

Further Defining Community-Based Fire Management: Critical Elements and Rapid Appraisal Tools

D. Ganz¹, R.J. Fisher² & P.F. Moore³

¹ Spatial Informatics Group, San Francisco, CA, USA

² Honorary Associate, Division of Geography, University of Sydney; Leichardt, NSW, Australia

³ Metis Associates, (formerly Project Firefight South East Asia), East Ryde, NSW, Australia

Abstract

Fires have burnt around the world in the decades of the 1980s and 1990s. Increasingly the solutions to these fire problems and the persistence of them year after year is suggesting that the reaction to fires to date needs to be reviewed. In part it has been suggested that a component of a balanced fire management should include an active role for communities.

To an extent this flows on from the emphasis that has been placed on Community Based Natural Resources Management as one way forward to resolving problems and improving the circumstances of land management and conservation. A series of meetings, a review and an international conference have been among major efforts on Community Based Fire Management conducted by the Project FireFight South East Asia (PFFSEA) and its partners. Over the last half decade, a number of concrete efforts have been made to characterize what CBFiM means and to outline its cohesiveness with other community based approaches. After a review of these efforts to provide some context for this paper we report on an effort to create an initial approach to thinking about community fire management efforts.

A set of core concepts and tools to review the scope of fire management by communities were prepared through an intensive workshop process, followed by a preliminary field check. Our intention was to provide a consistent basis and an analytical process to assess community based approaches to fire management, prevention and use. The key attributes of Community Based Fire Management and some analytical methods and tools to assess it are presented for information and as a starting point for further development in this important facet of fire management.

Background

Throughout South East Asia the last few decades have seen persistent fires arising from a complex set of circumstances. While the underlying causes continue to be investigated and analysed some general themes and ideas have evolved. As well as the need for improvements in legal and regulatory frameworks (Abdullah 2002), options for changes in economic factors and policy incentives (Gouyon & Simorangkir 2002, Simorangkir et al 2002) the potential for local communities to play an ongoing role in fire management has been recognized.

More broadly there has been an continuing search for community-based natural resource management (CBNRM) alternatives as a response to the perceived failure of existing mechanisms in meeting conservation and land management objectives. Fires, as with CBNRM, often involves local people whose livelihoods may depend on it and whom generally suffer most the negative impacts of unwanted fires. There has been emerging discussion about the initial 'simplification' of CBNRM (Li 2002) and the need to comprehend the sophistication that often underpins many community activities.

The collected case studies and investigations of community-based fire management (CBFiM¹) perhaps frame the full range of situations and circumstances of communities and their fire. Manifestations of CBFiM range across service as fire fighters (Fredriksson 2002) to fire management without any interaction or support from government agencies or non-local institutions (Darlong 2002). To support the further evolution and confirm the potential for CBFiM to make a balanced and strong contribution to resolving fire management problems a set of core ideas or principles are needed. Project FireFight South East Asia and the Regional Community Forestry Training Centre for Asia and the Pacific worked together to consider an initial set of ideas through an intense workshop and field-testing. This paper is the results of that work.

Community Based Fire Management

There have been a series of major efforts on Community Based Fire Management (CBFiM) conducted by the Project FireFight South East Asia (PFFSEA) and its partners. Over the last half decade, a number of concrete efforts have been made to characterize what CBFiM means and to outline its cohesiveness with other community based approaches. A review of these efforts will provide some context for the current initiative to assess community-based approaches with a consistency analytical process.

In 1998, a paper on the role of indigenous use of fire in forest management and conservation was presented at an International workshop held by the Regional Community Forestry Training Center for Asia and the Pacific (Jackson & Moore 1998). In preparation of this paper, its authors found that relevant, high quality, published or unpublished, information on community involvement in fire management was difficult to find. The authors were also surprised that many of the participants at this workshop argued that communities did not have any role to play in managing forest fires, other than as causes of them.

In response to these findings, Project FireFight South East Asia and RECOFTC sought to outline a series of steps to gather the information available and assess the interest in CBFiM. In December 2000, these two organisations began the dialogue on this topic by holding a regional

¹ We use the acronym CBFiM to differentiate Community Based Fire Management from Community Based Forest Management, for which CBFM has become a well accepted abbreviation

workshop in Bangkok, Thailand. Due to the wide spread interest in attending this workshop both Project FireFight and RECOFTC sought a larger audience with a larger conference entitled Communities in Flames. The conference was a necessary first step for collecting more examples of CBFiM and raising awareness of this issue. The attendance of over 120 people from 21 countries was a strong endorsement of the view that communities can and do play an important role in the management of fires.

