumzur villages. However, the Monpas stated that fodder is decreasing and it takes longer time than before to collect one backload of fodder. This opinion varied from household to household. Some attributed this to the fact that currently more cattle are kept at homes than in the past.

For the cattle kept in the forests, a male member of the household takes care of the cattle. He milks the cow, makes cheese, butter and reaches the items home once a week. Those households which cannot afford a cow-herder provide food to another household's cow-herder to take care of their cattle. Cow-herders live in temporary sheds in the forest and take care of cattle. These days, this trend is changing and more and more cattle are kept at the farm nearby the houses. This is to provide milk and milk products to outsiders (staff of school and Basic Health Unit). At the same time, more households are taking up permanent agriculture (*chuzhing* and *kamzhing*) as compared to *tseri* and therefore cattle manure is required to maintain soil fertility of these fields.

Tsamdo (pasture) and its use

Tsamdo is regarded as a very important resource, since the majority of the Monpa households rear cattle. All the Monpa villages have both communal as well as private *tsamdo*. The three Monpa villages have 654 hectare of private *tsamdo* and 749 hectares of communal *tsamdo*. Only 22 percent of households have their own *tsamdo*. Those households which do not own *tsamdo* graze their cattle in communal *tsamdo* or *tsamdo* owned by other households and follow local regulations for its use. For using others' private *tsamdo* the user has to provide manual help such as making the cow-herder's shed in the forest, taking cattle to the forest and, sometimes paying Nu. 100 as annual tax to the government on behalf of the *tsamdo* owner.

Migration of cattle from the higher altitudes to lowlands in winter is prevalent in the Monpa villages. After the 8th Bhutanese calendar month (September), the Monpas bring their cattle from highland forests to their *tsamdo* around the

villages. The cattle remain in these *tsamdo* for about four months. The Monpas are also allowed to graze their cattle in the Indocholing *tsamdo* provided they offer whatever the owner of the *tsamdo* demands, such as: portering, edible cane shoot, *damru*, vegetables, and handicraft as tax every year. Although cattle numbers in these three Monpa villages are relatively low, it is important to study trends in the herd size, seasonal movements including grazing rights because there is high influx of cattle migrating from Bumthang to the three Monpa villages. Cattle depredation by wild animals, particularly by leopards and wild cats, is very common in these three Monpa villages.

Tsamdo is an important and highly contested resource in all the three Monpa villages. While Phumzur has only 130 hectares of *tsamdo*, Wangling has 666 hectares. On the other hand, Jangbi has very large *tsamdo* 607 hectares considering the small number of households in this village. There is a patron-client relationship in Jangbi and Phumzur that is determined by the *tsamdo* ownership pattern. In Wangling, there is continuous conflict over access to the *tsamdo*. During the winter season, cattle herders from Bumthang migrate to lower valleys and graze their cattle in Wangling and Phumzur area. Given that about 95 percent of the Monpa households own cattle, it becomes difficult for the local people to share their private and communal *tsamdo* without compromising its quality. This puts pressure on the resources and also at times leads to conflicts between the cattle herders of Bumthang and the Monpa people (Figure 4.7). Besides pressure on *tsamdo*, excessive grazing also leads to degradation of nearby forests, which in turn affects the availability of minor forest products for the people of Wangling, Jangbi and Phumzur.

Figure 4.7: Resource Conflict Matrix

Resource	Within Monpa community	With neighbouring villagers	With neighbouring districts	Government
Bamboo, cane				
Resin				
Tsamdo				
NTFPs				

5

**TRADITIONAL MANAGEMENT OF NATURAL
RESOURCES**



TRADITIONAL MANAGEMENT OF NATURAL RESOURCES

Traditional institutions and systems of natural resource management

While recognition of community-based natural resources management is relatively recent in the RGOB's forest policy, its concept and traditions are deeply rooted in Bhutan's culture and history. This study captures and highlights some of the traditional beliefs and practices of forest management practiced by the Monpa community for centuries.

***Menyer* (Village Forest Guard)**

Before the Forest Act came into force, most of the forests in the three Monpa villages were managed by the community through the institution of *Menyer*. The *Mang*, households of a village, would appoint the *Menyer* on an annual or biannual basis. The *Mang*, mainly the village elders, made most of the decisions and defined the function of the *Menyer*. The *Menyer* was delegated the authority to ensure that everyone had adequate firewood and construction timber. He was also empowered with the responsibility to enforce *Reedam* (prohibition of forestry activities, including extraction of bamboo, and grazing during summer). The *Menyer* was paid in kind and exempted from the obligatory service to the community. When the first Forest Act was passed in 1969, the institution of *Menyer* was nullified as all non-registered forest was declared as state property.

