

Living with fire: summary of *Communities in flames* international conference

David Ganz and Peter Moore

1. Introduction

Disturbance is present in all natural ecosystems, and management of forests must take into account the chance of natural disturbance by a variety of agents, including fire induced by humans. Fire is a ubiquitous disturbance factor in both space and time, and it cannot be ignored. However, not all fire is harmful. In some cases, fire is essential for forest regeneration; in others it destroys forests and has serious adverse social and economic consequences. It is important to differentiate between harmful and beneficial fires. At the same time, it is important to recognise that most fires are neither entirely good nor entirely bad.

Local communities are often blamed for harmful forest fires, whether they have started these fires or not. Consequently, fire and forest management institutions tend to perceive local communities as the problem rather than as part of the solution. Since local people have the most to lose in the event of a harmful fire, they should clearly be involved in mitigating unwanted forest fires. Papers presented at the recently convened international conference, *Communities in flames*, highlighted that local communities can and do manage fires in many situations and for many different reasons. The conference provided insights into what kinds of community-based fire management (CBFiM) are being practiced around the world. It also presented the challenges and opportunities for CBFiM, the potential catalysts for it to reach the ground, and the necessary next steps for promoting CBFiM on national and regional scales.

A major issue addressed during the conference was the importance of land/resource tenure security and incentives for successful CBFiM. The consensus was that incentives need to focus on people and organizational structures rather than on equipment or legal constructs. Another insight was that communities cannot provide the complete solution in dealing with harmful forest fires. Communities have a role to play, but should not shoulder the entire burden for fighting fires. Respect for communities and their involvement in fire management was identified as a crucial factor in establishing a balanced approach to forest fires.

Communities in flames was a first step in collecting examples of CBFiM and raising awareness of this issue. The attendance of over 120 people from 21 countries, and the discussion and contributions they provided, were strong endorsements of the view that communities can and do play an important role in the management of fires. There was significant diversity represented in the various community-based approaches presented. For CBFiM to progress, it must embrace this diversity and draw out similarities from the different community situations in which it is found. To better characterise CBFiM, it is clear that further understanding is needed. This paper summarises the reports presented at the international conference, provides an overview of CBFiM, and elaborates the key issues related to CBFiM.

2. Background

Recent large-scale fires throughout the world have demonstrated the high social, economic and ecological costs of uncontrolled fires. Unfortunately, government responses to forest fires have tended to focus on suppression and costly technological solutions to fight fires. Contrary to alleviating the problems, these solutions have often increased the scale and magnitude of forest fires. Furthermore, they have largely ignored the human dimensions of fire and the positive social and ecological benefits of smaller prescribed and managed fires. As the number of forest fires appeared to increase, conventional suppression measures have increasingly come under question. Thus, many agencies have started to explore more proactive approaches in combating fires, including more effective prevention activities. The search for improved approaches has led to calls for revisiting traditional forest fire management regimes that emphasise prescribed burning

and prevention. Many of these systems and approaches are seen to be more effective in tempering uncontrolled burns, more beneficial to local ecosystems and more cost efficient in the long term.

Analysis of the role of indigenous use of fire in forest management and conservation conducted in 1998 indicated that relevant, high quality information (published or unpublished) on community involvement in fire management was rare (Jackson and Moore, 1998). Moreover, the authors were surprised that many of the participants at an international workshop where the results were presented argued that communities did not have any role to play in managing forest fires, and were in fact considered only in negative terms as igniters of fires.

In response to these findings, Project FireFight South East Asia and the Regional Community Forestry Training Center (RECOFTC) sought to outline the information available and assess the interest in CBFiM. In December 2000, the two organizations began a dialogue on CBFiM by holding a regional workshop in Bangkok, Thailand. The workshop suggested two parallel strategies:

First of all, it is still clear that more examples of successful CBFiM are needed from in and around the region to combat the dominant paradigm that suppression, prevention and enforcement are the only effective ways to manage fire. The second and parallel strategy is awareness raising that is necessary and critical to give CBFiM credibility in the eyes of scientists, development workers, government officers, policymakers and civil society (Ganz *et al.*, 2001).