In conjunction with these events, a series of publications have been recently released:

- ◆ A Review of CBFiM for South East Asia (Karki 2002)
- ◆ Proceedings of the Communities in Flames Conference (Moore et al 2002)
- ◆ FAO Global Series of Case Studies on CBFiM produced in cooperation with PFFSEA and RECOFTC (FAO in press)

Despite these efforts, CBFiM still suffers from a lack of clarity and subsequently institutional support. The linkages with community based natural resource management (CBNRM) and community forestry has continually been emphasized and strengthened through these documents and events. Fire management issues have potential to add a theme to an already diffuse group of CBNRM disciplines. Since the beginning of the dialogue on CBFiM five years ago, it was stressed that CBFiM has to be within the context of overall land use planning and natural resource management. Rather than taking on an independent identity, CBFiM was to be an integral part of an overall community capacity building process. To date, the CBNRM community has not picked up on this message. The lack of clarity on what CBFiM is and its working models has in part led to the lack of profile of it among the larger research/development communities, and in particular those interested in CBNRM.

CBNRM has been successful at transitioning from a field of interest to institutional levels. A simple web search demonstrates that a large number of research centres have bought into the concept with independent research programs, forums, and/or support networks. CBNRM has also been integrated into education and training which recognizes the technical and organizational capacity of communities in relation to managing natural resources. For CBFiM to advance in similar fashion, it will need to have assessment tools to characterize its community-based approaches with some sort of consistency and rigor. Some general models of CBFiM, and an assessment tool that would serve to examine these models in the field was needed.

The Concept

Part of the aim of this paper is to present some analytic tools which can be applied in communities to analyse the context for CBFiM. These tools are essentially rapid appraisal methods². These tools are in an early stage of development and were initially prepared by a small working group at a workshop held in Thailand in April 2003. They were field tested in a very preliminary way at two sites in Northern Thailand. The purpose of this paper is to introduce the tools and to report briefly on the outcomes of the field tests, in order to make the tools available for testing by other interested parties.

² At this stage the tools are rapid appraisal tools, not participatory appraisal tools. However it is assumed that, with further testing they could be modified into genuine participatory tools, involving community participation in the assessment process.

Definitions and Terminology

During the last few years, there has been quite a lot of discussion about what we, in this paper, refer to as Community-Based Fire Management (CBFiM). However, the term has been used to describe such a wide variety of different ways in which communities are involved in fire management, that it is difficult to make any systematic comparisons or generalisations. One of the things we need is a definition that is precise enough to enable us to make useful generalisations about somewhat similar things, while being flexible enough to enable us to look at a variety of approaches. We need a definition based on essential features.

The definition we propose is:

CBFiM is a type of 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.

One characteristic of this definition is that attempts to define CBFiM, without confusing the definition by incorporating an arguable separate definition of fire management. Thus, “fire management” is taken to any fire prevention or “management” 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 where people simply carry out paid work for a fire control agency or another agency outside the community.

This is consistent with a trend in Community Based Forest Management (and various other terms with similar meanings), which sees the essence of genuine community participation in terms of some element of community power over decision-making. “Peoples’ participation” is very much a buzz-phrase in contemporary rural development and natural resource management, but it can refer to so many different types of involvement that it has become a very vague concept. Arnstein (1969) points out that the word “participation” is used in many ways, ranging from forms of non-participation (such as manipulation), through tokenistic forms of participation (“consultation”, “informing”) to forms of real participation such as “partnership”, delegated power” and “citizen control”.

Consistent with this view of participation, we see participatory CBFiM as requiring some real degree of community empowerment. In this sense “power” is defined as the capacity to have a genuine input into making real implementable decisions. Decision-making of this kind involves input into the setting of fire management objectives and deciding practices.

It is important to understand here that a community role in decision-making does not necessarily mean total control, but that the community has a real input, perhaps in partnership with other stakeholders (such as forest departments) in the decision-making process.

