

## **Annexes – CBFiM case studies**



## Annex 1

# CBFiM in Namibia: the Caprivi Integrated Fire Management programme

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### EXECUTIVE SUMMARY

The Integrated Fire Management (IFM) programme in the Caprivi region was begun in 2006 to support community, national parks and forestry in the region. Caprivi is a 300 km finger-like projection of semi-arid tropical savannah in northeast Namibia. The majority of the region (71 percent) is communal land, and the population of 100 000 live a predominantly rural existence. Traditional use of fire includes slash and burn agriculture, management of grazing lands, natural product harvesting, hunting, pest control and honey collection.

National fire management policy focuses on fire prevention and suppression, and implementation consists of discouraging burning through public awareness campaigns, firebreak networks and community wildfire suppression. In Caprivi, this policy was consolidated in 1996 through the Namibia–Finland Forestry Programme (NFFP). A strong CBFiM component facilitated the extension of national policy to the local level. Since the withdrawal of Finnish support in 2001, the nature of implementation has changed in that it relies upon legislation and negative reinforcement, such as threat of punishment, to discourage burning. As a result of widespread use of slash and burn agriculture, uncontrolled fires affect more than 50 percent of Caprivi every year. These fires impact community livelihoods through the loss of natural resources, property and life. Current national policy provides communities minimal opportunity to resolve this problem.

The Caprivi programme implements a pilot CBFiM policy to establish fire management that complements the environment, land use, resources and capacity of communities. It is implemented through a fire management strategy based on controlled burning, decentralized community fire management decision-making and integrating CBFiM into regional fire management.

Implementation of the pilot CBFiM policy in Caprivi has established fire management in communal land that has brought tangible livelihood benefits to communities through improved land use, reduction of uncontrolled fires and improved environmental management. Community ownership and the ability of individual community members to control fire management are essential to

achieving effective implementation over 10 000 km<sup>2</sup> without costly machinery and resources.

The achievements of the pilot CBFiM policy in Caprivi have led to its adoption into national fire management policy; its principles could also be applied to other southern African nations.

## INTRODUCTION

The Caprivi Integrated Fire Management programme was begun in 2006 to support CBNRM, national parks and forestry in the region. The government, NGOs, community and private stakeholders developed the Caprivi Integrated Fire management Strategy (2007–11), which is currently implemented over 10 000 km<sup>2</sup> of land. The majority of Caprivi is communal land (71 percent), and a pilot CBFiM policy is central to the strategy. The CBFiM policy aims to establish fire management that complements the natural environment, land use, resources and capacity of the community. The policy involves:

- developing a fire management strategy based on controlled burning as an effective tool in managing wildfires, land use and the environment;
- decentralization of fire management decision-making and implementation to the community; and
- integrating CBFiM into regional fire management.

The Directorate of Forestry of the Ministry of Agriculture, Water and Forestry regulates the implementation of CBFiM policy with funding and technical assistance from the support agencies Integrated Rural Development and Nature Conservation and Community Forestry Namibia and the German Development Service.

## BACKGROUND

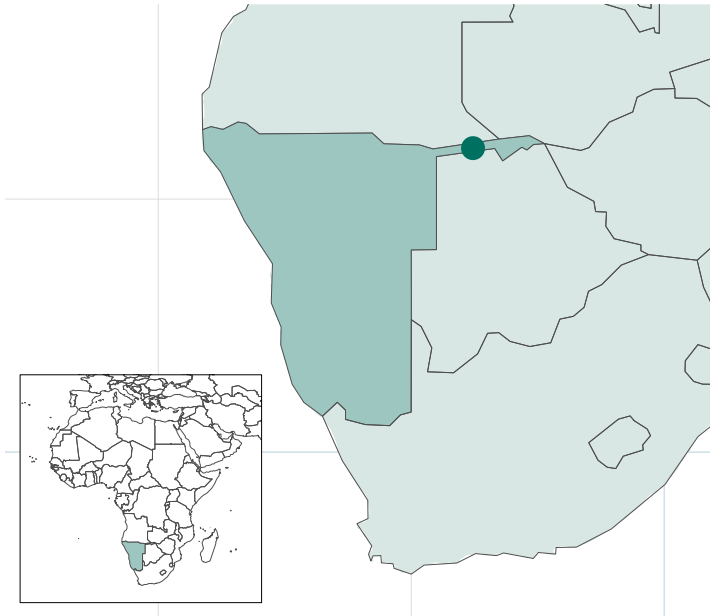
### Caprivi region

Caprivi is a 300 km finger-like projection of semi-arid tropical savannah of northeast Namibia in sub-Saharan Africa (Figure, next page). Annual rainfall is highly variable, with an annual average of 600–700 mm and distinct wet and dry seasons. Permanent rivers (Chobe, Kavango, Kwando and Zambezi) supporting riverine woodlands and floodplains traverse thick deposits of Kalahari sands dominated by savannah woodlands.