In 1995 after the establishment of the Black Mountain National Park, the system of *Menyer* has been revived with major modifications. A local person is identified, trained and

appointed as *Menyer* by the park management. He is paid Nu. 1500 per month by the park and he covers the three Monpa villages - Wangling, Jangbi and Phumzur. He regulates firewood, timber, cane and bamboo collection, monitors wildlife poaching and encroachment of forest land by villagers. He also monitors outsiders harvesting forest produce from their area. Most Monpas feel that this system is good, because forest resources are conserved and everybody within the three villages has equal access to the resources. However, a few people do not like this system of regulation.

If someone in the village violates the rule, the *Menyer* discusses with the *Mang* to settle the matter. However, if it is not resolved, he reports the matter to the BMNP ranger who verifies the issue and fines the guilty. In most cases, people accept the *Menyer's* verdict. In case of forest fire, he has to mobilize local people and extinguish the fire. The person responsible for setting the fire is identified and fined as per the regulation (Nu.1000 for damage of one acre of forest area). In case of forest fire, the BMNP authorities enforce regulatory actions.

***Chunyer* (Drinking Water and Irrigation Water Watchman)**

The concept of *Chunyer* evolved in a manner similar to that of *Menyer*. The *Chunyer's* responsibilities are making sure that the traditional rights to drinking water are respected by all households, and to ensure proper distribution of water for irrigation among the landowners. The local community authorizes him to arbitrate in minor disputes among the irrigation canal owners. Unlike in the case of forest products, property rights over water are strictly enforced. The irrigation canal ownership pattern is based on land ownership and is location-specific. The expansion or conversion of the paddy-

field from other land uses requires the endorsement of the existing canal members. In case of agreement by the members, the new member would have to pay an equivalent amount in terms of labour expended by other existing members. The *Chunyer* is appointed by the *Mang* and receives no financial compensation. His input is considered as service to the community. This system has been modified after the establishment of Rural Water Supply Scheme in 1990 in Phumzur village and, in 1996 in Wangling and Jangbi villages.

***Shingnyer* (Agriculture Crop Damage Arbitrator)**

In case of crop damage arbitration, each village selects one person with a high degree of integrity, to arbitrate disputes. This person is called *Shingnyer*. His responsibilities include declaring the agricultural season's commencement. This is done by going from house to house, usually in March, and informing the household of the enforcement of the regulation for the season. From this day on, compensation and fines for crop damage by the cattle become effective. The mode of calculating compensation and litigation seem to be both practical and logical. When cattle have damaged an agricultural crop, the landowner requests the *Shingnyer* to inspect the field and make an assessment of the damage, which is done in the presence of the cattle owner. The methodology to be used for the damage assessment is jointly agreed among the three individuals, i.e. landowner, cattle owner and the *Shingnyer*. For instance, in case of paddy, the numbers of clumps are counted. During harvest time, paddy is harvested from an equal number of clumps from the cattle owner's field and the landowner is compensated with the same quantity. There are occasions when the job of *Shingnyer* can become complicated. Among the acceptable proof required to charge someone for crop damage, the cattle should

either be tied up at the damage site or witnessed by a third party. However, people generally accept the verdict given by the *Shingnyer*.

Reedam (Traditional Forms of Sanction)

The enactment of the Forest Act in 1969 saw a major change in the way in which forest resources were appropriated, both for commercial and domestic consumption. Prior to this period, it was not considered an offence to harvest any forest resources for one's own use without formal sanction from the state, with the exception of hunting endangered species. However, the Monpas developed their own informal restrictions on forest-use and sanctions for any breaches. These local systems and sanctions are followed religiously by all households which have contributed to sustainable resource utilization and conservation.

Some examples of such traditional sanctions include:

- Adhere to the closed season for bamboo, cane, fern, mushroom, orchids, and wild tubers. Harvesting these forest products during the closed season is strictly prohibited by the local community and people follow this regulation sincerely.
- Protected life cycle stages for bamboo (which includes shooting and young stage)
- Follow selective harvesting:
 - Cane - only best quality and required type of cane is harvested;
 - Fern - only edible young shoots are collected;
 - Firewood - only dead/injured/deformed trees are harvested.
- Villagers are allowed to harvest a maximum of ten number of *patcha* at one time. The Monpas believe that harvesting young cane shoot can be harmful to the plant because of its low regeneration capacity.

- Fodder is not collected from forest in summer season (May to September) to allow fodder trees to regenerate.
- Trees nearby water sources, big boulders, cliff and ridges are believed to be home of local deities and protected to avoid sickness and misfortune.
- People from other villages are not allowed to collect forest products from the Monpa villages.

These local sanctions on forest resources are not reflected in formal manner in any legislation. This may be attributed to the religious and cultural belief that has been in practice for generations. Whatever the interpretation, in actual practice, it is very functional. In summer, forest operations, especially harvesting, are likely to cause more environmental damage than during the dry season. The same holds true in case of grazing by cattle. It was also reported by a few elderly Monpas that although they have local regulations for sustainable harvesting of resources, they are unable to control collection of these resources by the migratory herders from Bumthang.

Species of cultural and economic importance

As outlined in chapter three, *Bonism* is the main religion of the Monpas. Preserving the environment, sacred and natural heritage sites are an important and integral part of *Bon* value system.

