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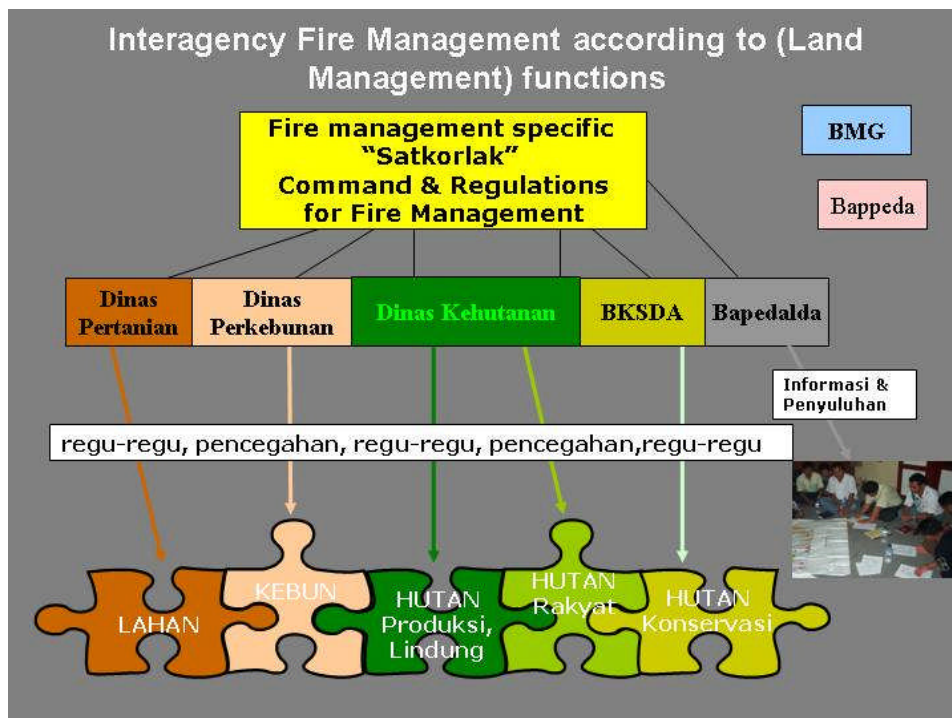
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# Institutional Development for Integrated Fire Management in South Sumatra

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Final Report

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## **PREFACE**

The South Sumatra Forest Fire Management Project (SSFFMP) is a technical co-operation project jointly funded, in terms of the financing memorandum IDN/RELEX/1999/0103, by the European Commission and by the Government of the Republic of Indonesia through the Ministry of Forestry (MoF).

This report has been completed in accordance with the project Overall Work Plan (OWP) and

in part fulfilment of Activity 2.1, “Support government agencies, private companies, rural communities and other relevant stakeholders to improve fire management capacity at province and district levels.”

to achieve Result 2 “Stakeholders enabled to organize and apply fire management mechanisms in their areas.”

to realise the five-year project purpose, which is “Aid and facilitate the establishment of a coordinated system of fire management at province, district, sub district and village level throughout South Sumatra province in which all involved stakeholders, including the private sector, work together to reduce the negative impact of fire on the natural and social environment.”

This report has been prepared with financial assistance from the Commission of the European Communities. The opinions, views and recommendations expressed are those of the author and in no way reflect the official opinion of the Commission.

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The report is acknowledged and approved for circulation by the Project Co-Directors when duly signed below.

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## **EXECUTIVE SUMMARY**

The institutional arrangements in South Sumatra for fire management, including mandates and responsibilities, roles and functions as well as interaction within the politico-administrative framework and related key stakeholders have to be clarified. The involved parties have to conclude agreements on rules and regulations about fire prevention and its responsible use. The involvement of all relevant stakeholders in fire management is essential since forest and fire management authorities alone are unable to cope effectively with the complexity of the increasing fire problems. The result is an overemphasis on fire suppression and inadequate attention to the underlying causes of harmful forest and land fires.

The process of designing a more comprehensive fire management concept for South Sumatra has only recently started. However, it is characterized by a lack of technical and human capacity and overlapping and unclear functions and roles of involved actors. Activities of fire management are not carried out in a systematic and focused manner. There is an obvious lack of an overall fire management master plan or concept on how, when and who is to be involved and mobilized at what stage of fire danger. Prevention measures on a routine basis are still rare.

The underlying fire causes as well as the variety of fire ignition locations in South Sumatra suggest forming a work core group on fire management to specify SOP for an efficient and effective fire management system in South Sumatra. This group shall be selected from the already existing SATKORLAK/SATLAK fire management tasks force institutions consisting of about six to eight members and necessarily including the three major government agencies that are Forestry, Environment and Natural Disaster Management. Besides these three the Estate Crop and Agriculture Department, the Provincial Bureau for Information and Communication (INFOKOM), representatives of local communities and the private sector are to be further included. The idea of an Integrated Fire Management (IFM) concept is to be advocated to these agencies by considering aspects of a functioning multi-level governmental structure that is able to dynamically support activities in the field of Community Based Fire Management (CBFiM). Integrated Fire Management shall be understood as a comprehensive fire management strategy combining information, prevention, preparation and fire suppression activities as an integrated element of an overall sustainable resource management framework.

An overall fire management master plan with detailed SOPs following Fire Danger Criteria is envisaged to be accomplished by this work group. Additionally, services, development of guidelines and coordination and communication structures have to be developed. Existing examples of fire danger criteria, cooperative agreements and a fire management master plan can be adapted or modified from existing examples such as in East Kalimantan.

Insufficient budget is always a reason for limited fire management activities. However, there are indications that a lack of an IFM understanding, hence the lack of a comprehensive fire management master plan aggravates the present fire management budget situation in South Sumatra. By accomplishing a fire management master plan, roles and responsibilities among

involved parties will be clarified in an iterative process and will assist to submit successful budget proposals to the government.

## **RINGKASAN EKSEKUTIF**

Pengaturan kelembagaan pengelolaan kebakaran di Sumatera Selatan, termasuk didalamnya yang memuat mandat dan tanggung jawab, peran dan fungsi serta interaksi dalam kerangka politik administratif dengan para stakeholders kunci terkait, kiranya perlu diperjelas. Para pihak yang berkepentingan hendaknya sampai pada kesepakatan tentang ketentuan dan peraturan perihal pencegahan kebakaran dan penggunaan api yang bertanggung jawab. Keterlibatan dan peran serta dari segenap stakeholders terkait didalam pengelolaan kebakaran sangat penting karena instansi pengelola hutan dan kebakaran sendiri pasti tidak akan mampu secara efektif mengendalikannya karena sangat kompleks dan senantiasa bertambahnya permasalahan yang terkait dengan kebakaran. Sebagai akibatnya adalah terlalu banyaknya perhatian yang hanya ditujukan kepada upaya pemadaman kebakaran semata dan kurangnya perhatian kepada akar penyebab permasalahan kebakaran hutan dan lahan yang sangat merugikan tersebut.

Proses perancangan konsep pengelolaan kebakaran yang lebih komprehensif bagi Sumatera Selatan pada saat ini telah dimulai. Namun demikian, upaya tersebut ditandai dengan ketiadaan kemampuan baik teknis maupun sumberdaya manusia dan tumpang tindih serta ketidakjelasan fungsi dan peran dari para aktor yang terlibat. Kegiatan pengelolaan kebakaran tidak dilaksanakan dengan cara yang sistematis dan terarah. Dijumpai ketiadaan masterplan pengelolaan kebakaran yang menyeluruh atau konsep tentang bagaimana, kapan dan siapa yang akan terlibat dan yang akan dimobilisasi pada tingkat bahaya kebakaran yang bagaimana. Upaya pencegahan sebagai basis yang seharusnya rutine masih jarang ditemui.

Akar penyebab kebakaran maupun variasi lokasi sumber terjadinya kebakaran di Sumatera Selatan mendorong kepada perlu dibentuknya suatu kelompok kerja inti tentang pengelolaan kebakaran, guna menyusun prosedur standar pelaksanaan atau Standard Operating Procedure (SOP) bagi sistim pengelolaan kebakaran yang efektif dan efisien di Sumatera Selatan. Kelompok kerja ini seyogyanya dipilih dari lembaga dan instansi yang duduk dalam Satuan Tugas dari SATKORLAK/SATLAK yang sudah ada, yang terdiri dari 6-8 anggota yang perlu dimasukan juga tiga instansi penting dibidang ini yakni Kehutanan, Lingkungan Hidup dan Penanggulangan Bencana Alam. Disamping tiga instansi tersebut diatas, Dinas Perkebunan dan Dinas Pertanian, Biro Informasi dan Komunikasi Propinsi (INFOKOM), wakil-wakil dari masyarakat setempat dan sector swasta juga perlu dilibatkan lebih jauh. Ide tentang konsep pengelolaan kebakaran yang integratif perlu ditekankan kepada segenap lembaga dan instansi diatas dengan mempertimbangkan aspek-aspek struktur berbagai strata pemerintahan yang berfungsi dan dapat secara dinamis mendukung aktifitas dilapangan berdasarkan Pengelolaan

Kebakaran Yang Berbasiskan Masyarakat atau Community Based Fire Management (CBFiM). Pengelolaan Kebakaran Yang Integratif atau Integrated Fire Management (IFM) harus difahami sebagai strategi pengelolaan kebakaran yang komprehensif dengan mengkombinasikan informasi, pencegahan, persiapan dan kegiatan pemadaman kebakaran sebagai suatu elemen yang terintegrasi dalam kerangka pengelolaan sumber daya alam lestari yang menyeluruh.

Sebuah Masterplan Pengelolaan Kebakaran yang lengkap dilengkapi dengan Standard Operating Procedure (SOP) yang detail yang mempergunakan juga kriteria bahaya kebakaran, diharapkan dapat diselesaikan oleh kelompok kerja diatas. Lebih lanjut, pelayanan dan pembuatan pedoman-pedoman dan koordinasi serta komunikasi harus dikembangkan. Contoh-contoh yang sudah ada seperti kriteria bahaya kebakaran, perjanjian kerjasama dan masterplan pengelolaan kebakaran, dapat dipakai atau dimodifikasi dari contoh-contoh yang sudah ada seperti yang dari Kalimantan Timur.

Anggaran yang tidak cukup senantiasa menjadi alasan terbatasnya kegiatan pengelolaan kebakaran. Namun demikian, ada indikasi bahwa ketidak tahuan tentang pengelolaan kebakaran yang terintegratif, dengan demikian juga tidak adanya masterplan pengelolaan kebakaran yang komprehensif memperburuk situasi ketiadaan budget bagi pengelolaan kebakaran di Sumatera Selatan. Dengan membuat masterplan pengelolaan kebakaran, peran dan tanggung jawab diantara para pihak yang terlibat akan tampak jelas didalam proses yang berjalan dan akan sangat membantu didalam penyusunan usulan anggaran yang dapat disetujui oleh pemerintah.

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## Abbreviations

Abbreviation	Indonesian	English
ADB		Asian Development Bank
APHI	Asosiasi Pengusaha Hutan Indonesia	Association of concessionaires
ASEAN		Association of South East Asian Nations
AVHRR		Advanced Very High Resolution Radiometer
BAKOM PKB	Badan Koordinasi Masyarakat Penanggulangan Keadaan Bencana	
BAKORNAS PBP	Badan Koordinasi Nasional Penganggulangan Bencana	National Co-ordinating Agency for Emergencies (Disasters)
BAPPEDA	Badan Perencanaan Pembangunan Daerah	Regional Development Planning Board
BAPPENAS	Badan Perencanaan Pembangunan Nasional	National Development Planning Board
BARSANAS	Badan SAR Nasional	National Search and Rescue Agency
BMG	Badan Meteorologi dan Geofiskia	Agency for Meteorology and Geophysics
BP HLSW UP-DIV PAM	Badan Pengelola Hutan Lindung Sungai Wain Unit Pelaksana Divisi Pemadaman	Sungai Wain protection forest management Unit- fire operation division
BPPT	Badan Pengkjian Dan Penerapan Teknologi	Agency for Assessment and Application of Technology
CBFiM		Community-Based Fire Management
Danramil	Komandan Daerah Militer	
Damkar	Komandan Daerah Kebakaran	
Dishub	Dinas Perhubungan	Transportation Department
Dishut	Dinas Kehutanan	Forestry Department
Dis. Pemb. Masy.	Dinas Pemberdayaan Masyarakat	
Distan	Dinas Pertanian	
DJ PHKA	Direktorat Jenderal Perlindungan Hutan dan Konservasi Alam	Directorate General of Forest Protection and Nature Conservation
GTZ		German Technical Cooperation/ Gesellschaft fuer Technische Zusammenarbeit
IFFM		Integrated Forest Fire Management
JICA		Japan International Cooperation Aid
Kab.	Kabupaten	District
Kadishut	Kepala Dinas Kehutanan	Head of Forestry Department
KTR	Kantor	Bureau
KLH	Kementrian Lingkungan Hidup	Environmental Agency
LAPAN		
LSM	Lembaga Swadaya Masyarakat	Non Governmental Organisation
Menko Kesra	Mentri Koordinator Kesejahteraan Rakyat	Coordinating Minister for peoples well-fare
NGO	Lembaga Swadaya Masyarakat	Non Governmental Organisation
NOAA		National Oceanic Atmospheric Administration
PKHL	Pengelolaan Kebakaran Hutan dan Lahan	Forest and Land Fire Management
PUSDALKARHUTLADA	Pusat Pengendalian Kebakaran Hutan dan Lahan Daerah	Regional Forest and Land fire Control Centre
PUSDALKARHUTNAS	Pusat Pengendalian Kebakaran Hutan Nasional	National Forest Fire Control Centre
PUSDALKARHUT-LA	Pusat Pengendalian Kebakaran Hutan dan Lahan	Forest and Land fire Control Center
POSKOLAKDALKARHUT	Pos Komando Pelaksana Pengendalian Kebakaran Hutan dan Lahan	Command Post for Forest and Land Fire Control Implementation
POLRI	Kepolisian Negara Republik Indonesia	National Indonesian Police

