

# Traditional community-based fire management among the Mizo shifting cultivators of Mizoram in northeast India

V.T. Darlong<sup>1</sup>

## Abstract

The tribes of northeast India practicing shifting cultivation or “*jhumming*” have unique and varied community-based fire management traditions. The Mizos, living in Mizoram, have developed effective and well-organized community-based fire management practices that revolve around shifting cultivation.

The foundation of this practice is the Village Council, a system of village community governance. While the traditional fire management tools and techniques are simple, the strategies rely on timely community response and participation. There are four categories of measures, i.e. regulatory, activity-oriented, preventive and punitive. The community regulates the period of *jhum* burning, defines roles for each of its members, prescribes preparation of fire lines in the *jhum* fields, and imposes penalties for causing forest fires.

Constrained by the dilemma of a society in transition and influenced by various factors, the effectiveness of the Mizos’ fire management practices appears to have weakened in recent years. Increased incidences of forest fire have prompted government intervention and schemes aimed at preventing and controlling forest fire. This shift from community-based to government-initiated programmes highlights the erosion of “*tlawmngaihna*” – a community spirit that puts the common good above personal gains. Rather than seeking to replace such management practices, the government should enhance the effectiveness of the traditional systems, supplement community efforts and encourage maximum community involvement.

## 1. Introduction

India’s northeastern region, commonly known as the “land of seven sisters”, is a land of diverse ethnic groups, tribes and culture. Shifting cultivation, locally known as “*jhum*” or “*jhumming*”, has been and continues to be a way of life for many of these tribes since time immemorial. Consequently, the tribes appreciate the role of fire and its uses in their traditional shifting cultivation system. However, since the period for slash and burn generally coincides with the dry and windy months of the year, incidences of fires spreading beyond the boundaries of designated plots into the adjoining forests are not uncommon. In extreme cases, such fires may even destroy entire villages or hamlets.

Years of experiences by different communities have led to the evolution of community-based fire management practices that are rather specific to each tribe in northeast India. This paper discusses the traditional community-based fire management system of the Mizo shifting cultivators in Mizoram. The role of state and central governments in fire management is briefly discussed to highlight the linkages and importance of forest fire management.

## 2. Mizoram: the land and its people

Mizoram, the “land of highlanders”, is one of the seven states of northeast India, with an area of 21,081 km<sup>2</sup>. It shares a boundary with Myanmar in the southeast and Bangladesh in the west (Figure 1). More than 98 percent of Mizoram is hilly and mountainous. The state enjoys a monsoon climate with an average rainfall of 2,640-3,900 mm annually.

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<sup>1</sup> Ministry of Environment & Forests, North-East Regional Office, Laitumkhrah, Upland Road, Shillong 793 003, India, email: vdarlong@hotmail.com

The people of Mizoram are known as the “Mizos”, a Mongoloid race that had migrated from Myanmar and settled in the area since the 7<sup>th</sup> century. The Mizos live in villages that used to be governed by village chiefs (or “*lal*”), but are now replaced by elected village councils. The Mizos number approximately 0.69 million and are a close-knit society. The Mizo code of ethics, or “*tlawmngaihna*”, espouses a moral of self-sacrifice for the common good. Agriculture is the main occupation and shifting cultivation continues to be the predominant practice, affecting as much as 6,000 km<sup>2</sup> or about 28 percent of the state. However, the Forest Survey of India estimated the area affected by shifting cultivation in the state between 1987 and 1997 to be 0.38 million ha (Anon, 2000a) or about 18 percent of the state.



**Figure 1: Location of Mizoram**

### 3. Causes and extent of forest fires in Mizoram

Natural causes of forest fires (e.g. lightning strikes) are rare. Forest fires are usually related to human activities, such as:

- ◆ *jhum* where highly inflammable bamboo flakes and kindling charcoal are blown to adjoining areas, setting dry grasses and leaf litter on fire;
- ◆ not clearing firebreaks around the *jhum* land before starting the burning;
- ◆ annual roadside clearing and burning (usually in February and March, the driest period of the year);
- ◆ burning of dry grasslands and forest floors by cattle grazers during the dry season to destroy unwanted vegetation and facilitate growth of new shoots for grazing;
- ◆ burning of forest floors to improve visibility for hunting wild animals;

- ◆ careless prescribed burning and fire line layout and construction;
- ◆ charcoal-making in the forests; and
- ◆ cooking and camping by woodcutters and other forest users.