Large trees, rocks (a few were identified by their ancestors in the past) are considered the domains of the local deities, *sadag* and *nye*. Trees play a major role in the rituals of purification through fumigation. The Monpas offer incense to their deities. The local plants used by Monpas as incense are *Cupressus cashmeriana*, *Canarium spp.*, *Citrus spp.*, *Cinamomum*

grandiliferum, and *Aquilaria agarlocha*. Other plants used while performing rituals or for decoration are: *Rhododendron arboreum*, *Gaultheria fragrantissima*, *Oroxylum indica* etc. Of all these plants, *Oroxylum indica* is highly valued. The sword-like fruits mature during winter and contain white papery-winged seeds. It is a sacred form of flower, and is essential while performing any rituals. Although these sacred species are used for performing rituals, there is no special spiritual attachment to these species. They are treated just like any other plant species while using them as firewood or for other purposes.



A Monpa woman offering incense (*Rhododendron arboreum*) to deities

During discussions with the Monpas, it was found that besides the above sacred plants, certain species of plants had cultural and economic value such as: *Gautheria fragrantissima*, *Quercus glauca*, *Quercus grifithii*, *Juglans regia*, *Schima wallichii*, *Pinus roxburghii*, and *Toona ciliatta*. These trees are not cut at a young stage but allowed to grow naturally in the fields to increase soil fertility, supply timber and fuel wood. *Rhododendron arboreum* is culturally valued because its flowers can be offered to local deities. *Aesandra butyracea* and other vegetable oil producing trees are valued for their use.

Culturally valued species and their ecological importance

The *Sisiseng* (*Quercus grifithii*) growing in the field including *tseri*, are culturally valued and protected by the Monpa people. Based on intuitive experience, the Monpas believe that this species does good to the crops by increasing soil fertility. It grows naturally in the fields, and makes good humus. *Sisiseng* is culturally valued also because the Monpas have a legend which is linked with this tree species.

"Once upon a time, the world was flooded with water. One of the lineage of Monpa, Takza, made a big hole in the Sisiseng tree to protect himself from the flood. Dungza, from another lineage of the Monpa, came to know about it and wanted to see the hole. Once he saw the hole and entered it, he refused to come out. Later, all people of the world died flooded with water. The Dungza lineage survived and is believed to be the ancestor of the present day Monpa, as he protected himself in the Sisiseng tree. This tree species is valued by the Monpas till today".

Oak (*Quercus spp.*) also plays an important role as an organic residue in sustainable soil fertility maintenance and the oak forest ecosystem plays a critical role in soil moisture retention outside the monsoon period. Linking ecological and social

processes is crucial for appreciating the relationship between biodiversity and ecosystems function and to utilize this relationship for human welfare through sustainable management of resources. There is greater realization now that the tree species which are socially valued often have keystone value in the ecosystem. However, the role of socially selected ecological keystone species within natural forest ecosystems in conserving and enhancing biodiversity, and indeed manipulating ecosystem function, is a critical area which has not been adequately explored. Keystone species play a crucial role in biodiversity conservation, through key functions that they perform in an ecosystem; often they are also socially and culturally valued. Therefore, they could be used for not only managing pristine ecosystems, but also for building up biodiversity in both natural and human-managed ecosystems, through appropriately conceived rehabilitation strategies that will ensure people's participation [Ramakrishnan 2001].

Sacred groves

During the discussions, it was learnt that there are many sacred groves in the three Monpa villages. It is taboo to damage or cut trees from the groves considered sacred, as these are considered domains of local deities locally termed as *duth*. Similarly, big rocks and trees identified by the ancestors are also considered domains of local deities and not to be harmed. It is believed that if sacred groves are damaged, the people will suffer from illness and misfortune. All the three villages offer annual rituals to local deities (*sadag*) to prevent landslides, particularly at water sources. Most of these groves are also water catchment areas.

Wangling: In *Wangling*, the major sacred groves are: *Remdang duth*, *Domtongma duth*, *Tharbi duthmo*, *Selengbi duth*, *liebi duth*, and *Keplung seng*. Among all these *duths*, *Remdang duth* is considered to host a strong deity and disturbance to this area is strictly avoided by the local community.

Jangbi has the highest number of sacred groves. The major sacred groves in *Jangbi* are: *Krong duth*, *Khepamong duth*, *Sapung duth* (forest below the *Lhakhang*), *Kiplungsen duth*, *Wamkhey duth*, *Tadungla duth*, *Ngokshila dzong* (rocky cliff), *Ngokshila chigong duth*, and *Basem duth*. Among all these *duths*, *Kiplungsen duth* is considered the abode of the highest deity and disturbance to this area is avoided by the community.

At *Sapung duth* area, there is a big sacred tree. Cattle are grazed but no trees are cut in about two hectares of the land area. Local people perform rituals twice a year to this deity (in summer and winter). First crop and *bangchang* made of first cereal are offered to this deity. This ritual is performed only by *pawo*.