SATGAS PBP	Satuan Tugas PBP	Task Force PBP
SATKORLAK PBP	Satuan Koordinasi Pelaksana PBP	Implementation Coordination Unit PBP
SATLAK	Satuan Pelaksana PBP	Implementation Unit PBP
SATLAKDALKARHUTLA	Satuan Pelaksana Pengendalian Kebakaran Hutan dan Lahan PBP	Implementation Unit for Forest and Land Fire Control
SfDM		Support for Decentralization Measures
SMCP		Strengthening the Management Capacities of the Ministry of Forestry
SSFFMP		South Sumatra Forest Fire Management Project
Subdin	Sub Dinas	Subordinate Agency
TIM SAR		Search and Rescue Team
TNI	Tentara Nasional Indonesia	National Indonesian Military
UPTD	Unit Pelaksana Teknik Daerah	Technical Implementation Unit
UPT-PKHL KPK	Unit Pelaksana Teknis Pengelolaan Kebakaran Hutan dan Lahan Kantor Pemadam Kebakaran	

## **1. Objective**

To initiate a structured multi-stakeholder consultation process leading to an institutional set up for an integrated fire management in South Sumatra by considering the present situation of decentralization and assessing existing fire management organizations in East Kalimantan and other provinces of Sumatra/Indonesia.

## **2. Introduction**

Fires are an increasing threat to the tropical environment in Indonesia. In 1997/98 some 11 million hectares of vegetation were impacted nation wide, affecting forest ecosystem, local livelihood, as well as private investment and contributing to global greenhouse gas emissions.

Augmenting pressure on forest resources, inadequate land use planning and an increase of El-Niño frequencies favour the conditions of widespread und uncontrolled fires. There are several fire-related problems ranging from smoke and haze, forest degradation and deforestation, losses in biodiversity and carbon store, soil erosion and its downstream impacts on economy and ecosystems to the immediate and long-term impacts on the livelihoods of local communities

Sumatra and Kalimantan are the main fire prone regions in Indonesia. Here it can be distinguished between fire prone zones in peat/wetland areas, where fires with negative impacts every dry season occur and fire prone zones in tropical (disturbed) rainforests, where fire is mainly a threat during strong El Niño events such as in 1997/98. Tropical peat land is an important reserve for terrestrial organic carbon, and hence its combustion is a major contributor to the global greenhouse gas emissions. Research suggests that the 1997/98 Indonesian fires increased global green house emissions up to 60 %, when estimated 0.81 - 2.57 Giga ton of carbon was released from fires in peat and wetlands. South East Asia as a whole contributes to the average annual emissions with about 10%

South Sumatra's main fire-prone zones are located in the districts of Banyuasin, Musi Banyasin, Ogan Komering Ilir (Figure 1) and their inland peat swamps and coastal wet-(peat) land areas. South Sumatra's total area burned due to uncontrolled wildfires was estimated to be 1.5 million hectares in 1997 (Table 1).

Table 1 : Estimate of burnt areas during the 1997 dry season in South Sumatra

Land status and land use	Burnt areas	
	Ha	% of total
<b>Non-forest areas</b>	<b>2,097,050</b>	<b>75</b>
<b><i>Controlled fires</i></b>	<b><i>1,501,000</i></b>	<b><i>54</i></b>
- irrigated rice	390,000	14
- shifting cultivation	894,000	32
- rice in swamp area	145,000	5
- land clearing in old rubber plantations by small holders	14,000	1
- land clearing in old coffee plantations	8000	0
- land clearing by plantation companies	50,000	2
<b><i>Uncontrolled fires (wildfires)</i></b>	<b><i>596,050</i></b>	<b><i>21</i></b>
- Oil palm/rubber and other big scale plantations	13,800	0
- Secondary forest	100,000	4
- Bush and shrub vegetation burnt by escaped sonor fires	290,000	10
- Bush and shrub vegetation	30,000	1
- Grassland	30,000	1
- Smallholders plantation area	30,000	1
- Transmigration area	250	0
- Others	102,000	4
<b>Forest land</b>	<b>700,988</b>	<b>25</b>
<b><i>Controlled fires</i></b>	<b><i>70,000</i></b>	<b><i>3</i></b>
- HPHTI industrial timber plantations, land clearing	70,000	3
<b><i>Uncontrolled fires (wildfires)</i></b>	<b><i>630,988</i></b>	<b><i>23</i></b>
- Primary and secondary forest in concession areas (HPH)	10,491	0
- HTI reforestation	14,494	1
- Reforestation in other than HTI	5,000	0
- Bush and shrub land	393,000	14
- Grassland, degraded forest	30,000	1
- Peat and swamp area for sonor	173,000	6
- Other	5,000	0
<b>Total controlled fires</b>	<b>1,571,000</b>	<b>56</b>
<b>Total wildfires</b>	<b>1,227,038</b>	<b>44</b>
<b>Total of all controlled and uncontrolled fires</b>	<b>2,798,038</b>	<b>100</b>

Source: Tacconi, 2003 based on Forest Fire Prevention and Control Project March 1999

## 2.1. Fire causes

Land preparation by smallholders and local cooperatives for agriculture and estate crop purposes, clearing activities for fishing grounds, transmigration schemes and subsequent invasion of wetlands, hunting reason, accidental and arson fires are the primary causes for controlled and uncontrolled fires in South Sumatra. Almost all fires can be attributed to human activities and many of them are wanted agriculture or other purpose fires. A detailed description of the fire causes in South Sumatra is given by *Bompard & Guizol (1999)*: “Land Management in the Province of South Sumatra, Indonesia. Fanning the flames: The institutional causes of vegetation fires”.



Figure 1: South Sumatra province and districts (Status 2003)

Fire causes and fire behaviour and thus fire management in tropical regions differ from the experiences made in the boreal regions. Therefore existing knowledge of fire management cannot be simply/easily adapted to the tropical context. Although the components of fire, namely heat, fuel and oxygen are always the same, the particular mixture of it, the surrounding environmental aspects and finally the circumstance of ignition sources and causes make fire and the necessary management answers in the tropics diverse.

People in Indonesia have been using fire for hundreds of years to clear the forest, to prepare the land for agriculture activities and for hunting reasons. These normally small-sized and “successful” controlled or prescribed fire uses are found in swidden cultivation of indigenous groups to prevent damage to neighbour fields and adjacent forest. However, the frequency of fires in Indonesia in the last three decades is a rather new phenomenon regarding the devastating extent and scale as well as the ensuing impacts. Indonesia with up to 231 million inhabitants hosting approximately 500 different ethnic groups as a “developing” country faces tremendous socio-economic and demographic changes. The rising population, the increasing amalgamation

of ethnic groups, related different behaviour and attitude towards natural resource management caused a rapid change in land use and consequently land cover types. These factors mostly drive the fire problem by increasing land tenure problems and conflicts as well as altering fuel conditions and thus fire behaviour. In addition to inadequate land rights certification and inadequate land management policy, the recurrent El Niño event every 3-5 and 10-15 years with various strong impacts, provides climate prerequisite favouring catastrophic fires such as in 1997/98 when almost 11 million hectare of different vegetation types burned.

## **2.2 Tropical fire management**

Tropical fire management cannot simply focus on technical aspects of fire management such as fire suppression efforts and related equipment needs. Although in Indonesia the use of fire for land preparation is prohibited (see table 5), only private companies but not impoverished settlers and smallholders can financially and technically afford the implementation of other means of land preparation. Since fires are deliberately set to prepare land the focus must be on prevention measures including substantial environmental campaigns and awareness rising and promoting responsible and environmentally safe fire use. However, incentives for locally based fire management or so called Community Based Fire Management (CBFiM) have to be directly related to the communities' needs and objectives for CBFiM must be sufficiently explained and acceptable to those communities. Local communities must have the responsibility and the authority to manage fires and at the same time have the full access to and benefit of the resources they are protecting. This furthermore implies that local resources tenure conflicts needs to be addressed.

To manage tropical fires the understanding of dependence of tropical fire behaviour from land cover/use needs to be enhanced. Therefore all parties involved in land management have to be engaged in land and fire management activities. Indonesia's current land management and land use planning system needs to be adjusted and strengthened to implement an appropriate and sustainable land use planning and to establish a regulatory framework for the sustainable management of natural resources that integrates fire management. For that reason a multi-level and multi-agency national/regional fire management structure is desirable that involves and supports local communities to carry out various aspects of successful CBFiM. Likewise the pro-active involvement of the private sector is necessary.

## **3. Work approach**

- Compiling, reviewing, and analysing the existing documents, laws and regulations with regard to the institutional development of an integrated fire management system in South Sumatra considering decentralisation aspects.
- Identifying representative project stakeholders by contacting, discussing and interviewing the major relevant "fire key partners" at the national, provincial and district level.
- Socialising of the Integrated Fire Management concept that comprises all major elements to the project stakeholders.

- Socialising and advocating SSFFMP and its components to the identified stakeholders with regard to the institutional incorporation of Integrated Fire Management into the existing Indonesian structures.
- Establishing contact and exchanging knowledge and expertise with the various project back stoppers, e.g. the GTZ decentralisation project.
- Reviewing and analysing the East Kalimantan IFFM concept of the UPTD fire agency with regard of possible (knowledge) transfer and application in South Sumatra.
- Proposing next steps for the institutional incorporation of Integrated Fire Management into the Indonesian context and structures with regard to the project's annual work plan.

The focus of the consultancy was on the analysis of the institutional arrangements and frame conditions for fire management in South Sumatra and in the model districts of SSFFMP, concerning the question: ***Whether and how the current institutional and organizational structures can be used in order to ensure effective fire management.*** The existing agencies and authorities to regulate, control, and enforce fire management policy and legislation were interviewed regarding their roles and functions to implement fire management tasks including the involvement of the local communities.

The studies and documentations are aimed to examine the effectiveness of fire management services, policy development, and coordination functions of the currently leading fire management organizations on national, provincial and district level. The findings are meant to serve as a basis to initiate and support the process of the institutional development concept for integrated fire management in South Sumatra. Furthermore, suggestions are made for coordinated efforts to implement an integrated system that is able to carry out task of Integrated Fire Management within the given Indonesian context.

Special attention was given to the provincial fire management agency in East Kalimantan. The model of a Technical Executing Unit (Unit Pelaksana Teknis Daerah –UPTD) in the Provincial Forest service as a coordination, service, and information body were reviewed regarding its effectiveness to perform the comprehensive activities of fire management including issuing regulations, fulfilling coordination and commanding tasks as well as having sanction power. Moreover, the study assessed the institutional arrangements for fire management defining mandates and responsibilities, roles and functions as well as interaction with the districts and thus with the Local fire Centres. Results served the recommendation whether or not an equivalent fire management agency is under current conditions desirable and **realistically** possible in South Sumatra.

In addition, the GTZ Decentralization project (SfDM-Support for Decentralization Measures) was consulted in order to gain expertise and support to regarding the institutional integration of fire management into the legal framework and government planning.

During the course of the study the team of the SSFFMP was as closely as possible involved and intensively consulted and existing experiences and expertise of individual team members integrated and used.

The following institutions, departments and other relevant organizations have been visited and consulted several times during the course of the consultancy (Table 2).

