

BRAZILIAN-GERMAN COOPERATION PROJECT
“PREVENTION, CONTROL AND MONITORING OF BUSHFIRES IN THE CERRADO”

INTEGRATED FIRE MANAGEMENT PROGRAM

Backstopping Report 2016

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1 INTRODUCTION

The Brazilian-German Cooperation Project “*Prevention, Control and Monitoring of Bushfires in the Cerrado*” has been developing Integrated Fire Management (IFM) strategies to protect biodiversity, enhance community livelihoods and reduce greenhouse gas (GHG) emissions in the Brazilian Cerrado.

In 2013, the Project carried out several events, including national and international seminars, to introduce the principles and concepts of IFM and how these may strengthen protected area fire management in Brazil.

In 2014, the Project supported IFM activities in three pilot Conservation Units (CU): *Estação Ecológica Serra Geral do Tocantins (ESEC)*, *Parque Estadual do Jalapão do Tocantins (PEJ)* and *Parque Nacional Chapada das Mesas do Maranhão (PNCM)*. The focus of these Programs was to develop key IFM elements not widely recognized or institutionalized within existing fire management frameworks, principally:

- Controlled Fire Management - the strategic implementation of controlled burning in the early dry season to reduce fire intensity, the area burnt annually and minimize large-scale uncontrolled fires.
- Community-Based Fire Management (CBFiM) - a collaborative IFM approach to promote and develop fire management capacity and responsibility amongst communities to improve land use objectives and community livelihoods.

In 2015, the Project supported consolidation of IFM planning, implementation, monitoring and evaluation in existing pilot CUs and extended to four new pilot areas: *Terra Indígena Xerente (TIX)*, *Parque Nacional Sempre Vivas (PNSV)*, *Parque Nacional Araguaia (PNA)* and *Área de Proteção Ambiental do Jalapão (APA)*. Institutionalization of IFM strategies and technical skills focused on capacity building CU managers and key staff, fire brigades, government partners and other key stakeholders.

In 2016, the Project continued supporting development of IFM activities in existing pilot areas and extending into two new CUs: *Terra Indígena Kraho (TIK)* and *Parque Estadual Lajeado (PEL)*.

Technical services of this consultancy were provided in May and June 2016 and this backstopping report summarizes the IFM Program achievements to date and provides recommendations for 2017.

2 OBJECTIVES 2016

In 2016, the third year of implementation, the objectives of the IFM Program were to:

- i) Strengthen and extend understanding of the principles and techniques of Controlled Fire Management and CBFiM in protected areas
- ii) Develop operational experience of landscape scale application to achieve CU / biodiversity management, improve community livelihoods and reduce GHG emissions
- iii) Facilitate institutionalization of IFM elements into existing fire management frameworks through participatory approaches with Project partners and key stakeholders.

3 MAIN FINDINGS and RECOMMENDATIONS

Main findings of the IFM Program in 2016 and recommendations for 2017 are presented in the following sections and draw upon the collective results and experiences of the IFM Program from 2014, 2015 and 2016.

3.1 INTEGRATED FIRE MANAGEMENT TEAMS

IFM Teams in each CU comprised a combination of managers and key staff, IFM agents and fire brigades. They carried out IFM activities throughout the annual cycle of planning, implementation, monitoring and evaluation.

Managers and key staff are responsible for the overall coordination of the IFM Program in each CU and represent the permanent staff of the IFM Team.

IFM Agents are accomplished individuals (5-10 years field experience), from resident and neighbouring communities, temporarily contracted to support IFM coordination and implementation.

Fire Brigades are larger operational units, from resident and neighbouring communities, temporarily contracted to support IFM activities and suppress uncontrolled wildfires during the late dry season.

To date, the IFM Program has supported and built the capacity of IFM Teams, through:

- i) Promoting IFM Team structures to integrate the skills and knowledge of a diverse range of local and institutional role players
- ii) Demonstrating the benefits of alternative IFM Team structure and operational logistics through introduction of IFM agents and earlier contracting of fire brigades
- iii) Strengthening collaborative management mechanisms between local level partner institutions to develop equipment / resource sharing between IFM Teams
- iv) Developing 'On the Job Training' programs to build the capacity of IFM Teams in operational IFM skills and knowledge
- v) Developing 'Training of Trainers' programs to build the capacity of managers and key institutional support staff to transfer IFM skills and knowledge
- vi) Establishing inter-institutional mechanisms to share IFM experiences and knowledge amongst IFM Teams, institutional support staff and resident communities
- vii) Establishing field-based fire information and navigation systems (Android OS cellular phones with GPS) to support operational IFM activities
- viii) Introducing use of improved drip torch (Pinga Fogo) design, motorbikes and quadbikes to access remote areas for landscape scale controlled burning operations.

Recommendations

- *Develop long-term (3 year) operational IFM training courses in combination with IFM Program expansion into new areas in future years*
- *Establish IFM agents as permanent positions in each CU to coordinate and implement IFM activities*
- *Procure Android OS Cellular Phones with GPS for CU managers, IFM agents and fire brigade chiefs and other key operational fire management staff in 2017*
- *Introduce aerial burning training to access remote areas of large CUs.*

3.2 CONTROLLED FIRE MANAGEMENT

To date, the IFM Program has introduced and strengthened understanding and operational experience of strategic controlled burning in the early dry season to reduce fire intensity, burned area and large-scale uncontrolled fires. The main achievements involved:

- i) Developing understanding of fire seasonality (ie early vs late dry season), behavior and effects in various Cerrado vegetation types and landscapes
- ii) Establishing controlled burning decision-making capabilities (when, where and how) to implement self-limiting fires of low intensity
- iii) Strengthening operational experience of fuel load management strategies and controlled fire behavior in various Cerrado vegetation types and landscapes
- iv) Establishing controlled burning strategies to protect fire-sensitive vegetation, improve ecosystem function (ie water cycling) and achieve biodiversity management objectives
- v) Collaborative implementation combining skills and knowledge of IFM Teams, institutional support staff and resident communities
- vi) Demonstrated applicability of controlled fire management to support CU management objectives in various representative Cerrado ecosystems.