Due to the widespread interest in the Bangkok workshop and its report, Project FireFight and RECOFTC sought a larger audience to address these two parallel strategies. The result was *Communities in flames: an international conference on community involvement in fire management*, convened 25-28 July 2001, in Balikpapan, Indonesia. The conference was organized by Project FireFight in close collaboration with the Ministry of Forestry of Indonesia, the Food and Agriculture Organization of the United Nations (FAO), and the German Agency for Technical Co-operation (GTZ)-supported Integrated Forest Fire Management Project.

The *Communities in flames* conference focused on highlighting successful CBFiM strategies, in part to combat the persistent perception that suppression and enforcement are the only effective ways to manage fire. To promote greater awareness of actual experiences, plenary and working groups were used to examine the approaches and elements of successful CBFiM (including identifying fire research needs, forest policy reforms, legal and regulatory restructuring and appropriate strategies for socialising CBFiM). The conference further sought to identify opportunities for further collaboration.

3. Key points from the conference

The development and implementation of fire management strategies need to include evaluation of how, when and why local communities use and manage forest fires. In this conference, examples of fire prevention and suppression were contrasted with beneficial uses of managed fires for controlling weeds, reducing the impact of pests and diseases, and generating income from non-timber forest products (NTFPs). The impacts of fires on forests, positive or negative, depend on the fire regime that is suitable for the ecology of the forest type under management. People who live in localities where fires burn will often know the local conditions and many of the components of this fire regime.

In the *Communities in flames* conference, examples were given of how local people can and do apply this traditional knowledge when they use and manage fires. The key points of the conference are summarised below to stimulate discussions on defining the context of communities, their role in fire management, and the mechanisms that will be needed to facilitate their inclusion in national fire management policies.

3.1. Communities have a role

Communities can play a significant role in fire management, especially in most parts of the world where human-based ignitions are the primary source of fires. Fire is not something that can be excluded from people's daily lives and in many cases not from the ecology of landscapes. Communities use fire to cultivate crops and NTFPs, hunt, create forage, and manage pests and diseases. They also play a significant role in preventing and suppressing harmful fires that have a detrimental impact on their lives. An example from Thailand (Box 1) is one of many in which local communities have taken action to protect resources not only within their vicinity but also resources valuable to their country. Many cases exist in remote locations where the government's fire control/suppression approaches would not be as successful in protecting the forest resource.

Box 1: Communal resource protection – an example from Thailand

Villagers from the Mae Khan watershed had been using fire in a traditional cultivation system. In the early 1990s, fire started to become a problem, spreading from one village to another and potentially into valuable forested catchment areas. Communities came together to form a collaborative fire protection network around their forested areas. Today the villages have a co-ordinated system to protect the Mae Khan watershed.

Communities cannot do everything, however. The activities and knowledge communities generally practice are primarily those associated with prevention. They include planning and supervision of activities, joint action for prescribed fire and fire monitoring and response, applying sanctions, and providing support to individuals to enhance their fire management tasks. It is not fair or feasible to expect communities to go far beyond their activities to be involved in large-scale fire suppression, for example. This task requires significant resources to be organized, often for substantial periods of time each year. Communities can be an important, perhaps pivotal, component, but should not be expected to shoulder the entire burden for fighting fires.

3.2. Sense of ownership

There are several different ways for communities to participate in fire management. This involvement can be started, stimulated and supported using a variety of social or economic incentives. *Communities in flames* identified many ways in which communities have taken action in forest fire management, ranging from simply providing labour to active decision-making. Although all such inputs are credible, truly sustainable community action depends on having a meaningful role in decision-making and priority setting.