**Table 2: Visited institutions, departments and other relevant organisations/persons**

<b>Location</b>	<b>Institution/Organization</b>	<b>Subordinates/Position</b>
Jakarta	Ministry of Forestry	Directorate of Forest Fire Prevention and Control, Director
Jakarta	Ministry of Environment (LH)	Directorate for Environmental Degradation control, Head Land and Forest Division, Head
Jakarta	ASEAN	Senior officer Haze
Jakarta	GTZ – SfDM	Team leader and members of Support for Decentralisation Measures
Jakarta	GTZ –SCMP	Team Leader of Strengthening the Capacities of the Ministry of Forestry
Jakarta	GTZ IFFM	Team leader of Integrated Forest Fire Management Project
Bogor	CIFOR	Head of Fire project
Palembang	Provincial Forestry Service (Dinas Kehutanan)	Head and staff
Palembang	Provincial Environmental Agency Bapedalda	Head and members of f Environmental Agency
Palembang	Bappeda	Representatives
Palembang	Infokom	Head of Information and Communication Bureau
Palembang	Dinas Perkebunan	Head of Section Estate Crop Protection, Head of subsection Monitoring and Control of Damage
Palembang	BKSDA	Head of Natural Resource Conservation Agency
Palembang	PT. Musi Hutan Persada	Director and Public relations staff
Palembang	KesBangLinMas	Head of Agency Nation Unity and Civil Society Protection
Palembang	NGO's	Wetland International,
Jambi	BKSDA	Head of Administration section
Jambi	Tanam National Berbak Jambi	Head of Administration Section
Samarinda	Project IFFM	Project Members
Samarinda	UPTD PKHL	Head and members of UPTD Fire agency
Samarinda	Dinas Kehutanan Propinis	Head of the provincial Forest Service
Samarinda	Dinas Kehutanan, Tingkat Kabupaten KuBar	Head of the district Forest Service of West Kutai
Balikpapan	Bapedalda	Head of Environmental Agency Balikpapan City
Sanggatta	Dinas Ligungan Hidup, Dinas Kehutanan, Biro Ortala	Head of Environmental Agency and members of Forestry department, staff of regent office for organizational structures

#### **4. Relevant sectors in Indonesia**

Indonesia's fire management system is characterized by widely scattered tasks and responsibilities for land and forest fire control. Some 24 different government agencies share the



responsibility and coordination authority. *Simorangkir & Sumantri* (2002): “A Review of Legal, Regulatory and institutional aspects of Forest and Land Fires in Indonesia” give a detailed description of the institutional framework involved in fire management activities. Furthermore, *Bompard & Guizol* (1999): “Land Management in the Province of South Sumatra, Indonesia. Fanning the flames”, the Institutional causes of vegetation fires”, provide a detailed overview of the underlying institutional fire causes and describe the institutional shortcoming in terms of fire management in the province South Sumatra. The present report will not repeat these findings, but relies on them to focus on the given institutional situation of fire management in South Sumatra in particular, and in Indonesia in general and to formulate practicable recommendations.

Since these reports appeared some changes regarding the importance and role of the (fire management) institutions have occurred. By now, some institutions have reached their functionality, while others have lost importance and/or exist only in specific regions, e.g. such as the provincial fire control agency in East Kalimantan.

Fire management is a relatively new aspect in the organisational landscape of Indonesia. The past confusion and the overlap of tasks and functions may also be a product of the (international) pressure to respond to the recent catastrophic fire events. However, related government agencies did not fully oversee the consequent administrative, legislative and governmental alterations and synchronisations. In addition, one has to highlight that full operational fire management examples as such as the United States or Australia have build up their fire management systems and organisations over a period of more than 100 years, being in the advantageous position to have the necessary respective economic and scientific background. Indonesia has only recently started to gain experiences in fire management and to incorporate the understanding of its fire history into its institutional framework. In order to operate an efficient and effective fire management system in Indonesia, fire management policies and practices have to be based on Indonesian cultural/societal perceptions, political paradigms, methods, and techniques that are augmented by foreign expertise.

Existing laws and regulations (see Tab. 2 & 3) identify three government institutions as the main agents of an Integrated Fire Management System, i.e. the Ministry of Forestry, the Ministry of Environment, and the Natural Disaster Management Board. Figure 1 shows these institutions and their subordinates respectively representatives at provincial and district.

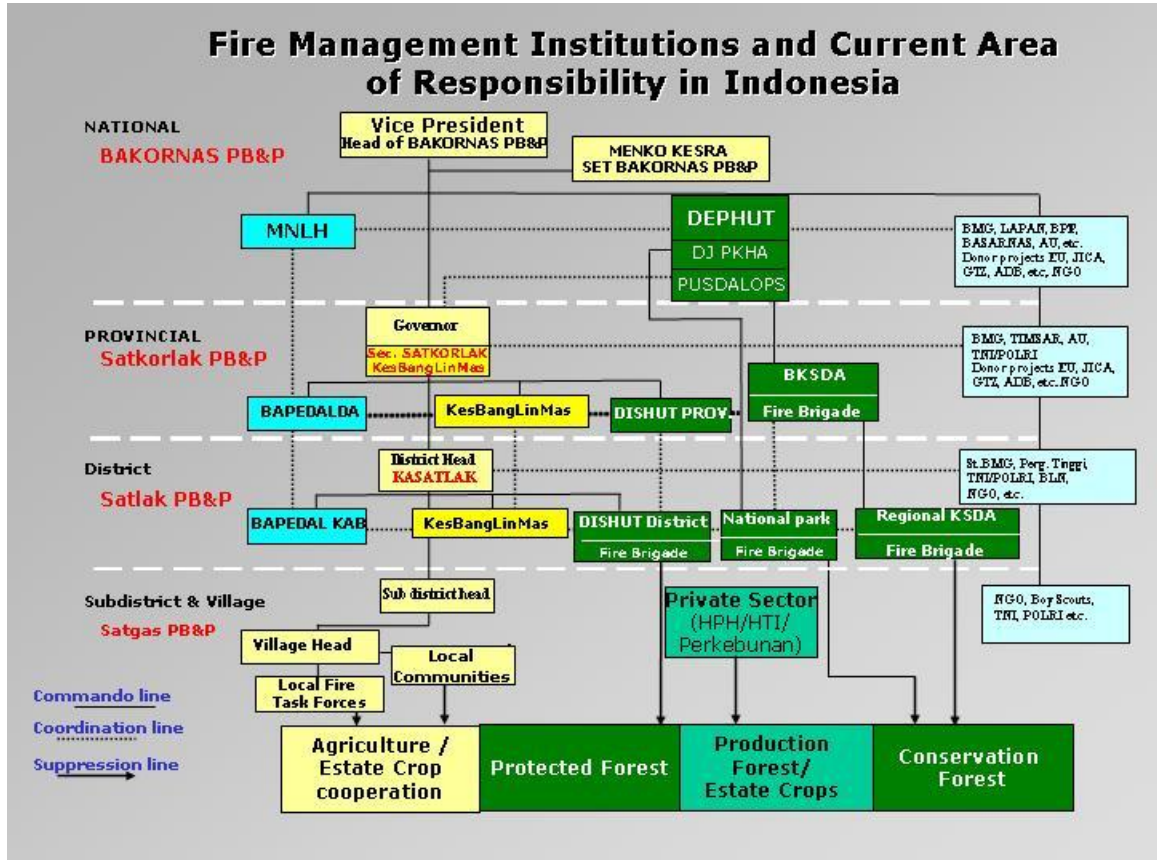


Figure 2 : Most important fire management organizations and area of operation in Indonesia

#### 4.1 National Coordination Board for Natural Disaster Management

There is no single lead institution responsible for fire management in Indonesia, however as indicated in Figure 1 there are three major players at the national level that are important and active in fire management aspects. At the national level the focus should be on these three institutions as main project stakeholders:

- I. Badan Koordinasi Nasional Penanggulangan Bencana dan Penanganan Pengungsi - BAKORNAS PB & P (National Coordination Board for Natural Disaster Management).
- II. Kementerian Lingkungan Hidup: Bidang Kebakaran Hutan dan Lahan (Ministry of Environment: Land and Forest Fire division).
- III. Departemen Kehutanan: Direktorat Penanggulangan Kebakaran Hutan (Ministry of Forestry: Forest Fire Prevention and Control Directorate)

BAKORNAS PBP is a non-structural incident command board led by the Vice President of Indonesia. It operates when multi-sectoral tasks require so. 9 Ministers, the Chiefs of Army and Police, and Governors of the affected provinces are members of the Board, involving other relevant parties as necessary.

The BAKORNAS secretariat handles the administration. The section for disaster management has the main tasks to prepare plans for disaster management including fire and haze incidents to synchronize and prepare guidelines, standards and procedures (Figure 3).

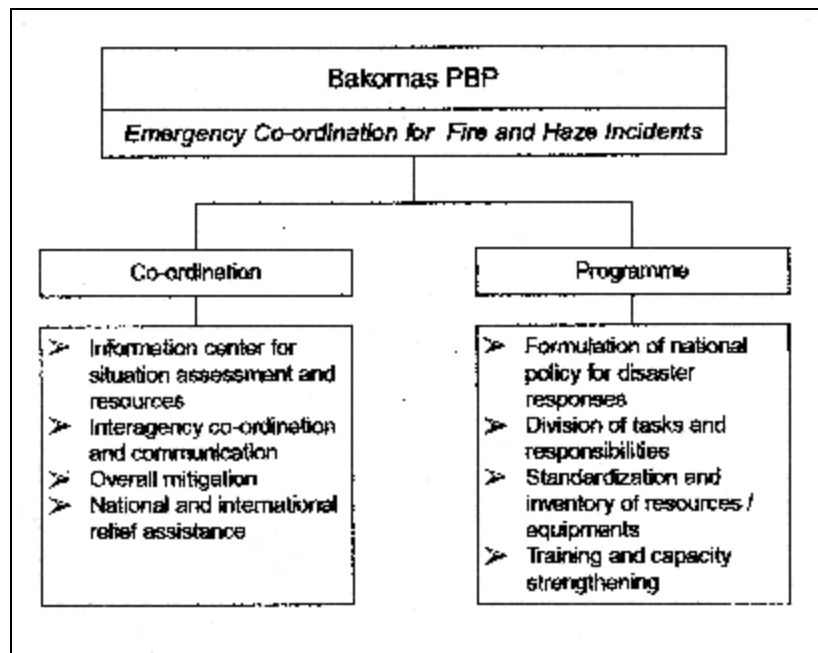


Figure 3: Roles and responsibilities of National Coordination Board for Fire and Haze Incidents

The respective structures of BAKORNAS at the provincial, district and subdistrict level are SATKORLAK, SATLAK and SATGAS PBP (see figure 4).

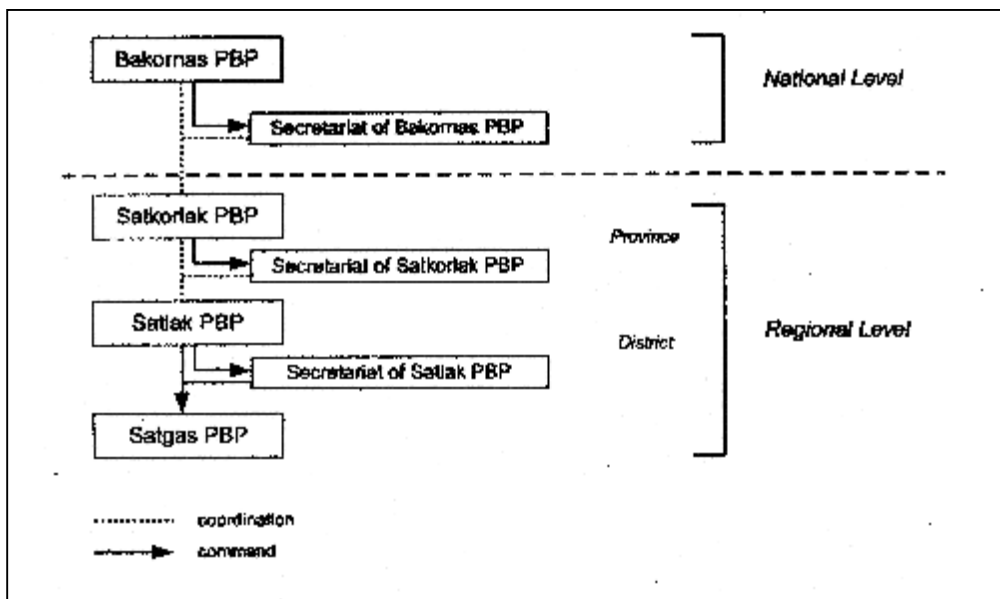
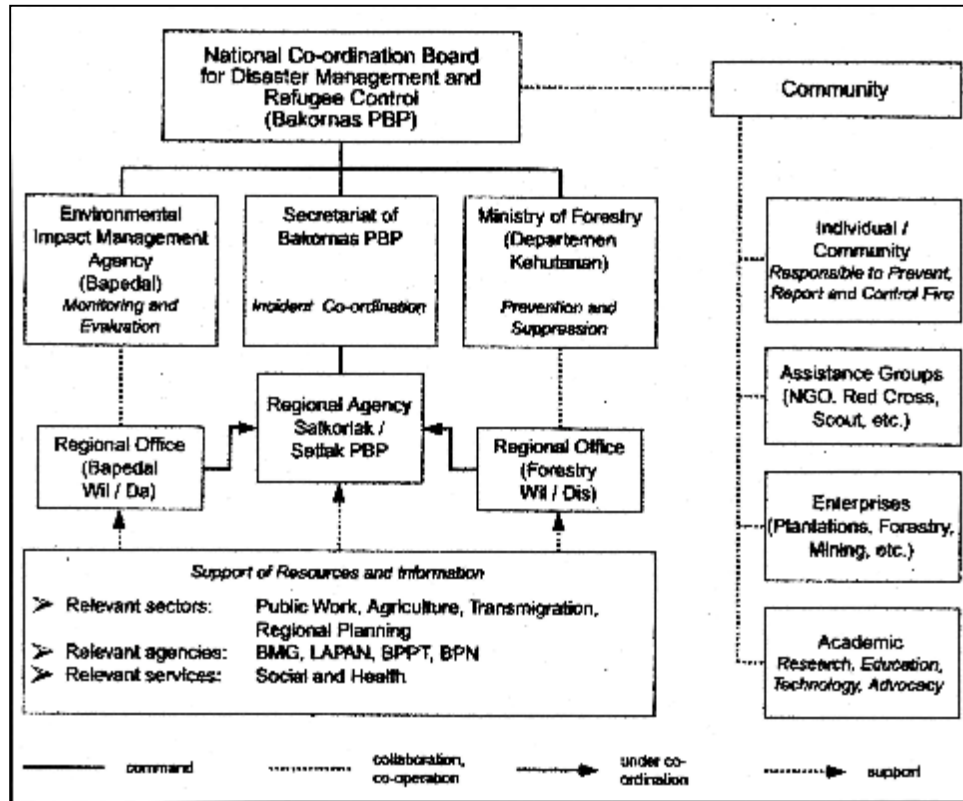


Figure 4: Structure of Bakornas PBP at the respective governmental levels

In 2000 the secretariat of Bakornas PBP published a brochure outlining the roles and

responsibilities for fire management tasks of these three main fire management agencies and other relevant sectors (Figure 5).