One advantage of this definition is that it gives us a basis for identifying “real” CBFiM from a nebulous category, which would include any sort of involvement by local people in programs, which may be “owned” outside the community. At the same time, it is based on a defining characteristic, rather than on the basis of assumptions about what makes CBFiM work. (Some people suggest that tenure is important in motivating communities to participate in CBFiM. But this is an issue relating to what might make CBFiM work - a question of analysis - rather than being a factor in its definition.)

In order to make the definition of CBFiM useful, it is necessary to be clear about what is meant by “community”. This word is commonly used in two completely different ways. One sense carries with it the idea of a group of people who live within a particular locality. The second

sense is that of a “community of interest” (the “international community”, the “arts community”, the “conservation community”). Our definition of CBFiM relates to a group of people resident in a locality.³ The boundaries of this local group and its territory depend on local conditions and it can be thought of as the local group who would need to act together in some collective way for fire management. In some situations this might be a single village, in others a group of villages surrounding a forest or grassland, in yet another it might be the residents of a local government unit.

This emphasis on locality does not imply that only local residents should be involved in fire management. Obviously there are other stakeholders (people who can be affected by the outcomes of fire management and people who can affect the outcomes). Partnerships between local people and other stakeholders are quite consistent with CBFiM. But an approach that starts with local actors and works out to include other stakeholders involves different strategies than one, which starts by identifying all stakeholders and includes local residents as just one category.

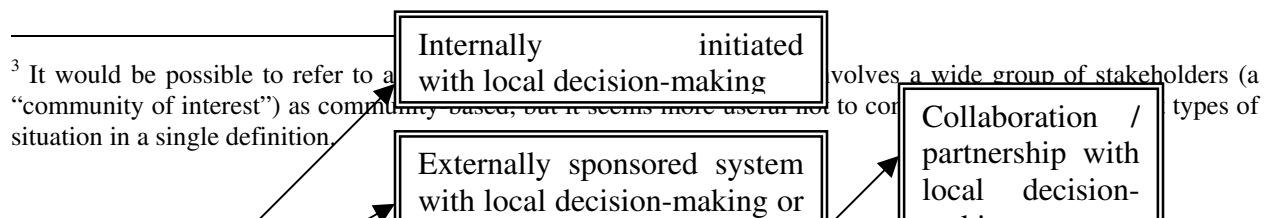
It is important to stress that the use of the word “community” does not imply homogeneity. On the contrary, all communities have some degree of heterogeneity in terms of economic interests, power and many other characteristics. These differences often have important consequences in fire management as one interest group may be advantaged by fires that negatively affect others. In CBFiM, the community identifies a group of people who need to cooperate (and negotiate) in order to act effectively according to agreed (and negotiated) objectives. There is no assumption that cooperation will occur.

Types of CBFiM Systems

Sometimes CBFiM arrangements are initiated by communities themselves. For example, swidden cultivators consciously use and manage fire as part of their systems of forest farming. Other communities regularly use controlled fire to burn crop residue on agricultural land. Australian Aborigines traditionally used controlled fire to reduce fuel for large scale unmanaged fires and also to modify habitat for animals they hunted. These locally initiated systems may be very old, but communities continually initiate new fire management systems as a result of emerging needs.

While some community fire management practices are locally initiated, others are set up at the initiative of outside agencies, such as forest departments. Typically, these externally sponsored systems recruit community members into committees or working groups to manage fires. It is possible to distinguish between externally sponsored community approaches where there is meaningful community involvement in decision-making and approaches where the community is involved in carrying out activities determined by others (such as providing labour to build firebreaks). Figure 1 was formulated to demonstrate these various community approaches. Using this diagram, one can assess that some modes of management do not allow for community input but do allow for community involvement (dashed lines). Such scenarios are not considered CBFiM as per the definition previously given. Although there is some emphasis on whether the system is initiated internally or externally, it should be noted that the initiation is not as important as the amount of credibility given to local decision making (double lines).

Figure 1: Various Modes of Community Input in Decision Making in Fire Management



Analysis of CBFiM Systems

Frequently, local communities are blamed for causing fires either by negligence or deliberately. While they often do start fires, there are many other sources (such as commercial interests) and many fires started within communities have important functions (such as agricultural production, or fuel reduction). Any attempt to improve and support CBFiM must start with an understanding of the causes and functions of various types of fires, and with their implications to various stakeholders within and outside a community.