A case from Indonesia described the use of monetary incentives for getting community members to extinguish coal fires threatening a protected area. This was an example of community involvement in managing fire in forests in which they have no "sense of ownership" and where they had not started the fires. It was unclear whether once the development project left, community action would continue. In contrast, a case from The Gambia presented self-initiated action for preventing and suppressing fires where there was a sense of ownership. Similarly, a case from Viet Nam demonstrated the effectiveness of the land allocation programme in reducing the number of fires. Both examples demonstrate the importance of land/resource tenure security and incentives. In general, when communities have this "sense of ownership", they are more inclined to take interest and action in the management of fire.

This "sense of ownership" was a key concept identified at the *Community in flames* conference. It stems from recognising that people have been "mobilised" where they had a *sense* of ownership. It is important to note that this *sense* does not automatically include legal or formal

ownership and does not only apply purely to land or tenure security. In some areas of the United States, Germany, New Zealand and Australia, land ownership and resource access rights do not directly result in a “sense of ownership” of the fire management issue. In one case from California, community concerns about fire management were ignored by state and federal government agencies until the community took collective action to demonstrate their “sense of ownership” of public lands. The comfort and ability to make decisions about fire and its management is often based in this concept of “sense of ownership”. Conversely, the absence of this *sense* or the destruction of it through circumstance or third party action may eliminate local people’s interest and motivation to be involved in fire management.

The existence of incentives is a factor that appears to be intimately associated with this “sense of ownership”. The provision of some sort of benefit, formally or traditionally, appears to be a key element in the active participation of communities in management of fires. Some incentives are short term and costly, but necessary. Others may be longer term and lower cost, but also very worthwhile. A closer analysis of these incentives and their outputs is necessary. It was clear that incentives in Africa and Asia have some similarities in design, but are different in terms of outputs and relative levels of success.

In the past, cases of CBFiM have been assessed as successful by only a segment of society. “For whom is CBFiM successful?” is an important question that emerged during the keynote addresses (Box 2) and numerous other times at the conference. The benefits may also be short term in nature and highly specific. Benefits may accrue to only a segment of the community. Or, they may be beneficial to the community, but not to stakeholders outside the community. There is a clear need to be explicit about who benefits and how impacts accrue. In most cases, the users of fire benefit while others (e.g. urban dwellers, transport and tourism industry) perceive fire to be largely negative. It will be necessary to fully assess community needs and uses of fire as well as the appropriate conditions and strategies for CBFiM success. In these aspects, it is important to clearly understand what is meant by “community” and “community-based” approach.

Box 2: Keynote addresses

William Jackson (Global Co-ordinator, The World Conservation Union [IUCN]’s Forest Conservation Program) introduced the premise that community participation is not just labour supporting fire prevention and suppression but is rather local people managing fire in terms of their own needs.

Somsak Sukwong (Executive Director, RECOFTC) stated that the success of community-based fire management should be measured on the basis of its appropriateness for meeting the community’s needs and management objectives.

3.3. Context of “community” and “community-based” within CBFiM

There is a large body of knowledge on, and examination of, the definition of communities and community-based approaches in other fields such as anthropology, community-based forest management and other disciplines of the social sciences. This material should be considered and incorporated in the evolution of an understanding of communities in the context of fire. Indeed, many of the lessons learned from community involvement in forest management are directly relevant to CBFiM and it would be wise for advocates to recognise this and avoid re-discovering and duplicating existing information and understanding. CBFiM proponents maintain that there are potential and important linkages among CBFiM, land-use planning, natural resource management and overall community development processes. CBFiM cannot function independently from these other processes.

The context of communities is central. Brazil, Indonesia and, to a lesser extent, the Congo Basin can be identified as “frontier” situations where rapid change and development are taking place and natural resources are being heavily used. In time, the change processes will slow down for various reasons and conditions should stabilise. At present, the rapid and profound change is a major influence. Conversely, the circumstances in Mongolia, parts of China and East Africa are characterised by low population densities and consequently a different context for community involvement with fire. Other countries have varying conditions and complex circumstances requiring careful assessment and comprehensive analysis.