In the *Wamkhey duth* area, cattle can be grazed, however, no trees are cut for fodder, firewood, timber. It is believed that people who cut the trees from this forest suffer from aches and pains. A key informant and village elder narrated that when he was young, he had cut a tree for cattle fodder and he fell sick. He claims to have suffered from backache, body-ache and he felt like an old man and was unable to move.

Phumzur: In *Phumzur*, the major sacred groves are: *Wangthangang*, *Pemthang*, *Plamthang duth*, *Nimbangchhu duth*, and *Rimcha duth*. Among all these *duths*, *Plamthang* (cane/bamboo forest) and *Nimbangchhu duth* are considered

the abodes of strong deities and disturbance to the area is avoided by the community.

It is worth mentioning that this small population that lives in very intimate harmony with nature has a number of sacred groves and sites. Their belief as well as practice of protecting these sacred sites by preventing felling of trees or other intervention, goes a long way in managing the much-needed water resources. Natural Resource Map (Annexure) of each village shows the location of sacred groves, *Tsamdo* and source of other forest products.

It has been observed that, unlike in many other villages in the country, beliefs, traditions and the culture of the Monpas have been highly instrumental in conserving the forests and natural resources of their villages. In an environment of rapid social and economic transition, it would be important to assess whether the values and traditions and their positive impact on the natural resources will still continue to exist in years to come. Are these beliefs by themselves enough to conserve these resources?

Resource use and rights of the indigenous peoples

Bhutan's forest policy places strong emphasis on conservation above all other considerations. However, it still allows people to practise their traditional use of forest products. The RGOB policies related to collection and use of some non-timber forest products have been less stringent and more considerate in areas of isolated and marginalized pockets of population such as the *Monpas*, *Khengpas*, *Lhops*, and *Brokpas*. In recent times, some of these policies and relaxation on the utilisation of forest products have changed due to designation of forests as protected areas and biological corridors which now

comprise more than 35 percent of the country's total area. A few examples of government notifications which reserve the rights of the local people to use forest resources are cited below:

November 7, 1978: The Royal Government decided that villagers in the Phuntsholing (*Lhops* in Taba and Dramteb) area could collect bamboo and cane without paying taxes or royalties. This was to encourage production of handicrafts for sale and domestic use.

May 7, 1979: The Government gave Mongar and Zhemgang villagers (*Kheng*) permission to transport "*bangchungs, palangs*" and other forest products made of bamboo and cane anywhere, as long as they were for gifts, and not for sale.

September 2, 1984: To encourage handicraft production, the government allowed Dhrumjar (*Mempa*) Trongsa villagers to collect bamboo and cane for sale or domestic use without paying taxes or royalties.

Forest management trends: traditional practices, rights, and policy interventions

Prior to the enactment of the Forest Act in 1969, the Monpas had free access to the forest resources. The people could harvest forest resources without any restriction from the Government. However, it is interesting to note that they had traditional institutions and systems of forest management in place which served as a control mechanism against over extraction of forest resources as well as for equitable sharing of resources among the villagers. Traditional systems were also in place to take care of conflicts arising from the use of forest resources within their community.

In the past, each household identified and marked trees for timber, oil seeds, beehives etc. and informed others in the community. Once a household identified a particular resource, other households were not allowed to harvest those trees and products. The same system applied for *tseri*, that is, an area identified and cultivated by one household was not utilized by another household. This tradition has been passed on and maintained for generations. In case of breaches of this traditional regulation by any household, the offender is punished by the community and has to seek *shamda* (pardon) by offering *chang* (local wine) as well as meat to the original claimant of the natural resource.

Before the establishment of the Black Mountain National Park in 1995, the Monpas practised *tseri* extensively in their own land as well as in the government land. They also harvested honey from the forest. Honey was harvested and sold in the border town at Gaylegphug. There was no government restriction on the collection of honey from the forests. Collection of timber and firewood for household use was easy, as the Monpas were not required to take permits or pay royalties to the government. Until 2001, the Monpas were exempted from paying royalty for harvesting cane and bamboo. Since November 2002, the BMNP management has declared a complete ban of resin tapping. This has led to some discontent among the Monpas on the strict Forest Rules. However, they also expressed their views on both the positive and negative aspects of the implementation of this policy.

Forest was declared as state property in the year 1969. Since then, *tseri* cultivation has been banned in government land. A permit is required to harvest timber. The Black Mountain National park was declared as a national park in 1995. This policy was put in place to maintain at least 60 percent of the

total land area of the country under forest cover, with nature conservation given priority over extraction and utilization of natural resources for economic gains [NCD 2001]. Since then, the rules and regulations of Forest and Nature Conservation Act of 1995 are applicable for the protection and management of the park.