**Figure 5: Roles and functions of agencies involved in fire management tasks according to the BAKORNAS coordination system**

Nearly all important national regulations (Act, Government Regulation, Presidential Decree, Ministerial and Directorial Decree) on forest and land fire management in Indonesia have been issued by or to strengthen these three agencies. An overview is given in Table 2 and 3 (Directorial decrees).

**Table 3: Regulations regarding forest and land fires or related impact**

<b>Regulation</b>	<b>Issued</b>	<b>Remarks</b>
Act No.4/1982 on Basic Provisions for the Management of Living Environment	1982	
Government Regulation No.28/1985 on Forest Protection	1985	Will be strengthened
Forestry Ministerial Decree No.523/Kpts-II/ 1993 on Forest Protection in Concession Area	1993	Technical Guideline
Forestry Ministerial Decree No.188/Kpts-II/ 1995 on Establishment of the National Forest Fire Control Centre (Pusdalkarhutnas)	1995	Technical Guideline
Forestry Ministerial Decree No.260/Kpts-II/ 1995 on Guidelines for Forest Fire Prevention and Suppression Efforts	1995	Superseded Forestry Ministerial Decree No.195/ Kpts-II/1986
Decree of the Head of Environmental Impact Management Agency (Bapedal)No: Kep-135/1995 on Organisation and Work System of Bapedal	1995	
Decree of the Head of Environmental Impact Management Agency (Bapedal)No:Kep-136/ 1995 on Organisation and Work System of Regional Bapedal	1995	
Decree of the Minister for Environment No. Kep-18/MenLH/1995 on National Coordinating Team for Land Fire (TKNKL)	1995	
Decree of the Minister for Environment No Kep-07/MenLH/2/1996 on the Establishment of the Secretariat of National Coordinating Team for Land Fire (TKNKL)	1996	
Decree of the Minister for Environment No.Kep-40/MenLH/3/1997 on National Coordinating Team on Forest and Land Fire Control (TKNPKHL)	1997	
Forestry Ministerial Decree No.365/Kpts-II/ 1997 on National Mascot for Forest Fire Control	1997	Technical Guideline
Act No.23/1997 on Environment Management Superseded Act No.4/1982	1997	
Forestry Ministerial Decree No.97/Kpts-II/ on Emergency Procedure for Forest Fire Crisis	1998	
Revised Forestry Ministerial Decree No.260/ Kpts-II/	1995	
Act No.22/1999 on Regional Government Administration	1999	
Decree of the Minister for Forestry and Estate Crops No.107/Kpts-II/1999 on Plantation Permit	1999	
Act No.41/1999 on Forestry Superseded Act No.5/1967	1999	
Decree of the Coordinating Minister for People 's Welfare and Poverty Alleviation No. 06/Kep/Menko/Kesra/III/2000 on the Establishment of Judicial Coordinating Team for Forest and Land Fires	2000	
Government Regulation No.25/2000 on Government Authority and Provincial Authority as a Autonomy Region	2000	
Government Regulation No.84/2000 on Guidelines for Regional Organization	2000	
Presidential Decree No.3/2001 on National Coordinating Board for Disaster Management and Refugee Control (Bakornas PBP)	2001	Superseded Presidential Decree No.106/1999
Secretary Bakornas PBP Decree No.1/2001 on Organisation and Work System of Bakornas PBP Secretariat	2001	

Government Regulation No.4 of 2001 on Control of Environmental Degradation and Pollution in Correlation with Forest and Land Fires	2001	
Government Regulation No.39/2001 on Execution of De-concentration	2001	
Decree of the Head of Environment Impact Control Agency (Bapedal)No:Kep-25/2001 on Organisation and Work System of Bapedal	2001	Superseded the Decree of the Head of Environment Impact Control Agency (Bapedal) No:Kep-135/1995
Secretary of Bakornas PBP No.2/2001 on National Guidelines for Disaster and Refugee Control	2001	
Forestry Ministerial Decree No.123/Kpts-II/ 2001 on Organisation and Work System of Ministry of Forestry (Directorate of Forest Fire Control)	2001	
Presidential Decree No.111/2001 on National Coordinating Board for Disaster Management and Refugee Control (Bakornas PBP)	2001	Superseded Presidential Decree No.3/2001
Presidential Decree No.4/2001 regarding the changes of the Presidential Decree No. 108/2001 on Organization Unit and Task of Echelon I of the State Ministry	2001	Dissolved the Environmental Impact Management Agency (Bapedal) and merged it into the Ministry of Environment
Presidential Decree No.2/2002 regarding the changes of the Presidential Decree No. 101/2001 on Status, Task, Function, Authority, Organization and Work System of the State Ministry	2002	
Government Regulation No: 8 Guidelines for Regional Organization	2003	Will supersede Government Regulation No.84/2000 on Guidelines for Regional Organization

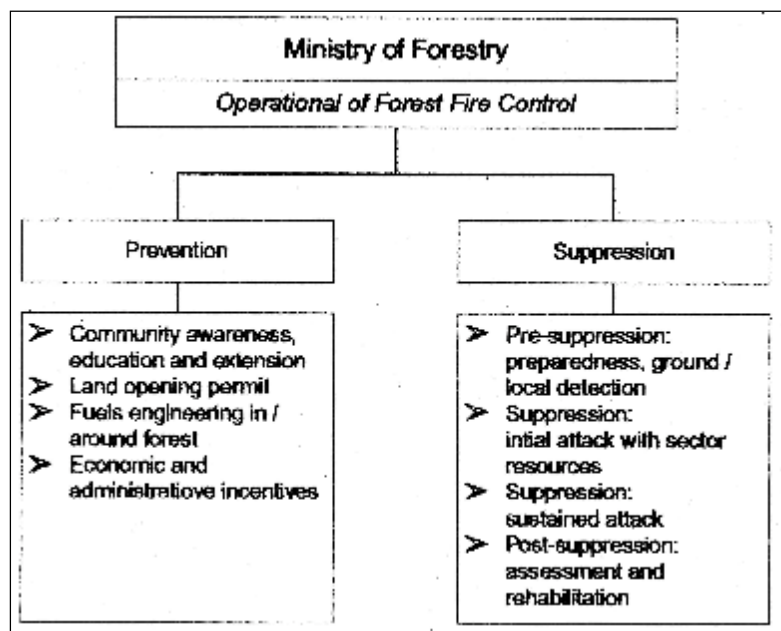
**Modified after:** *Simorangkir & Sumantri* (2002): “A Review of Legal, Regulatory and institutional aspects of Forest and Land Fires in Indonesia” and *Bompard & Guizol* (1999)

**Table 4: Directorial decrees**

<b>Decrees of the Director General of Forest Protection and Nature Conservation</b>	<b>Issued</b>
No.243/Kpts/Dj-VI/94 on Technical Guideline for Forest Fire Prevention and Mitigation in Forest Concession Area and other Forest Land Uses	1994
No.244/Kpts/Dj-VI/94 on Technical Guideline for Forest Fire Suppression	1994
No.245/Kpts/Dj-VI/94 on SOP for the Use of Forest Fire Suppression Equipment	1994
No.246/Kpts/Dj-VI/94 on Guideline for Creating and Posting Forest Fire Sign	1994
No.247/Kpts/Dj-VI/94 on Guideline for Standardize of Forest Fire Prevention and Mitigation Tools	1994
No.248/Kpts/Dj-VI/94 on SOP for Forest Fire Prevention and Mitigation	1994
No.81/Kpts/Dj-VI/95 on Implementation Guideline for Forest and Land Fire Control	1995
No.46/Kpts/Dj-VI/97 on Technical Guideline for Alertness and Safety on Forest Fire Suppression	1997
No.47/Kpts/Dj-VI/97 on Technical Guideline for Controlled Burning	1997
No.48/Kpts/Dj-VI/97 on Guideline for Forest Fire Control Command System	1997
No:21 & 22/KPT/DJ-IV/2002 on Structure and guidelines of/for the Fire Brigades for Fire Control and Prevention	2002
<b>Decree of the Director General of Forest Utilization</b>	
No.222/Kpts/Dj-VI/94 on Guideline for Land Preparation without Burning for Timber Estate Development	1994
<b>Decree of the Director General of Plantation</b>	
No.38/KB.110/SK/Dj.BUN/05.95 on Guideline for Land Clearing without Burning for Estate Crops Development	1995

**Modified after:** *Simorangkir & Sumantri* (2002): “A Review of Legal, Regulatory and institutional aspects of Forest and Land Fires in Indonesia”

According to BAKORNAS structure (Fig. 5) the Ministry of Forestry holds the responsibility for fire prevention and fire control (suppression) in its respective areas of responsibility. Figure 6 shows a more detailed description of the prevention and suppression tasks.



**Figure 6: Roles and responsibilities of the Ministry and Forestry according to BAKORNAS**

#### **4.2 Forest Fire Brigades (BRIDALKAR - Manggala Agni)**

As Figure 1 already indicates the direct responsibility and command for forest (fire) protection of the Ministry of Forestry is limited to National Parks (Taman Nasional), Nature Reserves (Cagar Alam), protected forest (Hutan Lindung) considered as Zones of Conservation Forest (Kawasan Hutan Konservasi) and production forest that is not operated by forest concessions. Technical executing agencies are the National Park offices and the Agency for Natural Resource Conservation (BKSDA) under the responsibility and command of the Directorate General of Forest Protection and Nature Conservation (DJ PHKA).