The term “community” in the context of CBFiM could be taken broadly to include a household, a group of households, a settlement, or a group of settlements. Generally, a single household is not considered a community. For example, under the land allocation programme in Viet Nam, the household is an important functional unit for encouraging community forest - including fire - management. Within a well-defined community, sub-groups or other stakeholders may also have different interests in how fire is managed (Box 3). All of these sub-groups are stakeholders and their uses of fire should be considered when developing CBFiM.

Box 3: The importance of “community” - an example from East Kalimantan

The community living around Sungai Wain Protection Forest has 14 sub-groups. Each of these sub-groups will likely have varying knowledge and experience with fire management or perhaps none at all. Some have noted that new migrants to East Kalimantan are partially responsible for some of the harmful fires because they watched and mimicked neighbours clearing land with fire without an understanding of fire as a management tool in their new surroundings.

The term “community-based” in the context of CBFiM is much more than community labour in fighting fires. It is also important to recognise that community “involvement” covers a wide spectrum of situations, from potentially forced participation in an activity (coercion) to free and willing participation in actions developed by the actors themselves (empowerment). The emphasis of “community-based” is sometimes focused on community involvement alone; at other times, CBFiM has been recognised and supported by external agencies (governments, non-government organizations [NGOs], projects and others). This may include support to an existing indigenous system by formalising, modifying, or otherwise elaborating on it, or instituting new systems.

3.4. Indigenous knowledge - justified emphasis or overstated?

Investigations on communities and their interaction with their environment have often uncovered significant information, knowledge and wisdom on natural resource management. Fire management is no exception and the value of this community memory is enormous. There are, however, some caveats with respect to traditional knowledge. One critical understanding is that traditional knowledge is not always recognised as dynamic knowledge. The information and its application change through time, as do the conditions and circumstances in which it is used. Notably the traditional approaches may progressively be lost as the world moves through a period of change and communication unlike any other in history.

Traditional or local knowledge itself is insufficient to ensure sound, effective fire management. Institutional structures - both within and beyond the community - and the capacity to apply the knowledge are needed. While pertinent, timely and appropriate knowledge about fires is useful, it will be of little use without the community institution to organize and direct the application of the knowledge. Integration of traditional approaches into a fire management system will need a concerted effort by all stakeholders to build constructive partnerships that recognise the importance of attitudes towards fire, roles in decision-making and securing incentives for balanced fire management.

Varying emphasis has been placed on identifying indigenous practices for using fire as a management tool. The conference recognised that communities often possess much knowledge about fire. However, the context for fire on the landscape is dynamic, for the same reasons that ecosystems and social systems are dynamic. Fires are becoming a problem in parts of the world where historically they were never considered a problem. Shifting population, changing land-use patterns, globalisation and (potentially) global warming are just a few factors that are changing the demographics and ecological circumstances in which fires seem to be occurring more often. In addition to a greater frequency of events, fires have been reaching greater sizes than previously experienced. If CBFiM is to be culturally sensitive, sustainable and responsive to a community's socio-economic needs, then local-level information and experiences need to be examined and understood.

There are cases that demonstrate the use of fire can be sustainable in agricultural, pastoral or agro-pastoral systems. Many of these sustainable systems have depended on locally based knowledge being passed on from generation to generation. The erosion of fire-related community knowledge has taken place through the dislocation of people from their traditional settings and by younger generations disassociating themselves from the elders holding the knowledge. Increases in population, or in some cases relocation policies, can also change the sustainability of local fire management systems. In cases from India (Box 4), Indonesia and Thailand, traditional agricultural practices have been eroded by shifting demographics, both from the young moving to urban centres for work as well as from relocation policies intended, in part, to reduce population pressures on the resources. As a result, many sustainable fire management systems are being lost and there is an urgent need to document CBFiM approaches and their indigenous practices.