Non-timber forest products can be accessed and harvested by all. Without rights to ownership and use, communities are not encouraged to manage natural resources in a sustainable manner. The government policy aimed at control of forest use and management often undermines the authority and effectiveness of local institutions at the community level for forest management. Resource management will not be sustainable with people excluded from it. If a policy exists which permits local user groups to collect NTFPs from the forests, they would be motivated to manage and sustain communal forests for long-term.

Implication of policy interventions on local resources, BMNP conservation, and the livelihoods of the Monpa people

The Monpas believe that following the strict implementation of park regulations there is an increase in the tree and bush cover in the region. The area witnessed increased wildlife population (wild boar, bear, monkey, sambar and deer) which also resulted in increased crop and livestock depredation.

Some of the positive impacts of Forest Regulations expressed by the Monpas are as follows:

- The number of Chirpine trees increased due to decreased forest fire from *tsamdo*, *tseri*, as well as non-use of forest land for agricultural purpose;
- The forest area increased, due to the change in agriculture pattern from shifting cultivation to permanent cultivation; and,
- Barking deer, sambar, monkey and wild boar numbers have increased because hunting is prohibited.

Some negative impacts of Forest Rules expressed by the Monpas are as follows:

- *Elatostema platyphyllum* (*damburu*) and mushroom are decreasing (eaten by Himalayan Black Bear and other wild animals as their numbers are increasing);
- Timber and firewood have become less accessible to people; and
- NTFPs are not allowed to be harvested freely as in the past.

This is also emphasized by the statement from a key informant that, “*In some cases, it is good to follow Forest Rules as it helps the environment, but in some cases it is not good, as it prevents local users from collecting forest produce*”. The recent changes in the government policies, as well as the area falling under the buffer zone of the BMNP and its new regulations, have reduced the Monpa people's natural ownership of the resources. This can be a deterrent to its conservation in the long run.

Although more than 60 percent of the Monpas practise agriculture, their main source of cash income is handicraft followed by resin tapping. Handicraft is the main source of cash income with 57 percent total cash generation. Resin tapping, though practiced by a relatively small population is another 23 percent of cash generation. Most people of Phumzur weave handicrafts whereas majority of the people from Wangling tap resin, for income. Each household of

Wangling village earned about Nu. 4,000 to 6,000 in a season from sale of resin (2001). Besides handicraft and resin, sale of cane shoot, betel leaf, fern, dambru, mushroom and avocado also provides the required cash for the Monpa households.

With 89 percent of the Monpas saving less than Nu. 1000 (US\$ 20) a year, the new policy of completely banning resin taping, and restricting the harvest of cane and bamboo and other NTFPs will significantly reduce the source of income for the Monpas and further minimize their purchasing power of the essential goods such as clothes and food. Such policy changes highlight the need to provide alternative sources of cash generation for the people of Jangbi, Wangling and Phumzur.

6

CONCLUSION AND THE WAY FORWARD



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Conclusion

The Monpas are one of the many communities in Bhutan whose livelihoods depends on the forests around them. The far-sighted environmental policies and legislations of the RGOB has made it possible to maintain more than 70 percent of its land under forest cover. While a lot of emphasis has been given to protection of nature, a study such as this shows that the national policies and legislations may sometimes undermine the centuries-old local traditions and practices that are based on sustainable resource use. It is important that formulation of policies and legislations should take into consideration the local practices and build upon them.

With the Monpa villages falling under the park boundaries and owing to strict enforcement of park regulations, the majority of the Monpas feel that their resource use rights have been compromised. This in the long run will not only jeopardize the conservation objective by creating negative attitudes towards conservation, but may further marginalize the communities by minimizing their livelihood opportunities. The complete ban of resin tapping since 2002, is one such example. While this may be a positive initiative for protecting the Chirpine forests, adequate alternative options should be explored and discussed with communities before such regulations are enforced.

Having said this, the RGOB policy to maintain atleast 60 percent forest cover for all times will go a long way in preserving the environment which is not only a source of national revenue (through hydropower generation, eco-

tourism etc.) but also needed for the survival of communities such as the Monpas. However, careful planning and management of the forests should be done such that there is equitable sharing of benefits arising from this valuable resource.

Another important issue that is highlighted in this study is the conflict with the outsiders for resource use. Conflict over resource use is an important indicator of resource stress or degradation. It is important to identify such conflicts over resources and come up with suitable solutions and legislations in consultation with the resource users. This will prevent accumulation of such conflicts and potential degradation of the resource-base.

Finally, while we take pride in the history and rich culture of indigenous communities, such as the Monpas, we also notice an increased assimilation of these communities into the national mainstream – mainly the language, dress and religion which make important part of their culture. While this is evident in any developing community, development policies should encourage and support the local culture and build on it. Environment should be created such that the indigenous communities take pride in their culture rather than feel left out of the so called development process.