Recommendations

- *Further develop IFM Team controlled fire management skills and capacity through long-term (3 year) operational IFM training courses (see Section 3.1)*
- *Expand the IFM Program into Cerrado ecosystems and landscapes not represented to date to diversify controlled fire management experiences.*

3.3 COMMUNITY-BASED FIRE MANAGEMENT

To date, the IFM Program has developed understanding and operational experience of CBFiM approaches to strengthen community fire management capacity and responsibility in CUs. The main achievements involved:

- i) Developing CBFiM strategies with resident individual/households through collaborative and participatory planning to improve land use and protect community resources
- ii) Integrating traditional fire knowledge and burning practices with modern fire management techniques through joint implementation of strategic controlled burning
- iii) Promoting locally resident (or family origin) community members for contracting as IFM Agents and fire brigades to strengthen community participation
- iv) Developing authorization mechanisms (ie Permit to Burn) to enable independent implementation of controlled burning by resident community individual/households
- v) Demonstrated applicability of CBFiM to support both community livelihoods and CU fire management outcomes in representative socio-economic settings of the Cerrado.

Recommendations

- *Further develop collaborative IFM mechanisms between neighboring individual/households to create 'Community IFM Areas'*
- *Pilot the implementation of authorization mechanisms (ie Permit to Burn) within 'Community IFM Areas' to facilitate joint implementation between neighboring individual/households*
- *Develop a simple field guide on CBFiM and best practice use of traditional knowledge and community burning practices in the IFM Program.*

3.4 LANDSCAPE SCALE APPLICATION

To date, the IFM Program has developed understanding and operational experience of controlled fire management and CBFiM strategies at landscape scales to support CU / biodiversity management, improve community livelihoods and reduce GHG emissions. The main achievements involved:

- i) Establishing realistic 3 year operational targets to commence shifting existing fire regimes of high intensity large-scale uncontrolled wildfires to low intensity fire regimes
- ii) Introducing controlled burning operations in March / April, the transition period between the wet and early dry season, to lengthen the controlled burning season duration
- iii) Scaling up controlled burning operations to landscape scale and expanding CBFiM activities to the wider community
- iv) Broadening community and public awareness of CBFiM activities and experiences to strengthen confidence in the IFM Program
- v) Establishing structured collaborative IFM mechanisms between neighboring CUs to coordinate IFM within the context of the broader landscape
- vi) Demonstrated applicability of controlled fire management and CBFiM at landscape scale to support CU fire management and community livelihoods in representative settings of the Cerrado.

Recommendations

- *Develop collaborative mechanisms to incorporate resident communities in landscape scale controlled burning activities*
- *Consolidate and expand collaborative IFM mechanisms between neighboring CUs with clear roles and responsibilities of local level stakeholders*
- *Incorporate CUs, other protected area and land tenure categories (ie private or leasehold land) not currently represented in the IFM Program*
- *Develop IFM Program expansion in future years in combination with operational IFM training course development (see Section 3.1)*

3.5 INSTITUTIONALIZATION

To date, Project partners have displayed confidence in the IFM Program and expressed strong commitment to incorporate these into existing fire management frameworks. The main achievements involved:

- i) Improving institutional awareness of the IFM Program through inclusion of additional Project partners and participation of institutional support staff in field-based activities
- ii) Strengthening research and monitoring of environmental and socio-economic responses to applied fire regimes to support institutionalization processes
- iii) Increasing incorporation of the key IFM elements into operational fire management plans at the CU and municipal levels
- iv) Reviewing existing national/state legislative and policy frameworks to support implementation of key IFM elements (ie controlled burning) beyond a pilot stage
- v) Increased public awareness of the IFM Program through television news reports, institutional website articles, local radio broadcasts and newspaper articles
- vi) Demonstrated applicability of the IFM Program to support CU fire management in several states within the Cerrado Biome.

Recommendations

- *Develop concrete evidence of IFM Program results to showcase at the International Seminar in November 2016 to garner wider Project partner awareness, consolidate high level institutional support and secure higher level political support*
- *Develop exchange visits with institutional partners from other states (ie Força Tarefa Prevencendo do Minas Gerais) to share experiences, knowledge and results of the IFM Program*
- *Develop harmonized IFM policies at national and state levels, based on decentralization, to provide clear institutional mandates of IFM Program implementation in the various land tenures throughout the Cerrado*
- *Develop IFM awareness programs to disseminate IFM policy and implementation strategies to civil society, other government institutions and political levels*
- *Establish an IFM Program protocol / framework to:*
 - *Support CU managers to incorporate key IFM elements into existing CU Management / Protection Plans*
 - *Support institutional coordinators to structure approval and evaluation of IFM Program activities*
 - *Support integration of all key role players, local level partner organizations and other important stakeholders into IFM Program planning and implementation.*