It is necessary to know where a fire started, before expecting a local community to manage its effects. Similarly whether various stakeholders see a fire as beneficial or damaging is important before deciding what management is appropriate. The technical and organisational capacities of communities should also be identified.

Assessment Tools

Analytical tool (Table 1) that could be used by practitioners in the field (development workers, researchers, NGOs, etc.) to further assess fire(s) at the community level has been drafted. Since there are different types of fire in the world, one could split them into those that are wanted and those that are unwanted. Since there are multiple stakeholders in any fire issue, it is important to be clear that this table is used first to assess the communities perspective (insider) and then “other” stakeholders will need to be interviewed to get other perspectives (outsider). For the user to understand the application of this table, the columns are defined below (Section A). Due to the nature of the team formulating this rapid assessment tool, it was necessary to clearly outline some of the assumptions made (Section B). This analytical table was then tested in two villages to see whether it has merit. These two examples are set out in the following section (Section C).

Table 1: Community-Based Fire Management Analytical Table

Types of Fire Being Assessed within a community perspective				
Point of Origin	Impact (+/-)	Ability to Change	Intent to Change	Shared Objectives

Insider	Outsider	Inside	Outside			

A. Column Definition for using Community-Based Fire Management Analytical Table

Point of Origin: the starting point of the fire as perceived by the insider and outsider.

Since there may be more than one kind of fire with impact on the community, this column is used to gather information on the kind of fire (wanted/unwanted, agricultural, prescribed, etc.) and the stakeholder that may have caused it (insider/outsider, non-timber forest product collector, hunter, etc.). Since there may be two perspectives on who set the fire, two sub columns are used to distinguish between perspectives of the community and the outsiders that are interviewed. If the community has several types of fire, a horizontal dashed line may be used to separate the information for each particular kind of fire.

Impact (+/-): This column is to identify the positive or negative impact that this fire may have on the community (insider) and other stakeholders (outsider). Since fires have many types of impacts, there is an additional table (Table 2: Fire Impacts) to guide the researcher to identify appropriate questions to determine the impact of one particular kind of fire. If there is more than one kind of fire being assessed in this table, then the researcher needs to fill in one for **each** kind of fire impacting the community. For simplicity, this column in this table can be filled in with an overall positive or negative sign with reference to the Fire Impacts Table. If the researcher does not use the Fire Impacts Table, then detail as to what type of fire effect is being evaluated should be noted in this column.

Ability to Change:

This column is the most important column of the table. It is also the hardest to assess. This refers to the community's capacity to organize itself. In the case of fire, this means the capacity to prevent, prepare, respond and to recover. It may be that the community has the capacity to change but not in terms of fire and it must be inferred through other information (i.e. there can be evidence that the community is organized and acting on other matters **and could act** on fires if needed). This is a judgement that the researcher must make based on interviews and observation. This means that the village-based interviews may have few questions on fire and focus on community organizational capacity. The researcher will need to adapt to the situation to ask the appropriate questions to decipher this "ability to change". This column should be filled with information on how the community is organized (forest management committees, villages rules, communication systems, etc.). It may also be used to demonstrate the communities understanding of fire issues.

Intent to Change: This is the relative need or intent to change based on the information collected in the field. This column can be answered with a simple yes or no since it is inherently linked to the ability to change, and answer the question: Would the community change if it were possible?

Shared Objectives: As communities are heterogeneous, shared objectives are to be formulated through some form of negotiations within the community. Conflict management may be a useful tool to reach consensus on CBFiM objectives. This column is also intended to collect information on insider and outsider perspectives so that shared interests are investigated. This can be particularly useful information and this rapid assessment may stimulate dialogue between

stakeholders for collaborative management agreements in some cases. Shared objectives as far as identified should be completely set out in this column.

B. Principles/Assumptions used when designing Community-Based Fire Management Analytical Table

- The context for generating this CBFiM Analytical Table (Table 1) is one of collective action and the potential to manage fire at a local level. It should not be used for evaluating management systems at larger scales.
- Governmental administrative structures (national, provincial, district and local) may not be logically connected to local or community defined geographic areas.
- Community-initiated or initiated externally sponsored is not as important as whether the community is involved in the decision-making process. The Table provides an opportunity to demonstrate when and where communities can act – and therefore reduce the blame that often surrounds communities and their fire.
- Communities are balancing ecological impacts with livelihood interests (positive and negative impacts are proxy for both). Positive and negative impacts from the community perspective have ecological considerations inherently embedded within their livelihood interests.
- Fire management systems can be classified by the locus of decision-making power. The assumption made is that decision-making will likely lead to

- collective action.