The way forward

In spite of a great deal of publicity and growing awareness about deforestation, destruction of forest still continues. Ten years ago, the UN Conference on Environment and Development in Rio de Janeiro called for increased attention to be given to concerns of indigenous peoples. The same was reiterated at the World Summit on Sustainable Development

at Johannesburg in 2002. At this hour, when world leaders have pledged to halve poverty and hunger by 2015, there is an even greater need to document, conserve and utilize the indigenous knowledge systems for the well-being of humankind. Tribal cultures are the treasure-house of indigenous knowledge systems which are built through trial and error over centuries, and most of the practices have sound scientific basis, which need to be studied and analyzed.

Documenting such knowledge provides a basic platform for formulating policies which may lead to sustainable development in any country. Development of the indigenous communities can be achieved by increasing opportunities for them. Otherwise, how can traditional knowledge be valued and conserved within the native society, if, such knowledge offers little or no economic benefit to the indigenous peoples? Ethno-biologists have a great role to play by rescuing disappearing knowledge. If such knowledge can be conserved, it can help us in understanding the linkages of cultural and ecological systems, help to maintain a sense of pride in local cultural knowledge and practices and reinforce links between communities and the environment which is crucial for conservation. There is a delicate relationship between the stability of the forest ecosystem and the culture of the inhabitants. The invaluable role of indigenous peoples in the conservation of natural resources should be recognized. National policies should preserve customary traditional practices and protect indigenous property, including ideas and knowledge. The traditional knowledge and resource management practices of the indigenous peoples should be integrated with modern development strategies while ensuring benefits to these people. These benefits in return become the incentive and motivation for the local people to conserve the resources.

A survey in central Bhutan found that the households used more edible plants fifty years ago than at present [Christina 2000] which explains the change in the harvest and use of wild edible plants as well as the loss of knowledge about them. Another study in eastern Bhutan mentioned that, the rural population of Radhi consider people collecting edible plants from forest as of lower social status [Wangchuk 1998]. Likewise, even in this Monpa community, knowledge of plants and their use is slowly disappearing as explained by the different trends among the three Monpa villages. Following the gazetting of the Black Mountain National Park by the RGOB and the three Monpa villages falling into the buffer zone of the park, implementation of stricter regulations on the use of forest resources has occurred. It is expected that the Monpas will gradually reduce their reliance on the forest and its products. With this, it is feared that this important knowledge base will weaken and it can be lost altogether. It is vital to document this knowledge, as done partly by this study, do further research into areas of importance, and build strategies that are suitable and sustainable.