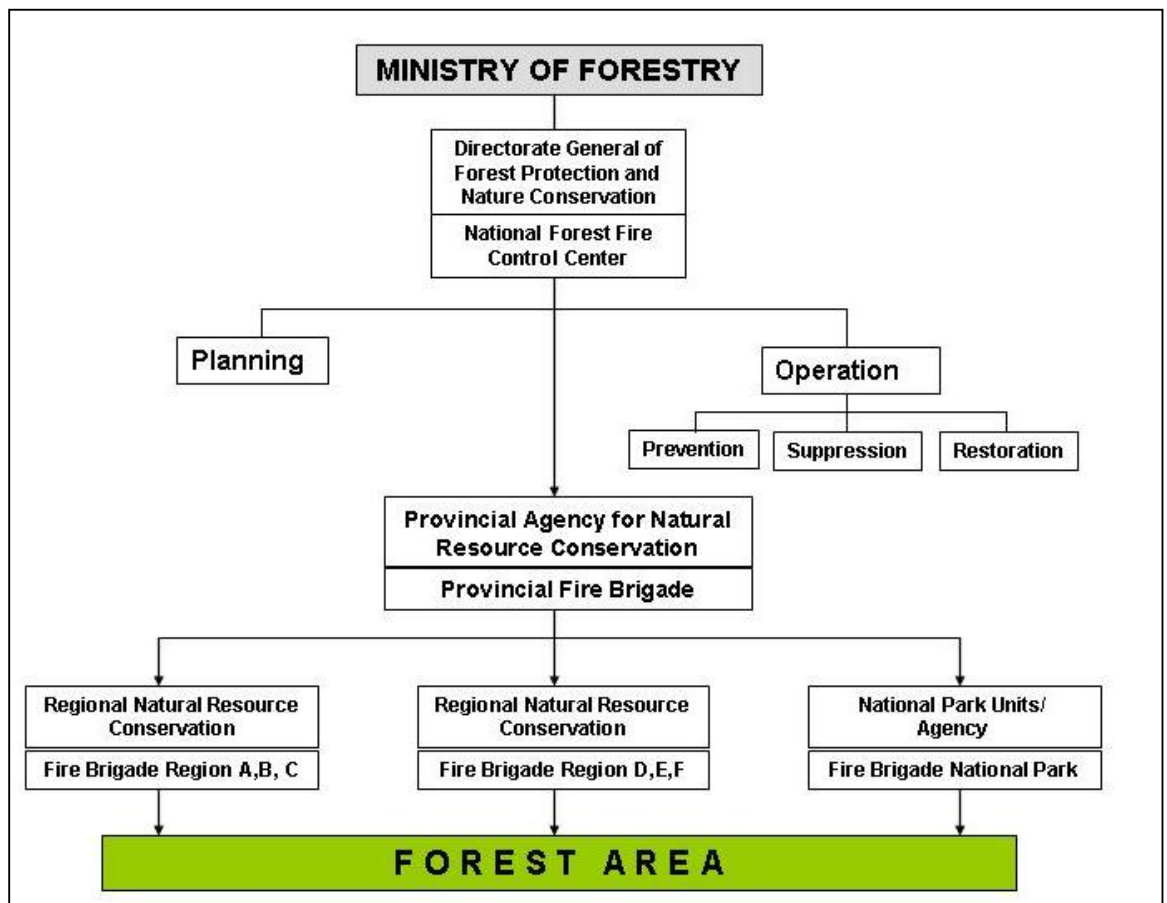
The Ministry of Forestry has determined forest and land fire control as one of the five forestry national priority programs. In order to meet the program goal as well as the requirements of the BAKORNAS system of forest fire prevention and suppression (Figure 3), in 2000 the Ministry of Forestry established the Directorate of Forest Fire Control and Prevention operating under the Directorate General of Nature Protection and Conservation. The Directorate consists of four Sub Directorates that are committed to dealing with the fire problem at a national planning level: a) fire control system, b) detection and evaluation, c) prevention and suppression d) fire impact. The three main policies of the Directorate are: 1) Institutional development to strengthen institutional capacity and capability of all stakeholders involved in forest and land fire management; 2) Technical operational policy focusing on prevention (awareness), suppression (human resources and available equipment) and 3) impact mitigation (law enforcement, justice processes and rehabilitation).

The Head of the Directorate for Fire Control and Prevention is simultaneously heading the National Operational Fire Control Centre (PUSADALOPS) responsible for implementing fire



management tasks through technical executing brigades or Forest Fire Control Brigades (Manggala Agni) at provincial and district level. He/she is directly reporting to the Director General of Nature Protection and Conservation.

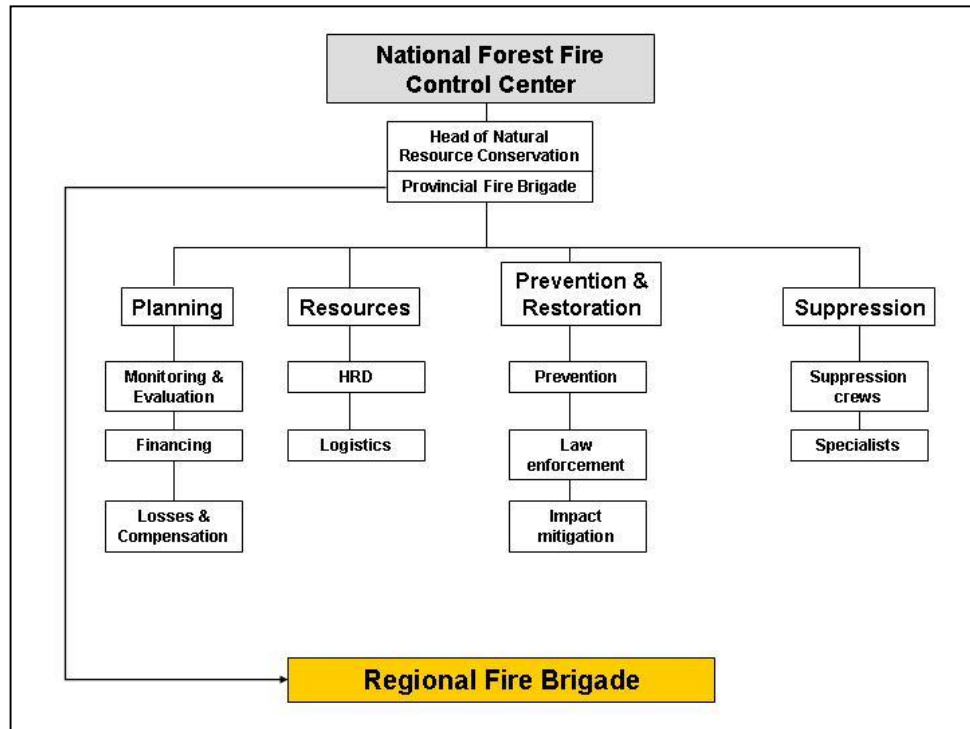
In 2002 six Forest Fire Brigades have been established in the five most fire prone provinces (North Sumatra, Riau, Jambi, West Kalimantan and Central Kalimantan). These brigades are tasked to strengthen the institutional capability at the operational level as the Fire Brigades cover 21 operational zones (districts) with up to 72 teams of ~1080 people. In addition, the Fire Brigades are designed as a model and stimulator for further development of forest and land fire control institutions in the respective provinces. Currently the institutional framework (BRIGDALKAR) of the Forest Fire Brigades is embedded into the structure of the Agency for Natural Resource Conservation (BKSDA). Therefore the Head of the Natural Resource Conservation (BKSDA) is at the moment also the Head of the Provincial BRIGDALKAR. The Regional section head commands operational units (Manggala Agni) in the regions of his/her responsibility. The Institutional framework is outlined in Figures 7, 8 and 9.



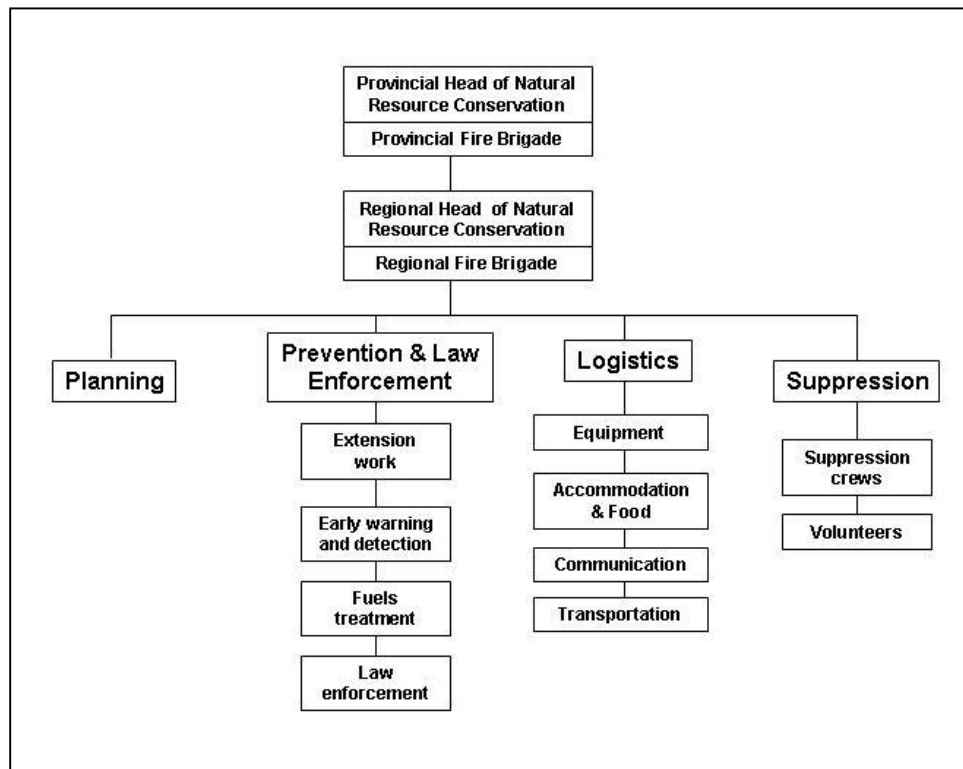
**Figure 7: Structure and operational tasks of BRIGDALKARHUT**

To date the Fire Brigades have been equipped with 1080 trained personnel, equipment (hand tools, water pumps, slip-on tanks, vehicles, motor bikes etc.) and facilities for fire

suppression. It is intended to establish similar Forest Fire Brigades in 18 other fire prone provinces. The institutional framework of BRIGDALKAR at provincial and regional level (Figure 8 and 9) very much aims at an integrated fire management approach which identifies prevention as an important aspect and which involves local communities in designing and implementing fire management policies. In addition mitigation policy is focused on law enforcement, legal prosecution, and rehabilitation of the burned area.



**Figure 8: BRIGDALKAR at provincial level**



**Figure 9: BRIGDALKAR at regional level (covering one up to several districts)**

Since this is a very comprehensive fire management concept comprising the major elements of a successful fire management organisation, its current weaknesses are the result of the institutional arrangements. Being embedded in the administrative and personal structure of the Natural Resource Management Agency (BKSDA), the additional implementation of such a comprehensive fire management concept is a simply impossible task considering the available personnel and its already inherent functions. Personnel of BKSDA are already challenged by the task to manage and protect their respective areas, especially considering the currently rampant illegal logging activities throughout Indonesia.

Although the Ministry of Forestry has made available additional budget, experiences in the Province of Jambi demonstrate that this is far not enough. To carry out the six month activity plan next to BKSDA routine budget additional budget of about 200.000 Million Rupiah is required. This budget covers expenditures for equipment, maintenance, and fuel as well as the salaries of approx. 180 additional local volunteers. Rough calculations reveal that the budget is exceeded already by hiring the local volunteers only.

However, these shortcomings have already been identified and the present Director of Forest Fire Control and Prevention considers it necessary that BRIGDALKAR becomes an independent organisation that is not necessarily limited to forest areas. Moreover is should promote both inter-sector and foreign cooperation and coordination for controlling forest and land fires. This in turn requires that the Directorate for Fire Control and Prevention will be upgraded to a Directorate General (Echelon I) in order to ensure the budgetary and human resources prerequisite.

### 4.3 Environmental Impact Agency

According to BAKORNAS PBP the Ministry of Environment has the task of fire monitoring and evaluation (Figure 10). This is reflected by the Directorate of Environmental Degradation Control with its Land and Forest Fire Division. This division provides actual information on fire occurrence (NOAA-AVHRR hot spots), weather forecast, smoke-haze distribution maps, and fire danger rating information for the regional offices in the provinces and districts.

According to the Head of the Division it is intended to conclude Memoranda of Understanding (MoU) between several districts about joint fire management activities. The provincial agencies, namely the Environmental and Forest sector together should facilitate this process. Both sectors should develop a common fire management strategy and work out a realistic budget to be then submitted to the Regional Planning Agency (BAPPEDA). It is seen as a starting point to create round tables in order to clarify roles and responsibilities in fire management and define budget needs for activities.

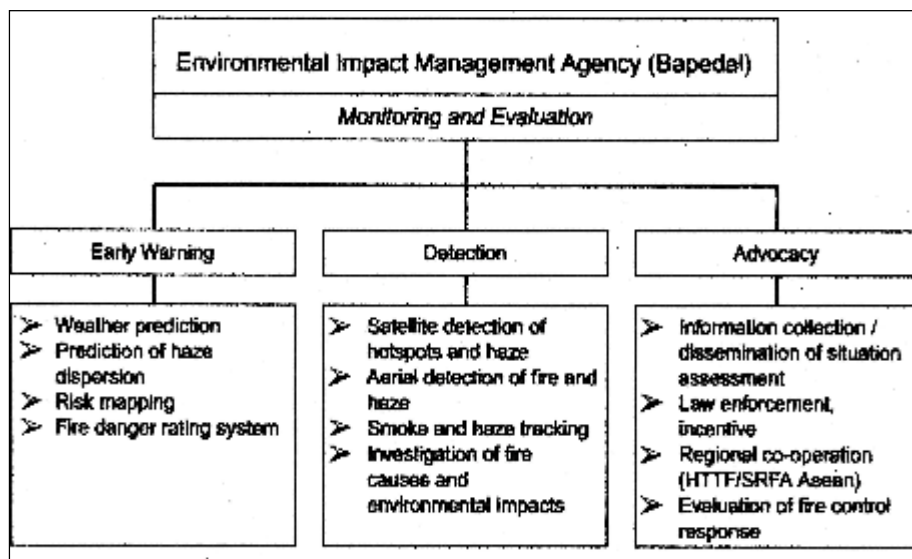


Figure 10: Roles and responsibilities of the Ministry of Environment

#### **4.4 Other relevant sectors at the National level**

Besides the three main stakeholders mentioned above, the Indonesian Meteorological Service (BMG) and the Agency for Assessment and Application of Technology (BPPT) is the most important partners regarding the Fire Danger Rating Systems. These national agencies have formalized and signed an agreement with the Ministry of Forestry to define their roles and responsibilities for adaptation (Technology), operations (Meteorology), and applications (Forestry) in FDRS development supported by the CIDAI (Canadian International Development Agency Initiative) SEA Fire Danger Rating System project.