**Box 4: The impact of changing demographics on traditional agricultural practices
– an example from northeast India**

Modern Mizo society has replaced the traditional practices of *jhumming* or shifting cultivation. In a typical village in which 50 percent now depend on the *jhumming*, its role has been weakened in the society and consequently undermined CBFiM approaches. In this part of India, there has been a gradual transfer of responsibility for fire to government agencies, and as a result of limited resources, fire has become a problem where once it was part of daily life and subsistence.

In contrast, some knowledge may be valid and highly useful but not traditional. Spontaneous and forced migrant communities may develop sound approaches in dealing with fire in their new settings. There are also examples where such communities have not adapted appropriately and fire becomes a problem for the local environment and landscape. In some cases, this misapplication has led to social conflict between groups. Clear examination of who holds the knowledge used in managing fire is necessary. This can be difficult to determine. In the case of the Sungai Wain Protection Forest (Box 3), less than 20 percent of the local population was originally from East Kalimantan and the community contained 14 different ethnic groups. Communities are also not static and traditional knowledge may not have originated in the locality where it is observed. Without careful identification of its origin, fire knowledge may also be associated with the wrong ethnic or sub-group. Transferring lessons between communities, in different provinces, nations or regions and establishing principles and common elements of CBFiM will be delayed and confused if the source of fire management knowledge is unclear.

4. The way forward

To transfer lessons between communities, in different provinces, nations, and regions, there is a need for improved education and training which recognise the technical and organizational capacity of communities in managing fire, historically and culturally. Integral to this education

and training is the need to evaluate the effectiveness of community-based approaches with consistency and rigor. It is especially necessary to enhance awareness of fire management issues and the effectiveness of CBFiM approaches to those external agencies that do not yet recognise and support it. A communications strategy has been suggested to facilitate this process.

4.1. Communications

Case studies are useful and many of those presented at the *Communities in flames* conference were well prepared. However, the concepts, ideas and principles should be widely shared through communications and advocacy to stimulate adoption and organizational change. The conference provided a stronger base of materials for convincing stakeholders about the role of CBFiM in balanced forest and natural resource management. There is sufficient information and understanding for communications and advocacy to commence. Proponents should not simply advocate CBFiM's merits to those already convinced of its value, but rather should aim at persuading non-believers to accept the role of CBFiM. A target audience accessible to many of the conference participants are those being trained at universities in forestry, natural resource management, rural planning and development. These disciplines needed to be exposed to the perspectives of the community on fire, both as a specific topic and as examples of how communities can be sensible stakeholders in natural resource planning and management.

The papers and case studies presented at the *Communities in flames* conference will offer a solid foundation for increased advocacy related to CBFiM. A fact sheet on CBFiM will also be prepared and widely circulated to provide a summary of the understanding and messages from the conference, and as an initial exposure to CBFiM for those who have not yet encountered it. The *Communities in flames* participants numbering more than 120 people from over 20 countries (from a wide range of donors, governments, government agencies, international and local NGOs, projects, academic institutions and the private sector) make up a formidable cadre of advocates for CBFiM. Many are already members of networks and fora that operate worldwide and encompass the full range of communities, natural resource management, forestry and development. The combination of the products of the conference and the scope of the participants' interests and professional contacts provides a strong opportunity for the key messages of the conference to be heard around the world at both field and policy-making levels.

As people clarify and contribute to the body of knowledge on communities and fire, the potential exists for identifying general models of CBFiM for others to experiment with and adapt. The starkly different contexts and the wide range of human, economic, political and ecological circumstances sound a warning of caution for transferring lessons. The "community" of local people, academics, government officials, project staff, individuals who work in donor agencies and NGOs has to clearly frame how to transfer lessons effectively. The challenge is to learn lessons and identify common principles from within the diversity of experiences and situations.