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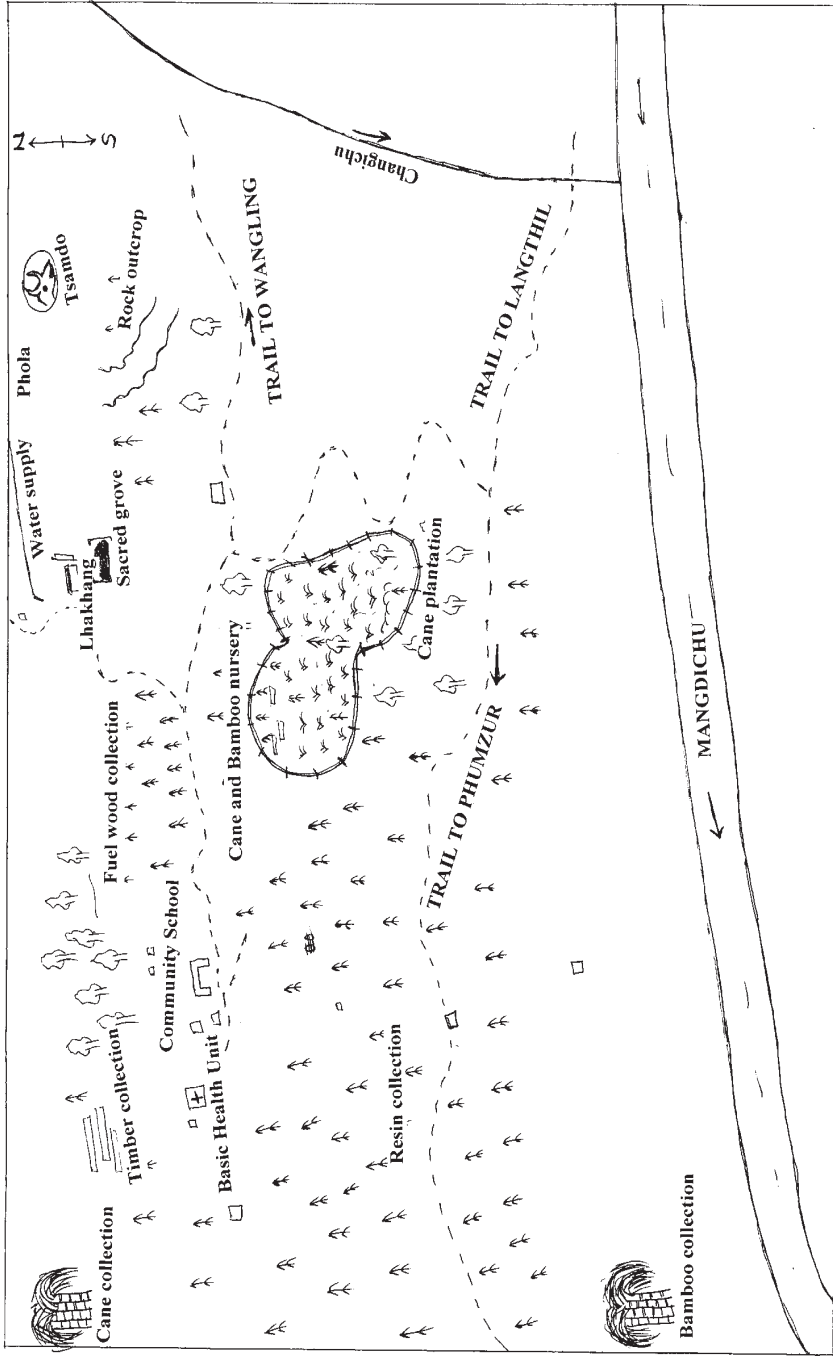
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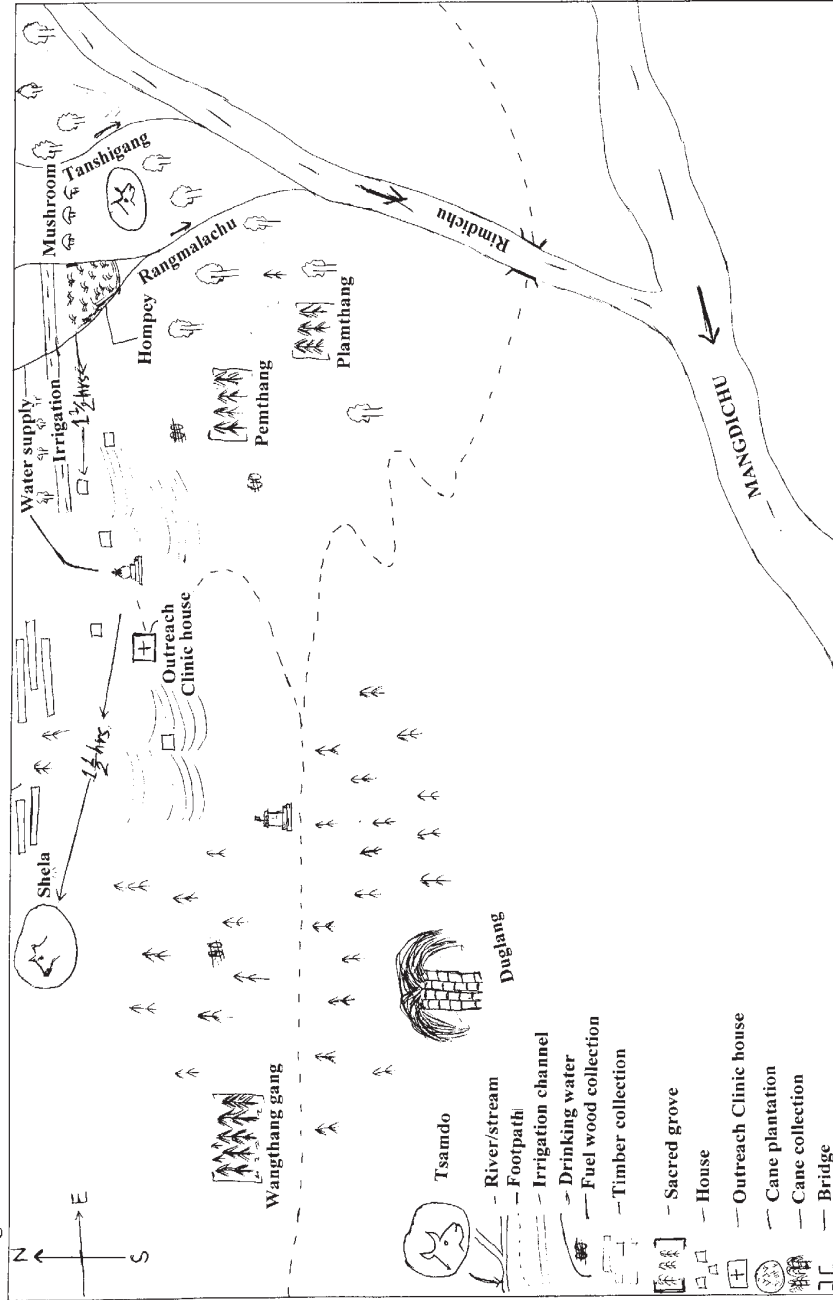
Village: JANGBI