These agencies have been trained in their respective role of the “South East Asia Fire Danger Rating System (FDRS) Project to calculate Fire Danger Rating throughout Indonesia. Extensive training materials have been produced consisting of: course delivery strategy, course description, and objectives; instructor manual; student workbook; instructor aides and guidelines; and exam and grading procedures. Five modules are included in the course: 1) Forest policies and regulations; 2) Forest and land fire science; 3) Forest and land fire behaviour; 4) Fire danger rating systems; and 5) Curriculum delivery of the FDRS.

## 5. Relevant Sectors in South Sumatra

In concurrence with the concept outlined for the national level the major players in fire management at the provincial level would be both the forestry and environmental department, coordinated by the SATKORLAK secretariat. Besides the SSFFMP project related decrees, nearly all relevant regulations dealing with fire management aspects are referring to the SATKORLAK system (Table 4).

**Table 5: Relevant decrees and regulations on forest and land fires in South Sumatra and the three model districts of SSFFMP**

<b>Regulation</b>	<b>Issued</b>	<b>Remarks</b>
Governmental Decree No: 538/KPTS/KEHUT/2001 on the structure of the Coordination Team for Law Enforcement on Land and Forest Fire Prevention and Control.	2001	
Governmental Decree No: 377/KPTS/BAN-KBLM/2002 and No: 564 /KPTS/BAN-KBLM/2002, regarding organisation and work system of the regional disaster and refugee management implementation unit (SATKORLAK)	2002	SATKORLAK
Governmental Decree No: 211/KPTS/HUT/ 2003 regarding the Project Coordination Committee of SSFFMP	2003	SSFFMP
Governmental Decree No: 234, 2003 on SOP for disaster and refugee management implementation unit (SATKORLAK)	2003	SATKORLAK
Work guideline for the emergency response group (Tim Reaksi Cepat) of disaster and refugee management implementation unit (SATKORLAK)		SATKORLAK/Tim Reaksi Cepat
Regent decree No: 585, 2003 regarding the coordination and collaboration team of Musi Banyuasin for SSFFMP	2003	SSFFMP
Regent decree No: 303/KEP/D.KEHUT/2003, regarding "Multistakeholder Forum in Ogan Komering Ilir	2003	SSFFMP
Regent decree No: 210, 2003 regarding coordination team and collaboration team of Ogan Komering Ilir for SSFFMP	2003	SSFFMP
Regent decree No: 5566, 2003 regarding implementation forum for fire prevention and suppression in Banyuasin	2003	
Regent decree No: 344, 2003 regarding organisation and work structures of the regional coordination unit for disaster management (SATLAK PBP) of Banyuasin	2003	SATLAK PBP
Regent decree No: 345, 2003 on Implementation guideline and structure of Implementation Unit (SATLAK PBP)	2003	

## **5.1 Satkorlak**

Under the coordination of BAKORNAS PBP several institutions on province and districts level are responsible for implementing disaster management activities including fire related issues. On province and district level SATKOTLAK PBP and SATLAK respectively are non-structural coordination forums to monitor and implement these activities. Finally, SATGAS PBP is the operational disaster management and refugee control task force unit including for fire fighting (see also Figure 4).

In South Sumatra the SATKORLAK system has been supported by three main Governor Decrees and related technical guidelines. Governor Decree No. 377 (2002) established the SATKORLAK system and outlines the task of this provincial disaster and refugee board. All expenditures incurred by this decree will be covered by the provincial budget and other lawful sources of income, i.e. from the respective institution or agency involved. The main tasks of the SATKORLAK Board is to formulate policies, to coordinate and control the disaster management activities before, during and after the disaster events based on the BAKORNAS BPP policy guidelines.

Governor Decree No. 564 (2002) assigns the Head of the Nation Unity and Civil Society Protection agency (Badan Kesatuan Bangsa dan Perlindungan Masyarakat – KesBangLinMas) as the daily executive secretary of SATKORLAK and consequently KesBangLinMas becomes the Executive Secretariat. The secretariat of SATKORLAK has to prepare programs for disaster management, including guidelines, standards and procedures, to assign and set up the operational implementation teams (SATGAS and Emergency units), and to establish working groups and expert teams for certain occasions. Moreover, it has to outline the involvement of each respective sector.

Besides its administrative unit (tata usaha) the SATKORLAK BPB in South Sumatra consists of five main units (bidang):

1. Data gathering and information management (disaster risk areas, conflict areas, data and information on refugees, risk mapping);
2. Logistics (procurement, storage and reception, reporting, establishment of support facilities);
3. Prevention and early warning (preparation for the state of emergency, early warning and prevention measures, disaster detection and monitoring);
4. Operation (prepare operational plans, set up of operational emergency teams, communication strategy); **includes fire suppression task force (gugus tugas kebakaran hutan) and emergency team (tim reaksi cepat).**
5. Rehabilitation, relocation and reconstruction (prepare rehabilitation, relocation and reconstruction plans and measures).

Each unit has established a working group consisting of several task forces with specified members from various institutions For the purpose of fire management the task force chaired by the Forestry department consists of 16 members from various departments and institutions:

Environment, Transmigration, Nation Unity and Civil Society protection, Meteorological service, Commander of air force base, Search and Rescue, Health, Estate Crop, Boy Scouts, Transportation, Information and communication, radio communication, private sector (PT PUSRI), PMI, YONIF 145.

Only very general Standard Operating Procedures (SOP) were prepared for this fire management task force, not following Fire Danger Rating criteria. Until today joint fire management activities are rather exceptional and uncommon.

## **5.2 Forestry Department**

According to the SATKORLAK system the Provincial Forestry Department is the lead agency of the Fire Management Task Force, it is as well a member of the SATKORLAK emergency team in the operations unit. In order to accomplish this task the Forestry Department has established a Fire Prevention and Control Section. Until today this section has carried out various fire management activities:

1. Fire prevention media campaign;
2. Training for prevention and suppression for participants from various villages in Kab. OKI and for employees of HTI PT. SBA;
3. Forest fire suppression training for commando stations of the Provincial Forestry Department;
4. Forest fire management and rescue training for the forestry police;
5. Training of the trainers for fire suppression.
6. Environmental education campaign for primary schools.
7. Production of a fire risk map for the province and the districts of South Sumatra.
8. Reactivation of the Fire command stations to distribute information on hot spots / fire events (Juli 2003)
9. Establishment of an operational task force and conducting regular patrols in the Palembang district and in fire risk areas.

The forestry department turns out to be the most active player in terms of fire management considering the activities carried out and supported by the three EU Fire Management projects/phases dating back to 1996. However, these activities and tasks lack a systematic and structured approach in order to be efficient and effective. An overall fire management concept including the main elements of fire management is not existing. Moreover trained and educated personnel are limited and budgetary constraints are restricting a more comprehensive fire management approach.

## **5.3 Environmental Agency**

The Environmental Agency of South Sumatra (Bappedalda Sumatera Selatan) has conceived a concept for forest and land fire management describing the tasks of various actors on the regional and district level. The contribution of the Bappedalda consists of four core activities



comprising early warning information to the responsible authorities, haze observation, impact monitoring, and awareness building on forest fire impact. However, the implementation of this concept is still embryonic caused by the lack of sufficient and qualified staff as well by budgetary constraints. According to the Head of Bapedalda, the agency has only been recently involved in the fire management issue due to becoming a counterpart of the SSFFMP project.

Bapedalda South Sumatra is a member of the SATKORLAK operational fire management task force as well as a member of the operational emergency team. However, the Head is not convinced of the effectiveness of the SATKORLAK system and would favour a “Fire management Sub-Dinas” solution under the responsibility of the Forestry department.

#### **5.4 Agency for Natural Resource Management (BKSDA)**

Until today there is no Forest Fire Brigade (Manggala Agni) in South Sumatra. The Directorate for Forest Fire Control and Prevention intended to establish such a brigade in 2002-3, however, due to budget constraints this plan had to be postponed. The current Minister of Forestry does not support forest fires as a major priority at the moment.

BKSDA is neither a member of the operational fire management task force nor a member of the operational emergency team.

#### **5.5 Other relevant stakeholders in South Sumatra**

The Estate crop department is member of the SATKORLAK fire management task force as well as member of the operational emergency team. The department is concerned about fire and has some potential to carry out extension work for fire prevention and suppression within its Unit Pembinaan Perkebunan Tanam (UPPT); however it lacks the human resources and budget. According to the Head of Estate Protection section, the department’s fire prevention and suppression program does not receive enough financial support from the government, it is even often cancelled based on the argument that the forestry sector is the lead agency of fire management.

The Department for Agriculture is a member of the SATKORLAK system and a member of the emergency team, however not a member of the operational fire management task force. The involvement of the Agriculture department in aspects of fire prevention extension work seems to very small.

The Bureau for Communication and Information is a member of the SATKORLAK system. It holds the chair of the prevention and early warning unit. Moreover, it is the lead agency of the communication and information task force and belongs to the emergency team as well as to the fire management task force.

### **6. District level of South Sumatra**

The districts are the most important partners and the highest authorities for the operational tasks of fire management, i.e. mainly prevention measures and suppression activities. However, the conceptual elements, institutions and physical structures as well as the technical components and human resources for the establishment of an effective fire management system

are still lacking. At district level, the role for local communities becomes especially apparent considering that government capacity at the local level might be limited. Local communities with their traditional knowledge of fire management are in the best position to manage or prevent fires on a local scale, but they are often not involved in government fire management programs and activities. Therefore SSFFMP pays special attention to the villages by establishing, training, and equipping local fire fighting crews. A review of existing rules and regulations of the practice of burning is ongoing.

PP 4, 2001 requires district governments to design/assign the appropriate fire management agency/ies. This process has recently been supported and initiated by establishing multi-stakeholder forums in SSFFMP's three model districts Musi Banyuasin (Muba), Ogan Komering Ilir (OKI) and Banyuasin to support sustainable resource management including fire management and land use planning. A fire management structure that is able to dynamically support activities in the field of Community Based Fire Management (CBFiM), and that involves the private sector, and that is able to solicit support from Government agencies would be a model for a district fire management structure.

The district forest services (or the combined forest and estate crop service in Lahat, Banyuasin and OKU) have only a few trained staff and little equipment, which is not sufficient in terms of physical effectiveness and co-ordination. Besides that, the private sector, namely the forest plantations, has some trained staff and fire fighting equipment at its disposition.

The organisational structure of the natural disaster Implementation Unit (SATLAK) in Banyuasin has recently been imposed and supported by a regent's decree. Consequently, the National Unity and Civil Society Protection Bureau have the command and co-ordination task (Secretariat) and is to report to the district regent. Guidelines similar to the provincial level define the roles and responsibilities of each agency in case of natural disasters, e.g. the district forestry and estate crop service holds the lead in forest and house fire control. Yet, prevention measures are underrepresented and only understood in terms of early warning information. Clear job descriptions are again missing.

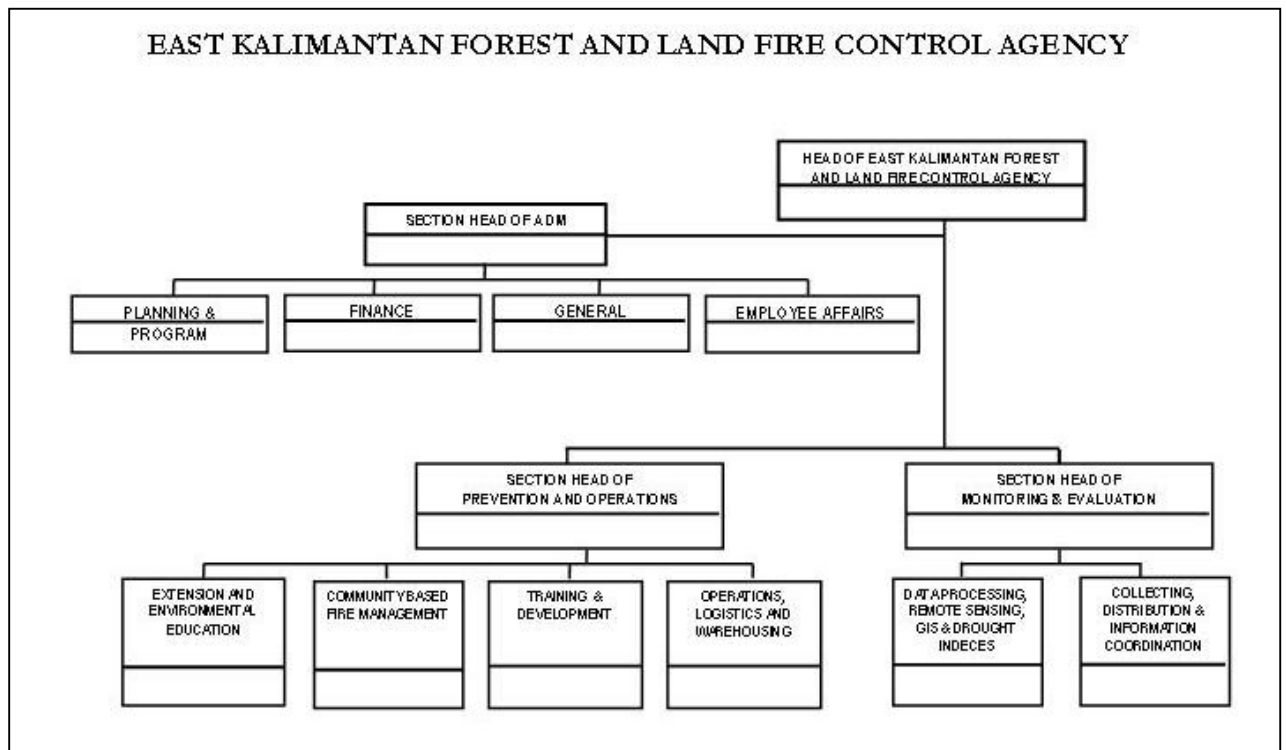
However, this structural framework is well suited to provide the basis for a more detailed fire management master plan (as at the provincial level) for each district that acknowledges the role and importance of a community-based and government-supported fire management system.

