
Community-based fire management (CBFiM)

The term *community-based fire management* (CBFiM) was coined by Sameer Karki at the Regional Community Forestry Training Centre (RECOFTC) in Bangkok in 2000. The lower case “i” is used in the acronym to distinguish it from community-based forest management (CBFM), which has been implemented as a form of CBNRM for some time. Since recognition began almost a decade ago, there have been a series of reports, analyses, case studies, training efforts and some peer-reviewed papers. Collectively, this body of written work serves as a reference for CBFiM practitioners and policy-makers alike. CBFiM began to be documented and recorded in the late 1990s. This review brings together the insights and understanding generated throughout the past decade to create a solid summary and a platform that will enable CBFiM to progress to realize its potential role in sustainable landscapes in a changing world.

In many countries around the world communities continue to use fire in a safe and effective manner to improve livelihoods and protect resources. These communities are quite familiar with fire and its uses for traditional livelihood activities such as clearing vegetation for agriculture, improving pastures for grazing, hunting and managing non-timber forest products (NTFPs). Where communities may not rely directly on local natural resources to sustain a living or use fire to manage those resources, it remains in their best interests to have a stake in how fire is being managed across the landscape with which they are associated.

Analysis of CBFiM and its effectiveness as a fire management approach began in the early 1990s in Africa and Southeast Asia, where recent decades have seen a significant increase in large-scale fires (IFFN, 2003). Information and lessons learned from those analyses have confirmed CBFiM as a potential component of efforts to manage sustainable landscapes. Examples of CBFiM can be found globally in developing, transitioning and industrialized nations. The success of these efforts varies depending upon a number of factors, including the existence of: supporting policy and legislation, land tenure, and institutional and community capacity. What remains consistent, however, is that fire, people and the ecosystems that they inhabit are inextricably linked. There always has been fire and, as a natural disturbance event, there always will be fire. For these reasons it is essential that contemporary fire management approaches, if they are to be effective, consider not only the technical aspects of fire management, but also the communities and the environments in which they live.

CBFiM has multiple manifestations in most nations across mixed cultural, social, economic and ecological circumstances. This diversity has led to a range

of explanations and definitions for the term to describe local people actively engaged in fire and its management. Based on structured fieldwork by subject matter experts (Ganz, Fisher and Moore, 2003), a working definition was put together. This definition was considered a refinement of CBFiM concepts pulled together for a substantive review document in 2004 (Moore, 2004). Generally, it is an approach to fire management in which local communities are actively engaged in the development, and in some instances the implementation, of fire management strategies designed to prevent, control or utilize fires in ways that will improve their livelihood, health and security.

WHAT IS IT?¹

CBFiM can be considered as a subset of CBNRM, which is not a new idea or approach to natural resource management. CBNRM is receiving increasing attention as the role of communities in the management of their resources is recognized as being an essential element in effective and sustainable resource management. The concept of CBNRM is linked to a variety of terms, including participatory, community, community-based and collaborative natural resource management (Treue and Nathan, 2007). In practice, CBNRM is mostly about ways in which the state or government can share rights and responsibilities regarding natural resources with local communities. A continuum for CBFiM has been identified, suggesting that in general terms it can be considered as having three nodes:

- Local-scale fire management in which traditional or indigenous knowledge plays the major role in informing and undertaking fire management, which is also planned, conducted and controlled by local people. Livelihoods and maintaining the landscape are key to this node of CBFiM. A community may have complete ownership and legally recognized tenure rights, including management of land and natural resources, completely community-based. The practices of Australian aborigines are an example of this node of CBFiM.
- Community involvement in fire management that involves a range of local actors, including agencies and non-governmental organizations (NGOs), that work on fire management. Livelihood dependence, some traditional practice and community institutions may be characteristics. Elements needing support may include: analysis of the fire problem, technical capacity, regulatory framework or logistical assistance.
- Volunteers from the community, perhaps with agency involvement, conduct fire management on behalf of the community across private and public lands. The development of Community Wildfire Protection Plans (CWPPs) in the United States of America and the Volunteer Bushfire Brigades in Australia are examples of this node of local management. There may be very little direct involvement of local people in the rural landscape, and livelihood dependence on lands or forests is low. Hence, community involvement may be limited to a role in which the community is informed of management decisions and designated roles and responsibilities by the government, with very limited

1 This section includes material drawn from Moore (2004).

consultation. This node is, therefore, not really considered community-based.

Any situation in which CBFiM is practiced can be characterized on the basis of one of these nodes or a combination of them.

A common theme among the array of CBFiM definitions is that the community is actively involved in some aspect of fire management: either the development of fire management strategies or their subsequent implementation. This involvement includes activities associated with the management of fire-prone land, such as suppression, prevention and the use of fire. These fire management activities are typically associated with livelihood activities and occur with or without the assistance of groups or organizations outside of the community. However, the importance of entities external to communities in helping to achieve effective and sustainable CBFiM approaches has often been cited (Jackson and Moore, 1998).

A Strategic Paper written in 2003 similarly suggests that the emphasis on “community-based” relates not only to community involvement, but also to community capacity that has been recognized and supported by external agencies (governments, NGOs, projects and others) (IFFN, 2003).

Zhang *et al.* (2003) defined CBFiM as an approach in which villagers have shown a profound understanding of fire prevention and control and have participated voluntarily in fire management. A slightly more ambiguous definition of CBFiM included the conscious use of fire by communities to meet specific objectives (Suyanto, Applegate and Tacconi, 2002). In 2003, the Global Fire Monitoring Center (GFMC) updated the 1986 version of the online FAO Wildland Fire Management Terminology (FAO, 1986) and included the following definition of CBFiM:

[CBFiM] is a fire management approach based on the strategy to include local communities in the proper application of land-use fires (managed beneficial fires for controlling weeds, reducing the impact of pests and diseases, generating income from non-timber forest products, creating forage and hunting, etc.), wildfire prevention, and in preparedness and suppression of wildfires.