Table 2: Fire Impacts Table

Fire Type:				
<i>Impacts</i>	Inside		Outside	
	<u>Positive</u>	<u>Negative</u>	<u>Positive</u>	<u>Negative</u>
<i>Ecological</i>				
<i>Environmental</i>				
<i>Social</i>				
<i>Safety</i>				
<i>Health</i>				
<i>Economics</i>				
<i>(subsistence and livelihood)</i>				
<i>Political</i>				

Principles/Assumptions used when designing Fire Impacts Table

- Each use of Table 2 is intended to assess the impacts of one particular kind of fire from insider and outsider perspectives.
- It may be easy to miss appropriate stakeholders from the outset and this appraisal tool is meant to be flexible in structure and add stakeholder groups as they present themselves.
- This table should not represent only one perspective (not only a rural perspective).
- Interest groups within Table 1 (Insider and Outsider) are implicit to the community scale. Similarly, the definition of community determines impacts “inside” or “outside”.
- In gathering data for Table 2 some stakeholders will not be affected (in a positive or negative way) by the particular kind of fire and are thus absent in the columns

Conclusion

Previous investigations into what comprises CBFiM systems have emphasized the need for communities to have a “sense of ownership”. This “sense” demonstrated 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. In the process of developing some key definitions and terminology for CBFiM, this discussion paper has documented a shift away from putting emphasis on this “sense of ownership” or tenure based rights to the various modes of community input in decision-making. Decision-making of this kind involves input into the setting of fire management objectives and deciding practices. It is important to understand here that a community role in decision-making does not mean total control, but that the community has a real input, perhaps in partnership with other stakeholders (such as forest departments) in the decision-making process.

Literature Cited:

Abdullah, A. 2002 A review and Analysis of Legal and Regulatory Aspects of Forest Fires in South East Asia. Project FireFight South East Asia, pp 51.

Arnstein, Sherry R. (1969) A Ladder of Citizen Participation. Journal of the American Institute of Planners, Vol 35: 216-224.

Darlong, V. 2002. Traditional community-based fire management among the Mizo shifting cultivators in Mizoram in northeast India. In: Moore, P.F., Ganz, D., Tan L.C., Enters, T. & Durst, P.B. 2002. Communities in Flames: proceedings of an international conference on community involvement in fire management. FAO & Project FireFight South East Asia, RAP Publication 2002/25. Pp 133.

Fredriksson, G. 2002. Extinguishing the 1998 forest fires and subsequent coal fires in the Sungai Wain Protection Forest, East Kalimantan, Indonesia. In: Moore, P.F., Ganz, D., Tan L.C., Enters, T. & Durst, P.B. 2002. Communities in Flames: proceedings of an international conference on community involvement in fire management. FAO & Project FireFight South East Asia, RAP Publication 2002/25. Pp 133.

Ganz, D.J. and Moore, P.F. (2002). Living with Fire In: Communities in Flames Proceedings of 1st International Conference on Community Involvement in Fire Management (Moore, P., Ganz, D., Tan, L.C., Enters, T. & Durst, P. eds.), FAO RAP Publication 2002/25, 133 p.

Guyon, A. & Simorangkir, D. 2002. The economics of fire use in agriculture and forestry – A preliminary review for Indonesia. Project FireFight South East Asia pp79.

Jackson W J and P. F. Moore (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. September 1998

Karki, S. 2002. Community involvement in and management of forest fires in South East Asia. Project FireFight South East Asia 39.

Moore, P.F., Ganz, D., Tan L.C., Enters, T. & Durst, P.B. 2002. Communities in Flames: proceedings of an international conference on community involvement in fire management. FAO & Project FireFight South East Asia, RAP Publication 2002/25. Pp 133.

Simorangkir, D., Moore, P.F., Haase, N. & Ng, G. 2002. Workshop Report: Land clearing on degraded lands for plantation development – A workshop on the economics of fire use in agriculture and forest plantations, Kuching, 24-25 October 2002. Project FireFight South East Asia Pp47.