Caprivi has a population of approximately 100 000 comprising the Bayeyi, Khwe (San), Mafwe, Mbukushu and Subiya ethnic minority groups (Central Statistical Office, 2001). They have a predominantly rural existence in which subsistence farming and natural resources are important sources of livelihoods. Natural resources include grazing for livestock, building materials (timber and thatching grass), firewood, medicinal plants, wild fruits and honey. CBNRM projects supplement income from government salaries or pensions and small-scale farming enterprises.

Traditional use of fire includes slash and burn agriculture, management of livestock grazing, management of natural product harvesting management, hunting, pest control, protection from wildlife and honey collection.

FIGURE  
Location of the Caprivi IFFM



### National fire management policy

Namibia has maintained a fire-prevention and suppression fire management policy since colonial administrations revoked local burning practices and control by traditional authorities 30–50 years ago. The Directorate of Forestry regulates fire management through the Forest Act of 2001 (Government of Republic of Namibia, 2001), which is mainly concerned with: prohibiting fires within forest reserves, declaring fire hazard areas and specifying landowner liability for fire damage. The lighting of fire on communal land is illegal without authorization from the Directorate of Forestry.

The formalization of national policy to strengthen the coordination of fire prevention and suppression among government, private and community stakeholders occurred only recently, through the Draft National Forest and Veld Fire Management Policy (Directorate of Forestry, 2005). Implementation consists of discouraging burning through: education and awareness campaigns, firebreak networks and community training in wildfire suppression. Controlled burning, although recognized as a fire management tool, is rarely implemented.

### National fire management policy in the Caprivi region

National policy implementation in Caprivi was consolidated in 1996 through the NFFP. The Pilot Project for Forest Fire Control aimed to reduce fires in East Caprivi to improve the environment and living standards of local people. A strong community participation component extended national policy through fire-prevention education and awareness, community firebreak maintenance contracts and wildfire suppression training and mobilization. It was modified in 1998, as the East Caprivi Integrated Forest Fire Management Project, to emphasize

that fire is a suitable land-management tool, if carefully timed and used (Goldammer, 2001).

Implementation was comprehensive while Finland was providing funding (€3 million) and technical support. However, it is unclear how effective the programme has been in improving rural livelihoods in East Caprivi, as the impacts of wildfires and the benefits of improved fire control are difficult to quantify (Kamminga, 2001). Implementation has been less comprehensive since the withdrawal of Finnish support in 2001, and the Directorate of Forestry now relies largely upon legislation and the threat of punishment to discourage the lighting of fires.

The widespread use of slash and burn agriculture to prepare land for crops continues in Caprivi. Coinciding with the late dry season, when weather conditions and fuel characteristics cause intense fires, uncontrolled crop-field fires lead to extensive wildfires. Uncontrolled fires between August and October affect more than 50 percent of Caprivi every year, and this pattern has not changed over the past 17 years (National Remote Sensing Centre, 2002; Integrated Rural Development and Nature Conservation, 2006). These fires negatively impact community livelihoods through the loss of natural resources, property and life.

Current national policy provides communities with minimal capacity, resources and opportunity to resolve this problem. Communities have recommended both restoring their rights to practise controlled burning and community decision-making to achieve effective fire management on communal land in Caprivi.

### **CAPRIVI PILOT CBFiM POLICY**

The pilot CBFiM policy aims to establish fire management on communal land that complements the environment, land-use, resources and capacity of communities. The policy is based on integrating existing community skills, knowledge and institutional structures with sustainable fire management strategies and ecological requirements. The CBFiM policy is implemented through a fire management strategy based on: controlled burning; fire management decision-making and implementation that has been decentralized to the community; and CBFiM that is integrated into regional fire management.

### **Fire as a resource**

The CBFiM policy employs a fire management strategy centred on controlled burning to manage wildfires, land use and the environment. Based on holistic management principles, the strategy integrates traditional burning practices, contemporary land use and environmental requirements. Managing fire as a resource focuses on the benefits of fire as opposed to its negative impacts, which is the case in existing national policy implementation.

Land-use productivity and sustainability is enhanced through the use of controlled burning to improve grazing, natural product harvesting and agriculture. The timing, intensity and frequency of burning is prescribed to specific land-use objectives in specific areas. This approach creates an extensive mosaic burn pattern that minimizes the occurrence and extent of wildfires by reducing and fragmenting

fuel loads. Infrastructure and sensitive resource areas are protected by strategic reduction of fuel loads around these assets. The environment is enhanced through both the reduction of fire intensity and the diversification of fire regimes to enhance habitat and biological diversity.