Preliminary results of recent surveys show that the extent of forest fire in Mizoram is significant, though the areas affected fluctuate from year to year (Table 1).

**Table I. Extent of forest fires in different forest divisions of Mizoram**

Forest division	Area affected (ha)			
	1995/96	1996/97	1997/98	1998/99
Aizawl	1	42	0	0
Champhai	13,040	5,715	0	3,458
Chhinctuipui	56	0	6	0
Darlawn	0	0	0	0
Kawrtha	142	0	0	0
Kolasib	50	3	2	0
Lunglei	708	84	41	95
Mamit	101	0	0	0
North Vanlaiphai	800	2	0	0
Thenzawl	7	0	0	0
Tlabung	0	0	0	0
Total	14,965	5,986	49	3,547

Source: Anon, 2000b

#### **4. Traditional village institutions: precursor to community-based fire management**

Control and management of forest and *jhum* fire are joint responsibilities of individuals and the entire village. As *jhumming* has been an entrenched practice for the Mizos, the community has evolved its fire management around this tradition. Whenever a forest fire is reported, the Village Council President will immediately order the Village Crier (a village messenger or announcer) to alert the community, and anyone who hears the announcement is duty-bound to immediately proceed to the site to fight the fire. Labour is also divided across age and gender for *jhum* burning.

#### **5. Traditional tools employed for community-based fire management**

A Mizo prepared for fighting a forest fire will generally carry only a moderately long knife (chem or dao) and a bottle of drinking water in his cloth bag. He prefers to travel lightly, barefoot and clad in simple cotton clothing, so that he can move swiftly and climb trees to cut off branches for suppressing fires. He may even use drinking water to put out burning logs.

Fire extinguishers, buckets and spades are not suitable for the hilly terrain. They are not preferred by the local communities, except for extinguishing fires along roads or when houses are on fire. Occasionally, spades are also used to cover fires with soil cover as water is not always easily available in hilly areas. Household containers, such as buckets and pots, are filled with water for extinguishing any kindling falling on rooftops and around the village compounds. Modern firefighting equipment is used only by the Fire Service Department.

## 6. Techniques and strategies of community-based fire management

The four categories of techniques and strategies for community-based fire management are regulatory, activity-oriented, preventive and punitive measures.

### 6.1. Regulatory measures

The community as a whole determines the timing of *jhum* burning. Under the Mizoram (Prevention & Control of Fire in the Village Ram) Rules 1983, *jhum* burning can only be carried out between 15 February and 15 March each year. Fires are generally in the late morning or early afternoon so that burning can be completed at the latest by early evening.

### 6.2. Activity-oriented measures

This refers to the roles assigned to individual family members on the day of *jhum* burning and the activities of the entire village during a large-scale forest fire.

#### 6.2.1. Roles of individual family members on the day of *jhum* burning

- ◆ Role of male members: notify village authorities, immediate neighbours and those having adjoining *jhum* fields about the date and likely time of burning. The male members will go to the field and start the fire, remain in the field until the burning is completed, and stay watchful for any forest fire in the vicinity of their field.
- ◆ Role of female members: store water for ready use in the event of fire in the vicinity of dwellings and remain watchful for wind-borne kindling falling on the thatch roofs.
- ◆ Role of younger members: stay alert on the thatch rooftops with water to douse off fire caused by wind-borne kindling from the burning *jhum*, and alert elders if they see a fire.

#### 6.2.2. Community roles and actions during a forest fire

*Jhum* burning is always a busy period in a typical Mizo village. Traditionally, the entire community is involved, and every able-bodied member is expected to be available. All members of the village will prepare for the different responsibilities assigned to them. This may include speedy preparation of fire lines in strategic locations. Nowadays, the community also seeks the help of the local government Fire Fighting Authority to control forest fires. Subsequently, the Village Fire Fighting Authority and the government may conduct an enquiry to determine the causes of fires and try to identify the culprits, if any.

#### 6.2.3. Village Forest Fire Prevention Committee

Since the introduction of the Mizoram (Prevention & Control of Fire in the Village Ram) Rules, every village must set up a Village Forest Fire Prevention Committee (VFFPC). The Committee nominates volunteers from amongst its members to be “Fire Watchers” who remain active particularly during the period of *jhum* burning.