## **7. Fire Control Agency in East Kalimantan**

Currently, there is only one fire management organization operational at the provincial level in Indonesia that is operating on a fulltime basis carrying out the daily tasks of fire management. In January 2002, the Governor of East Kalimantan established a technical agency within the Provincial Forest Service to manage forest and land fires. The "Unit Pelaksanaan Teknis Daerah" (UPTD) is under the responsibility of the Provincial forestry department. Figure 11 shows the structure of the UPTD.

The UPTD follows the GTZ-supported (Gesellschaft fuer Technische Zusammenarbeit) concept of integrated fire management that is based on the involvement of local communities and

relevant land managers as well as a comprehensive fire management strategy combining fire information, fire prevention, and fire suppression. The construction of fire centres at ten district/branch offices of the Provincial Forest Service, two National Parks, and at the provincial fire centre was initiated through a DM 10 million financial contribution of the German Development Bank (KfW). Additionally, the process for equipping each fire centre with modern forest fire-fighting tools, and the initial steps to train personnel in preventing and suppressing wildfires were taken throughout the project duration. This network of so called Local Fire Centres was seen as the initial core of a government fire management organization at the district level that facilitates the integration of government, private industry, local communities, and non-governmental organizations to constructively work together to prevent and suppress “unwanted” vegetation fires.



**Figure 11: Forest and Land Fire Control Agency of East Kalimantan**

The UPTD Vision is to operate an efficient and functioning fire management organization that integrates government, private, and village level stakeholders’ efforts towards minimizing forest and land fires. The UPTD mission is to design and provide policies, services, guidelines, coordination, and support to all fire management stakeholders within the province, with the aim of preventing, suppressing, and monitoring forest and land fires. This mission is achieved through continuous dissemination of current and forecasted fire-related information, providing training, developing cooperative agreements, and through the sharing of fire-fighting supplies, equipment, and personnel to facilitate efficient and cost-effective fire management. The Overall UPTD objective is: — to prevent and suppress fires which threaten or occur in Protection Forest

areas; — to assist land management agencies, institutions, and communities in developing the capacity to prevent and suppress fires which occur in their areas of responsibility; — to promote cooperation and coordination between all agencies, institutions, and communities with an interest in fire management.

The objectives for the respective working units are the following: 1.) Fire Information: To compile and analyze fire relevant data for monitoring vegetation fires, determining readiness levels, identifying fire risk areas and assessing the current and predicted fire situation. To provide information necessary to make recommendations to political officials, agencies, and institutions as well as specific procedural direction to District Fire Centres and other land management agencies. 2.) Fire Operations: To assist the District Fire Centres in developing the physical and institutional capacity to perform rapid initial attack within a defined response area to fires that are identified as “unwanted” by a measurable index and/or management decision. To develop the organizational capacity and coordination mechanisms to mobilize and manage fire suppression actions on large fire events. 3.) Fire Prevention: To develop the Community Based Fire Management concept through training, awareness campaigns and educational materials that enhance the capacity of villages and related stakeholders to actively participate in forest and land fire prevention activities. 4.) Administration Objectives: To perform all the administrative, personnel, and financial activities, plans and programs through transparent, uncorrupted and less bureaucratic methods.

In 2004 a total budget of about 164 thousand US \$ (routine and project budget) has been provided by the local government of East Kalimantan. The UPTD is sufficiently equipped, and trained and educated staff can carry out the task and functions of an integrated fire management. The UPTD has currently 28 employees in total including its head. It is purely an implementation agency that does not formulate regulations, enforces the law, or coordinates the involved parties. The main roles and functions of the three major governmental agencies according to PP 8 are given in Table 5.

**Table 6: Agency functions based on PP8**

<b>Badan</b>	<b>Dinas</b>	<b>UPTD</b>	<b>Interagency (ADHOC)</b>
Create regulation	Create regulations	Implementation agency	Coordination
Supporting	Gives permit & services		
Coordination	Assisting activities		
Province Max. 8	Province Max 10		
District Max 8	District Max 14		

The establishment of the UPTD must be seen as a long term process supported by various factors, and has been a result of at least ten years of project support by IFFM-GTZ. Figure 12 shows a brief summary of the sequence of the events and preconditions leading to the establishment of the Fire control agency in East Kalimantan.

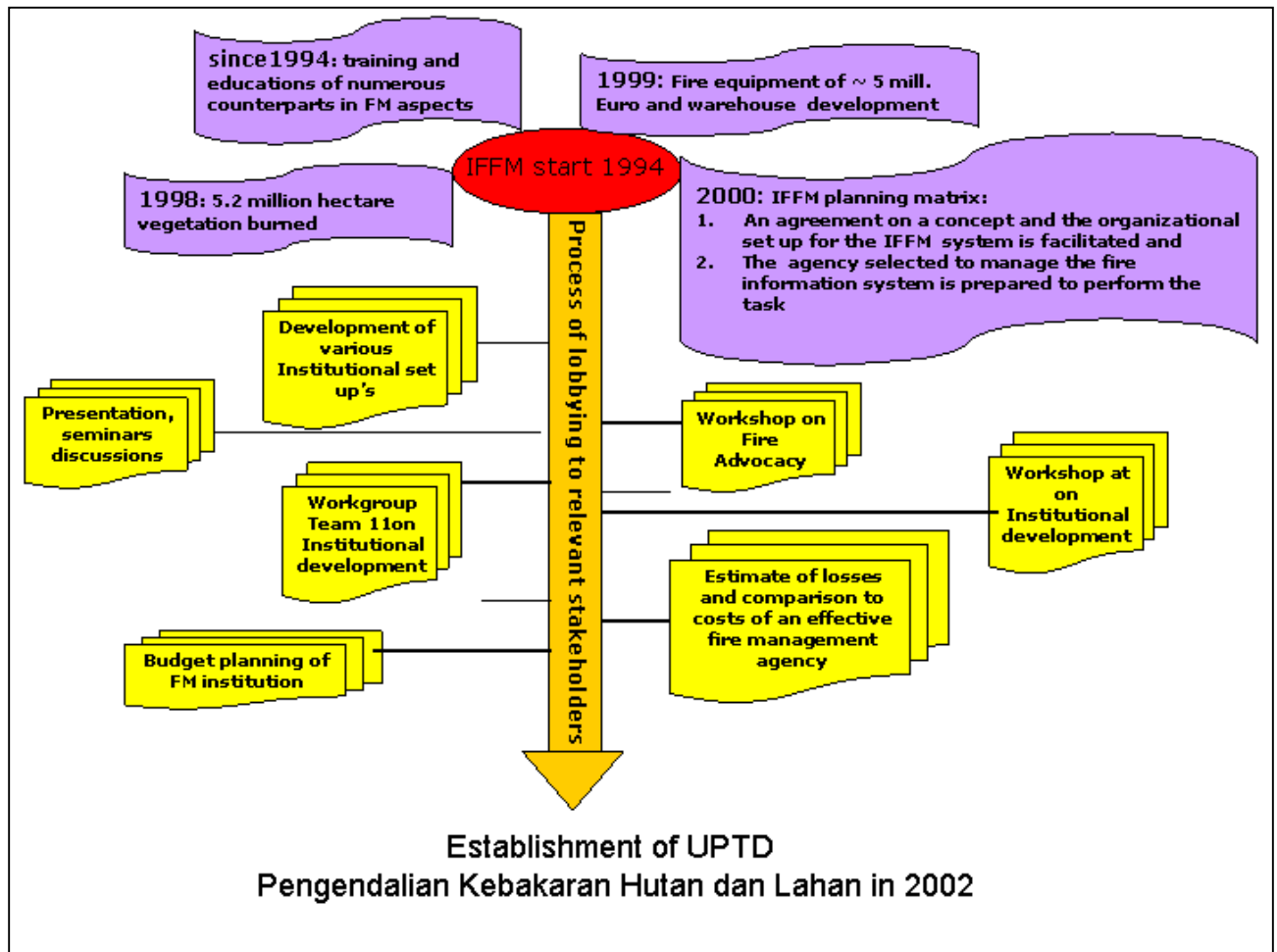


Figure 12: Process of the establishment of the East Kalimantan Fire Control Agency

Several milestones such as warehouse building, ongoing long term training and education of personnel, the working group on institutional development, but also the catastrophic fire event in 1997/98 that burned almost 5.2 Million hectare vegetation have advocated and supported the idea and stressed the necessity of a single agency exclusively dealing with fire management in East Kalimantan. The summary of the facts mentioned above and the support and promotion by the Head of the Provincial Forestry department convinced the provincial government in East Kalimantan to finally accept and endorse the concept of a fire management agency. The UPTD could start in 2002 after a solid basis consisting of qualified and trained personnel, fire fighting equipment and facilities throughout the province as well as an already well functioning and

equipped office was laid. The fire agency in East Kalimantan is not in accordance with the decentralisation law. In the transition era of decentralisation it could not be foreseen that unlike previously thought the subordinated fire agencies at district level (Sub-UPTD) to be established and being under the command and coordination of the provincial fire agency will not find acceptance and legislation. Therefore the districts tended to establish their own fire management institutions and organizations depending on institutional history, given conditions and prerequisites. Since 2002 a facilitation process is being carried out by IFFM and UPTD members to clarify the interaction between the provincial UPTD and the individual district fire management centres (Local Fire Centres). In two districts and one municipality, the institutional setting for fire management was facilitated. New institutional arrangement for district fire management agencies were created by means of political dialogue and co-operative agreements (MoU), see Appendix 1). The agreements support elaboration and further development of the institutional frame-net-work for an effective fire management system at the district and sub-district level in East Kalimantan.

So far the districts of Kutai Barat and Kutai Timur and the City of Balikpapan have submitted structures for fire management institutions. Each institution differs, while only one is permanently incorporated as an UPTD into the Environmental Department of Kutai Timur. The other two proposals established ad-hoc structures similar to those of the SATKORLAK system. However, the important differences lie in a clear fire management policy and coordination; members of the institutions are relevant to fire management and are functional and professional members not only heads, and finally these institutions have jointly worked out a fire management program and its related budget.

However, since none of these institutions are fully functional yet, it remains open whether these individual institutional establishments of fire management in the districts of East Kalimantan will effectively work and cooperate as well as acknowledge coordination functions of the provincial fire agency. Figure 13-15 show the organisational structures in the respective districts.

Moreover the institutional set ups on provincial as well as district levels are also not in accordance with the ongoing activities carried out by the national level in order to establish fire management institutions following “Manggala Agni” example (see section 4.2). Different institutional set ups might hinder a smooth exchange of information, communication and collaboration as well as direct budget support from the national towards the provincial and district level.