By controlling when, where and how fires occur, communities can minimize their negative effects and maximize the benefits of fire without costly machinery or resources. Using fire behaviour, local knowledge of the area and strategic implementation, safe and efficient controlled burning is achieved with minimal equipment (such as matches, drip torch, fire beater etc.). Firebreaks are limited to implement controlled-burning around the infrastructure. Firebreak networks are no longer required, as existing roads and tracks provide sufficient access for the implementation of controlled burning.

### **Decentralization of fire management to the community**

The CBFiM policy decentralizes decision-making and implementation through fire management programmes that are specific to the individual community. The programmes enable communities to acquire the rights and responsibilities of fire management in their areas of authority. A development and implementation process based on the Forest Act of 2001 and regulated by the Directorate of Forestry guides the coordination of fire management within communities.

Communities register a fire management area that encompasses their area of authority. Each community elects a fire management committee: a functional group of between four and six community members that develops and implements a fire management programme on the community's behalf. The committees are trained in the process of implementing a fire management programme with an emphasis on managing people as much as managing fire. The traditional authority administers the committee and arbitrates fire-related disputes within the community.

CBFiM programme planning involves comprehensive community coordination, liaison and awareness. Stakeholder meetings, 'door to door' consultation and field surveys are used to identify land-use requirements, priority resource areas, infrastructure, fire history and hazards. A strategic fire management plan that is centred on the objectives of community land use details the timing, location and methodology of operational activities. The plan is submitted to the Directorate of Forestry as an application for a permit to burn.

CBFiM implementation is coordinated within the community through continual liaison and awareness by the committee. Conveying individual roles and responsibilities in community fire management and notification of programme activities are priorities. Community participation in operational activities of the committee is encouraged to extend fire management skills and knowledge to the community.

Controlled burning is implemented in the early dry season when weather conditions and fuel characteristics lead to low intensity fires of limited extent. Implementation includes: firebreak maintenance, infrastructure and resource protection burning, controlled land use and mosaic burning, and wildfire management.

### **Integrating into regional fire management**

CBFiM programmes are integrated into regional fire management through structured collaboration and coordination with neighbouring communities, national parks and gazetted forests. Community committees develop collaborative strategies with fire managers in areas that share a common boundary with their fire management area. The alignment of fire management objectives, and shared resources and workloads, all facilitate effective fire management with the least effort and resources. Importantly, boundary firebreaks, requiring considerable resources to construct and maintain, are no longer necessary using this approach.

### **CONCLUSIONS**

Implementation of the pilot CBFiM policy in Caprivi has established fire management in communal land that has brought tangible livelihood benefits to communities through improved land use, has reduced uncontrolled fires and improved environmental management. Strategies centred on controlled burning, capacity-building of the community and collaborative fire management between neighbours enable these benefits to be achieved effectively over 10 000 km<sup>2</sup> without costly machinery and resources.

Integrating traditional institutional structures and knowledge with existing community skills into the CBFiM policy is essential in developing community fire management ownership. Programmes specific to the community further contribute to a sense of ownership through the recognition of cultural diversity and community value in regional fire management. Community ownership facilitates responsibility at leadership, committee and wider community levels.

Effective CBFiM programmes are driven by the ability of individual community members to control fire management and to improve their livelihood through enhanced land use. By basing implementation of fire management on existing skills, knowledge and institutional structures within the community, programmes are accessible and controllable by individual community members. Their committees possess the necessary skills, knowledge and equipment independently to plan and implement fire management safely and efficiently. Individuals control fire management by directing the committee's activities within their resource areas. Settlement of fire-related disputes is commensurate with individual resources and is arbitrated locally through a process accessible and open to individual contribution.

Effective and sustainable CBFiM programmes require a long-term development process to build fire management skills, as well as knowledge and collective fire management responsibility in communities. The operational relationship between committees and the community evolved primarily through personal experience. Benefits of controlled burning were demonstrated in the first year through tangible livelihood improvements. Widespread reliance on committees was experienced in the second year with uncoordinated use of fire ceasing. Wildfires from uncontrolled slash and burn agriculture remain a challenge to the programmes. In an effort to build collective fire management responsibility throughout the community, committees do not suppress uncontrolled fires from these sources.



Land-use improvements following three years of implementation stimulated the proactive participation of the wider community in operational activities. CBFiM programme sustainability relies upon the extension of fire management skills, knowledge and responsibility to the wider community, thus enabling independent fire management in the future.

Integration of CBFiM into regional fire management through the collaboration and coordination of neighbours establishes effective fire management over large areas of differing land tenure and use. Regional fire management is composed of programmes specific to property; these are coordinated as an adaptable and robust programme driven by grassroots level decision-making and implementation.

The achievements of the pilot CBFiM policy in Caprivi have initiated its adoption into national fire management policy. Its principles could also be applied in other southern African nations with comparable fire management scenarios including Angola, Botswana, Mozambique, Zambia and Zimbabwe.

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