### 6.3. Preventive measures

- ◆ At the time of slashing the vegetation, a cleared corridor about 8-10 m wide is maintained between the slashed vegetation and the adjoining forests. This creates fire lines in the *jhum* field itself, thereby preventing the spread of fire to adjoining forest areas.
- ◆ The villages are generally encouraged to maintain leafy trees and bushes, whose branches could be used quickly for extinguishing fires, at the fringes of *jhum* fields and adjoining forest areas.
- ◆ A day or so prior to burning, an individual landowner, or a group of landowners with adjacent *jhum* fields, generally undertakes a careful “field excursion” to inspect the fire lines, assess vulnerable points, and plan strategies for action in the event a fire escapes.

- ◆ Penalties are generally imposed on individuals, or collectively on the entire community, for deliberately or accidentally causing forest fires.
  - The Village Council imposes stiff penalties on individuals who cause a forest fire. The amount may vary according to the findings of the Village Fire Fighting Authority or confessions of such individuals. For example, the penalty for a deliberate misdemeanour is Rs5,000 (approximately US\$100), while an accident may cost the offender half the amount. The money collected is channelled to the Village Welfare Fund.
  - The penalty imposed on the community can be as high as Rs50,000 (US\$1,000), but generally this amount varies depending on the cause of the fire, villagers' collective efforts in controlling the fire, level of damages, and other variables.

## 7. Recent interventions by the government and its role in fire management

### 7.1. Role and programmes of the state government

Increasing incidence of *jhum*-related forest fires has prompted the Mizoram government to introduce the Mizoram (Prevention & Control of Fire in the Village Ram) Rules 1983 for effective prevention and control of forest fires. It has set up fire prevention committees at the village (headed by the Village Council President), district (headed by the Deputy Commissioner) and state (headed by the Chief Minister) levels, each with distinct duties and functions. While the village-level committees are to mobilise volunteers for fire watching and firefighting in each village, the committees at the district and state levels mainly have advisory, supportive and co-ordinating functions. The state-level committee acts as the apex body for all the other committees and also interacts with the central government on the matter.

In addition, there is the Fire Crisis Cell in the State Environment & Forest Department headed by the Principal Chief Conservator of Forests. The Forest Department is the technical and nodal department that implements the "Fire Control Project" with funds from the central government.

The present fire protection and control scheme of the state government includes programmes for fire prevention, fire detection, fire suppression, awareness raising, incentives and rewards to non-governmental organizations and village councils working in fire management, training in modern fire management, research and development, and compensation for accidental death of any individual during the course of a firefighting operation.

### 7.2. Role of the central government

The central government, represented by the Ministry of Environment & Forests, provides funds to the state government to undertake fire management programmes. The activities include controlled burning, preparation of firebreaks, removal of fire hazards along roads and around plantation areas, and awareness/sensitisation programmes for fire management through meetings, seminars, poster campaigns, print media and electronic media. The central government also provides funds for firefighting equipment, special clothing for firefighters, vehicles, wireless communication equipment, and training.

## 8. Concluding remarks

Today's Mizo society is increasingly experiencing two major challenges in their fire management efforts. Its traditional community-based fire management system is weakening. At the same time, there is a perceptible increase in the incidence and intensity of forest fires, which in turn is having direct impacts on the local environment.

The gradual degeneration of community-based fire management is influenced by a variety of factors. The modern Mizo society is in transition. Taking advantage of modern education and adoption of alternative sustainable land-use practices, many Mizo families no longer depend on *jhumming*. In a typical village, only about 50 percent of the families fully depend on shifting

cultivation. The result of this transformation is that the community-based fire management system can no longer attract the services of many adult members of the village.

The traditional practices have also weakened because of increasing dependency on government-initiated fire management programmes. It is the perception of the people that the government Village Forest Fire Management Committees and the government-appointed Fire Watchers are now responsible for fire control. The shift from community-based to government-initiated programmes also indicates the erosion of the community spirit of *tlawmngaihna*, particularly in important issues like forest fire management.

The other constraint to Mizo's community-based fire management relates to the current system of unregulated selection of sites for *jhumming*. Traditionally, areas for *jhum* plots were selected in blocks, whereby the community could easily watch over and control any spread of fire to adjoining areas collectively. Today, due to reduced land availability, plots are prepared wherever possible and in smaller parcels. This increases fire risks, and creates more problems for managing fires. Moreover, the majority of the shifting cultivation plots are bamboo forests, which calls for extreme caution, when burning *jhum* during the driest period of the season, to prevent fire from escaping into the adjoining dried bamboo forests.

There is an urgent need to continue and intensify traditional community-based fire management systems among the Mizo society. Rather than substituting traditional systems, the government should enhance the effectiveness of traditional practices, supplement community efforts and encourage maximum community involvement.

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