The term has been used to describe such a wide variety of different ways in which communities are involved in fire management, in parallel with the discussion of CBNRM, that it is difficult to make any systematic comparisons or generalizations. A definition should be precise enough to enable useful generalizations to be made about somewhat similar things, while being flexible enough to accommodate a variety of approaches; that is, it should be a definition based on essential features. The definition proposed by Ganz, Fisher and Moore (2003) is:

CBFiM is a type of land and forest management in which a locally resident community (with or without the collaboration of other stakeholders) has substantial involvement in deciding the objectives and practices involved in preventing, controlling or utilising fires.

This description defines CBFiM, without confusing it by incorporating a separate definition of fire management, with “fire management” taken to be any fire-prevention or fire-related practice. The essential feature of the definition is that it takes seriously the idea of fire management being community-based. It does not include situations in which people simply carry out paid work for a fire-control agency or another agency outside the community. Communities are in decision-making roles for the application and control of fire so that:

- They have sufficient tenure (formal and informal) to ensure that their rights are considered along with broader (e.g., national, provincial and district) production and environmental protection aims and objectives.
- They consider that involvement in land and fire management decision-making and activities will improve their livelihood, health and security (Abberger and Marbyanto, 2003).

This view is consistent with a trend in CBNRM (and various other similar approaches), which sees the essence of genuine community participation in terms of some element of community power over decision-making.

As the nature of the implementation of CBFiM is dynamic, so should its definition be dynamic until the concept matures, and the breadth of work on and experience in CBFiM enables a static, certain definition to be developed.

The identification and analysis of CBFiM to date has been in the context of developing and emerging nations. There are some key differences between their circumstances and those of developed nations. In developing countries the roles of government and the types of land-use activities differ from those in developed countries. The definition of “community” (“living in a particular locality” or a “community of interest”) is essentially different in developed countries. In developing countries, land-use activities are more often tied to personal livelihood and existence, with no other choices available.

Recent examples of community engagement in developed countries could be seen as an element of CBFiM, as the community is increasingly invited to participate in fire management decision-making, and the importance of local knowledge is being recognized and valued. However, there is little evidence that community engagement ensures community empowerment in the context of land-use management. In fact, there is no clear, common understanding of community engagement. Of note, in developed countries, if CBFiM requires government involvement, it will require considerable resources and training within the organizations and communities involved for effective implementation.

COMMUNITY

The identification of “C”BFiM will rest in part on the definition or description of “communities” as an entity. Some advocates of community management have assumed that communities are small spatial units with an homogenous social structure in which members share common values and objectives. In fact, this homogeneity is rarely the case. Communities are characterized by dynamic relations consisting of: multiple and often conflicting interests; a variety of actors

attempting to influence decision-making; and internal as well as external parties shaping decision-making processes (Agrawal and Gibson, 1999). This view differs slightly from a more recent one formulated by MacQueen *et al.* (2001) in which a community is defined as a group of people with diverse characteristics who are linked by social ties, share common perspectives and engage in joint action in geographical locations or settings. A community, then, may contain individuals who do not always share common interests or perspectives; and further, both internal (community) and external (other) interests often inform decision-making processes at the community level. A number of examples and models exist of effective inclusion of communities in the management of their forests and non-forested landscapes. Success, in many cases, is linked to a participatory approach that engages indigenous skills and knowledge and combines them with appropriate outside expertise and experience (Jackson and Moore, 1998). CBFiM is one such approach.

INTEGRATED FIRE MANAGEMENT

The term CBFiM is often confused with the comprehensive approach to fire management known as integrated fire management (IFM). They are, however, not the same thing. Broadly defined, IFM includes the integration of science and fire management approaches with socio-economic elements at multiple levels. As such, it implies a holistic approach to addressing fire issues that considers biological, environmental, cultural, social, economic and political interactions (Myers, 2006).

Fire Paradox, funded by the European Union, was a joint research project on forest fires with a strong focus on fire use – “integrating” into “fire management”. The primary objective of the project was to prevent the disastrous social, economic and environmental consequences of wildfire in the Mediterranean environments of Europe. The research was used to provide the scientific and technical building blocks necessary to improve the management of wildfire through the “wise use” of fire.²

The integrated approach to fire management is set out comprehensively in the Fire Management Voluntary Guidelines (FAO, 2006), and involves:

- integrating all activities related to fire management, such as prevention, preparedness, suppression and restoration, into one coordinated process of fire management policy, planning and implementation;
- integrating the use of fire as a land-management tool and the management of devastating wildfires into one process, which involves the acceptance of fire use in certain situations;
- integrating all actors and sectors involved into the same process; and
- integrating all actors involved in fire suppression, through the use of the Incident Command System (ICS), in the case of wildfires.³

² For more information on the Fire Paradox project, see www.fireparadox.org.

³ See www.fao.org/forestry/firemanagement.

In many cases, CBFiM includes one or more of the components typically identified with IFM, such as fire management, fire sciences and socio-economic factors. CBFiM is often stimulated by a socio-economic dimension at the community level, which may have elements of livelihood enhancement and rural development activities and lead to community-level policy development. CBFiM also often includes traditional and contemporary approaches to fire management, such as prevention, suppression and fire use. Anecdotal or indigenous knowledge of local fire ecology and fire behaviour is also often a component of CBFiM. While CBFiM may not always be a required element of IFM, it does involve the application of management and science and is often driven or underpinned by socio-economic elements, so it can be said to be integrated.