It is also valuable to identify the lessons inherent in failures. In many cases, efforts to build awareness and promote CBFiM actions have been difficult and the experiences negative. Why certain efforts fail, and the options for coping with failure, are potentially just as important as compilation of success stories.

4.2. A typology for CBFiM

Despite the efforts of the *Communities in flames* conference to document cases from around the world, there is still a clear need for further enhancement and documentation on the different levels of community participation in fire management.

At the conference, the need to develop a typology or characterisation of communities and their approaches to manage fire was identified (Box 5). The need to frame the concepts while at the same time remaining flexible creates a challenging tension. It is essential to ensure that any categories arising from such analysis and synthesis do not become "boxes" into which communities are placed, labelled and from which they have difficulty extracting themselves. A major emphasis emerging from the conference papers was one of diversity, unique circumstances

and varying context. The placement of elements into a typology that is flexible would enable clearer and more effective dissemination of the diverse approaches of CBFiM (where it exists, its strengths and the need for particular forms of incentives, support or motivation).

Box 5: The need for a typology

Cases from The Gambia and the Western United States demonstrate the need for a typology. These cases provide interesting similarities in the use of multi-stakeholder fora to discuss fire management systems but within very different socio-political and biophysical contexts. The Gambia, having adopted principles of community forestry, and the Western United States, with its strong private property rights regime, are dynamically different circumstances for CBFiM. A typology as a mechanism to systematically identify elements of difference and those held in common will support the effective transfer of lessons among communities and the development of principles for CBFiM.

The blending of understanding and information about elements that are important (successes, failures, and key factors) should be considered at the wider scale. To identify the “system” elements that enable (or prevent) CBFiM, the broader aspects at the system or programme level must be evaluated. These include the policies, laws, macro-economic intentions (and the institutions that represent them) and their implementation. A review of these elements from beyond the community level is needed to support the points for discussion, lobbying and advocacy with stakeholders at the system or programme level (e.g. government agencies, national governments, donors, NGOs). This improved understanding at the wider system scale should also create the opportunity to identify where, and perhaps how, communities can be connected to other levels of local, provincial and national governments and international actors.

5. Summary

Fire cannot be ignored as a factor in forestry, natural resource management and development activities. The *Communities in flames* conference underscored the fact that people around the world are concerned to different degrees about fire. Fire is not something that can be excluded from their daily lives and, in many cases, not from the ecology of landscapes. The connection between communities and fire is often based on economy (livelihoods, commercial activities and impacts) and in the longer term, also on public health. A clear examination of communities, their approaches to manage fire and the other stakeholders in fire issues is necessary to promote CBFiM at higher levels. This will serve as the basis for clarifying objectives for constructive dialogue between interested parties on how to manage fire in the landscape.

The dynamic nature of the world and its changing actors was evident during the conference. No single actor, whether government or civil society, can solve the serious social, economic and ecological threats from forest fires. It is essential that constructive partnerships are formed and stakeholders work together with NGOs, governments, the private sector and communities.

The *Communities in flames* conference was a first step in developing awareness of the role of communities in managing fire. It identified many ways in which communities have taken action in forest fire management and the need to give credibility to this role, but not to overstate it. In addition, the conference suggested possible approaches that might be necessary to move beyond isolated examples to broader implementation based on system elements. These system elements may be useful to local, provincial and national governments as well as international actors as they seek more cost-effective alternatives to managing fire in an increasingly fire prone-world.

References

- Ganz, D., Moore, P.F. & Shields, B.J. (2001). Report of an International Workshop on: Community-based Fire Management. Organized by RECOFTC and Project FireFight South East Asia, Kasetsart University, Bangkok, Thailand, 6-8 December 2000.
- Jackson, W.J. & Moore, P.F. (1998). The role of indigenous use of fire in forest management and conservation. International Seminar on Cultivating Forests: Alternative Forest Management Practices and Techniques for Community Forestry. Regional Community Forestry Training Center, Bangkok, Thailand.