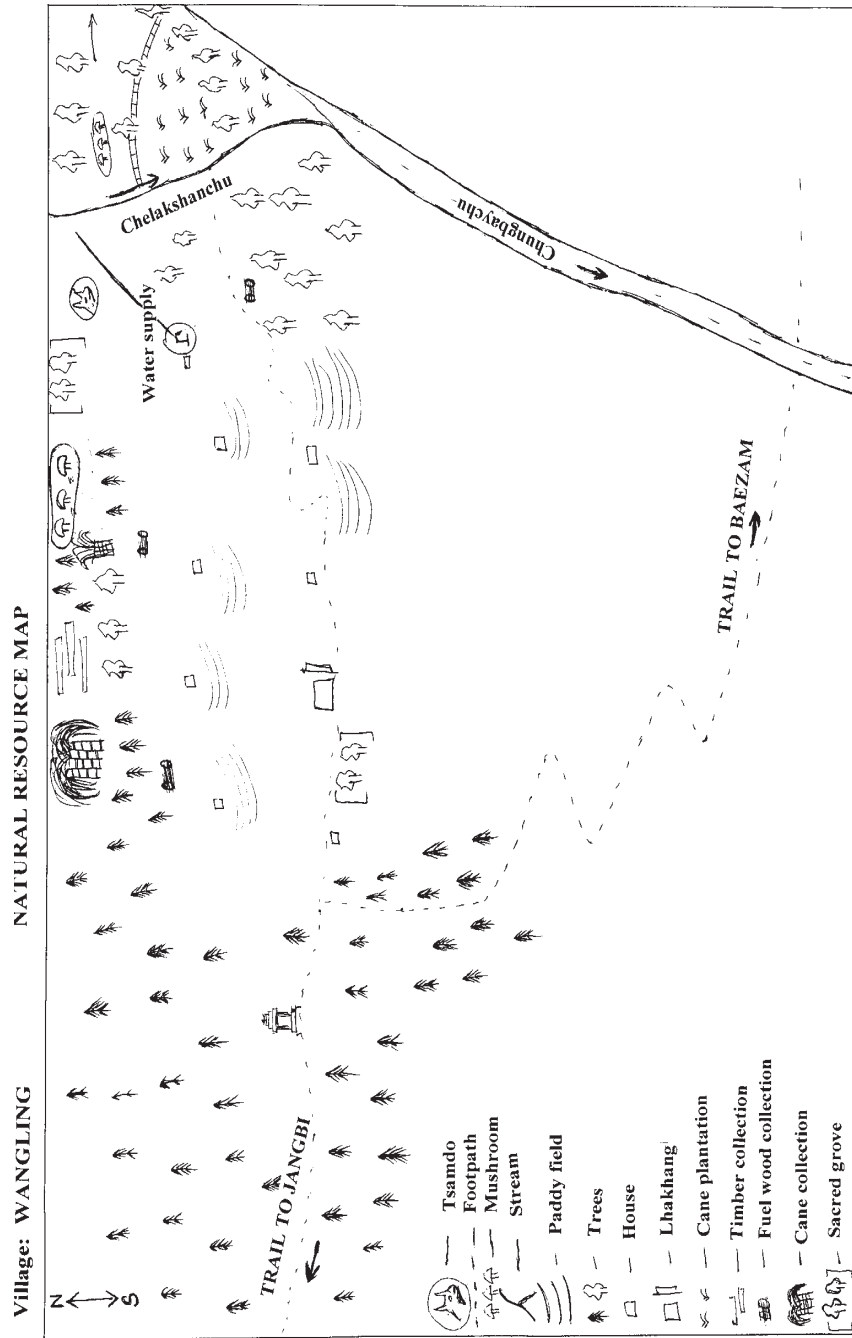
NATURAL RESOURCE MAP



NATURAL RESOURCE MAP

Village: PHUMZUR





Dr. Seeta Giri was born and brought up in Daifam, a small village in the south-eastern part of Bhutan. Since 1994, she has been deeply involved in the management of natural resources both at the national and community level. She has traveled extensively within the country and gained much insight into the different lifestyles and cultures of remote communities such as the Brokpas, Layaps, Lhops, and Khengpas, amongst others. “The Vital Link” is the fruit of her passion to work with rural communities and to learn about their traditional values and practices that have a powerful bearing on the environment.

Dr. Seeta Giri is currently working with the UNDP (Bhutan), a multilateral organization that provides assistance in the areas of poverty reduction, good governance, and environmental preservation.

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The Vital Link

Monpas and Their Forests



Seeta Giri

The Monpas are an indigenous community living in the buffer zone of the Black Mountain National Park. They are considered to be the first inhabitants of Bhutan. The current Monpa population in the Trongsa and Wangdi districts is 370. They speak Monkha, a distinct dialect of Tibeto-Burman origin. Preserving the environment, sacred and natural heritage sites are an important and integral part of the Bon value system, which the Monpas practise to this day. However, this small community is witnessing a gradual but steady change in its traditional way of life.

The book "The Vital Link: Monpas and Their Forests" provides a chastening insight into the origin, history, and culture of the Monpas and how this community and their forests have co-existed and sustained each other for ages.

The proceeds from the sale of this book will go to support the welfare of the Monpas of Jangbi, Wangling and Phumzur.

Cover photo: Ap Pem Choto, Jangbi Village