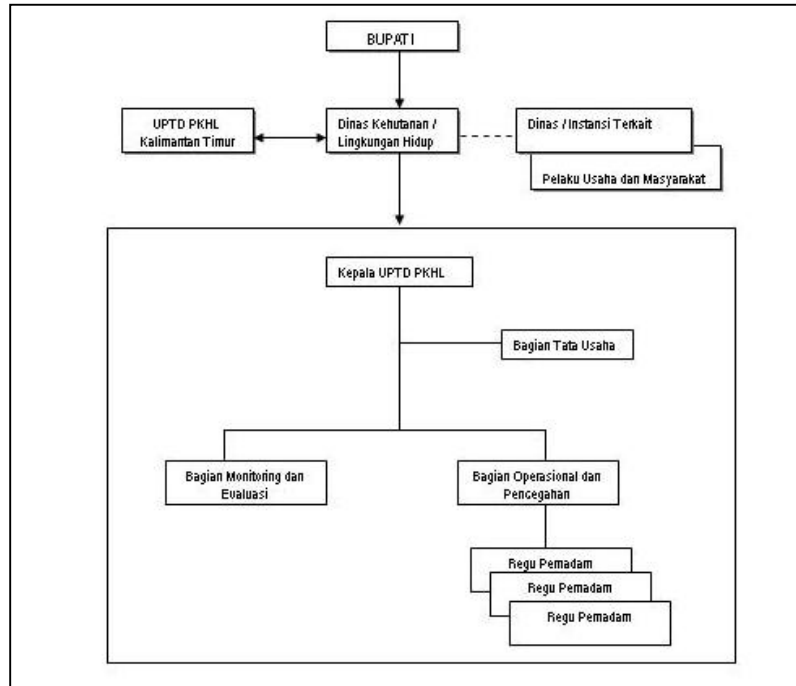


Figure 13: Structure of fire management UPTD in Kutai Timur

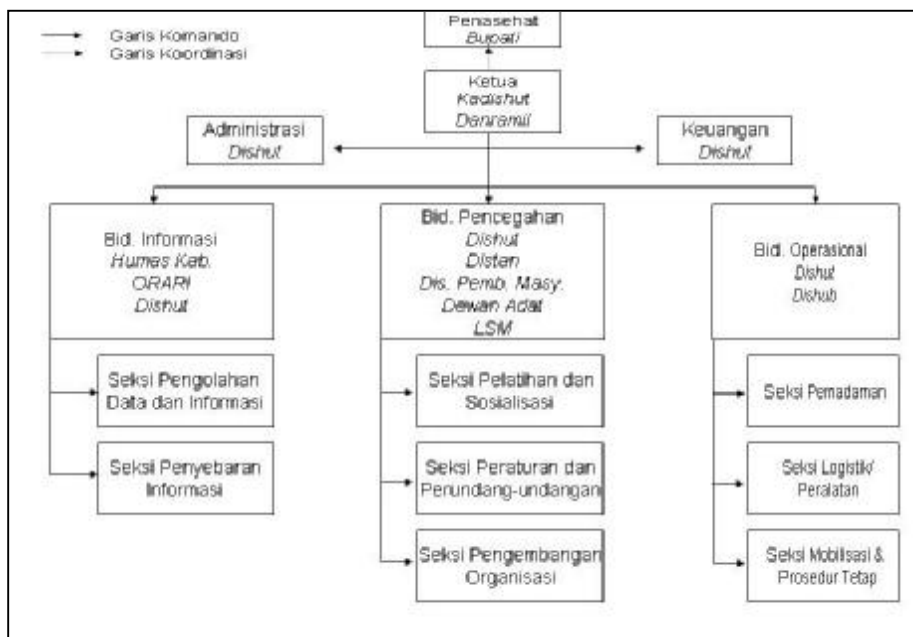


Figure 14: Structure of ad hoc fire management agency in Balikpapan

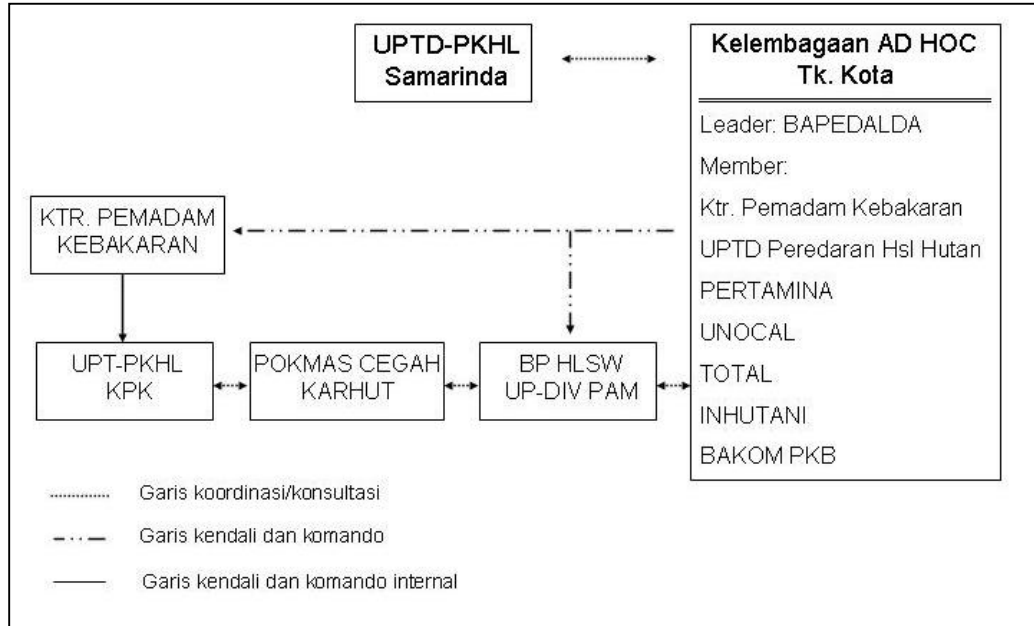


Figure 15: Structure of ad hoc fire management agency in Kutai Barat

## 8. Aspects of Decentralisation

As already widely known, decentralisation policies have handed down the authority and responsibility to establish fire management institutions to the provincial and district government bodies. PP4, 2001 stipulates that each province respectively district have the right and obligation to set up such institutional structures according to the specific prevailing conditions and needs. Besides the order to establish these institutions, however, PP4 does not provide any details or references to existing guidelines and regulations in this field that should inform the formation process at the province and district level. Nor does this regulation assign any specific roles, functions, and responsibilities to those bodies and institutions likely or necessarily to be involved in this process.

PP8, 2003 regulates the structure, tasks, and functions of all governmental agencies on the sub-national levels. Furthermore it elaborates on the criteria and procedures of the formation of such governmental agencies. In this context the regulation limits the number of government agencies at the provincial level to ten bodies and at the district level to fourteen bodies. The number of subordinate units of each of these bodies is also limited and regulated. Some provinces in Indonesia have already implemented PP8 and streamlined their government structures while this process is pending in other provinces. Such a streamlining and limitation of government institutions and subordinate agencies at the various regional levels might affect the chances to establish an effective and efficient fire management system according to the opportunities provided by PP4.



## **9. Main Findings**

In the current division of labour for fire management tasks the Ministry of Forestry holds the responsibility of prevention and suppression and the Ministry of Environment the responsibility of monitoring and evaluation. Despite the apparent clear division tasks at the national level, the conceptual elements, institutions and physical structures as well as the technical components for the establishment of an effective fire management system for South Sumatra are not yet in place neither at the district nor at the provincial level.

It must be strongly emphasized that the main fire causes in South Sumatra lie outside the forested area and thus outside of initial responsibility (and capacity) of the forestry sector, unless it spreads into classified but mostly degraded forest land. Fire prone areas can be found in non-forested peat land areas of the districts Musi Banyuasin (MUBA), Ogan Komering Ilir (OKI) and Banyuasin. The major wildfire causes in South Sumatra are land clearing activities by the local population for agricultural purposes (rice fields “sonor”), oil palm, and rubber cooperatives. Moreover, fire is also used as a tool to combat agriculture plagues such as the wild boars and to clear fishing grounds. These activities normally result in significant smoke haze pollution due to burning peat land during each dry and agriculture season in July/August/September.

To address the complex issues of the underlying fire causes and the resulting fire management activities the current understanding of the term “fire management” needs to be expanded and developed to go beyond the consideration of mere fire suppression activities. In South Sumatra (as still elsewhere in Indonesia) fire management is mostly understood in terms of fire suppression activities, which are expensive, difficult to implement and address only the symptoms.

There is still a broad lack of a common understanding of an integrated fire management concept that includes all five key elements of fire management: 1.) analysis (of the fire problem), 2.) prevention, 3.) preparedness and information (to respond to fires), 4.) response (to actual fires, suppression), and 5.) recovery (rehabilitation and other impact measures).

The desirable success of such a comprehensive fire management concept requires the active involvement of other important governmental land management agencies, the private sector, and the local communities. These stakeholders have to elaborate on their respective roles, functions and responsibilities and finally need to allocate the appropriate funding for each sector and player. Moreover, the underlying fire causes clearly demonstrates that fire problems will persist unless the current overall land use planning process does improve, hence enabling appropriate land use allocation.

### **9.1 Provincial level**

Some structures for fire management in South Sumatra exist within the Provincial Forestry department with a “Fire Section” under the division of the Forest Protection Unit. These fire management capacities are mainly focusing on fire suppression training for forestry employees and training given to the local villagers carried out by the forestry sector. However, these

structures and support are not sufficient and comprehensive to deal with the various and complex fire problems throughout the province and the three model districts of SFFMP in particular. Additionally, the provincial forestry department has a greater administrative and coordination role under the decentralisation policies, but no longer any area (land) of operational responsibility.

Considering the human resources available in the forestry sector it appears, at this point of the time, rather unrealistic that a single lead agency such as favoured by the forestry sector and similar to the East Kalimantan provincial concept is adequate to successfully implement fire management in South Sumatra. Moreover, one has to acknowledge that today in Indonesia fire and smoke is only one of many natural disasters causing human, environmental and economic damage and a single lead agency solely dealing with fire management seems not (financially) justified and favoured in South Sumatra at this time.

Besides the Forestry department, the most important provincial government bodies in South Sumatra that need to be more actively involved are the National Unity and Civil Society Protection service (KesBangLinMas), Estate Crop Service (Perkebunan), Agriculture Service (Pertanian), Environmental Agency (Bapedalda) and Conservation of Natural Resources (BKSDA). In addition to these key players for fire management activities such as prevention and suppression, the Meteorological Service (BMG) and the Information and Communication Service (InfoKom) are most vital partners for aspects of fire information and early warning.

The province of South Sumatra strongly favours and supports the system of the Implementation Coordination Unit (SATKORLAK) and Implementation Unit (SATLAK) of the National Co-ordination Board for Disaster Management (Bakornas PBP). This board has the main tasks to prepare plans for disaster management and synchronize and prepare guidelines, standards and procedures for several aspects of disaster management. In South Sumatra the organisational structure and working procedures of SATKORLAK have recently been further developed and imposed by several governor decrees. Consequently the National Unity and Civil Protection Service has the command and co-ordination task (Secretariat) and is reporting to the governor. The SATKORLAK guidelines define the roles and responsibilities of each agency in case of natural disasters, thus e.g. the provincial forestry department holds the lead in fire control and prevention. The tasks of fire management activities are assigned and included in this structure of SATKORLAK and the given guidelines, however only to a rough and incomplete extent, since they do not provide clear job descriptions related to the assigned functions.

Despite past criticism of the effectiveness of SATKORLAK, this framework provides the basis for the development of a comprehensive and function-based provincial fire management master plan for South Sumatra, in which fire management roles, responsibilities and tasks (job descriptions) of each agency (and political level) are defined and mobilisation resources identified. Each fire-related agency needs to recognize specialized fire positions and qualifications according to their structures and functions and develop Standard Operational Procedures for fire management activities based on Fire Danger Rating procedures (preparedness levels).

## **9.2 District level**

The districts are the most important partners and the highest authorities for the task of the operational aspects of fire management, mainly prevention measures and suppression activities. However, the conceptual elements, institutions and physical structures as well as the technical components and human resources for the establishment of an effective fire management system are still lacking. Furthermore, similar to the provincial level there is an overall lack of a common shared understanding of the term “fire management” and its related activities.

The district forest services (or the combined forest and estate crop service in Lahat, Banyuasin and OKU) have only a few trained people and little equipment, not sufficient in terms of physical effectiveness and co-ordination. Besides that, the private sector, namely the forest plantations, has some trained people and fire fighting equipment at its disposition.

Considering the important and prominent role of the districts within the era of decentralization and within the framework of PP 4, 2001 (Governmental Regulation on Forest and Land Fires), district governments are required to design/assign the appropriate fire management agency/ies. This process has recently been supported and initiated by establishing multi-stakeholder fora in the three model districts Musi Banyuasin (Muba), Ogan Komering Ilir (OKI) and Banyuasin to support sustainable resource management including fire management and land use planning.

Major players in the institutional development process at the district level are similar to those at provincial level, i.e. the estate crop, forestry, agriculture, and civil society services on the governmental side. However, more important is the involvement of the local communities and villages as well as the private sector. Therefore attention is given to the villages by establishing, training, and equipping of local fire fighting crews. A review of existing rules and regulations of the practice of burning is ongoing.

In Banyuasin, the organisational structure of the natural disaster Implementation Unit (SATLAK) has recently been supported and imposed by a regent’s decree. Consequently, the National Unity and Civil Society Protection Bureau has the command and co-ordination task (Secretariat) and is to report to the district regent. Guidelines similar to the provincial level define the roles and responsibilities of each agency in case of natural disasters, so for example the district forestry and estate crop service holds the lead in forest and house fire control. Yet, prevention measures are underrepresented and only understood in terms of early warning information. Clear job descriptions are again missing.

However, this structural framework provides the basis for a more detailed fire management master plan (as at the provincial level) for each district that acknowledges the role and importance of a community-based and government-supported fire management system.

## **9.3 National level**

At the national level both, the Ministry of Forestry and the Ministry of Environment currently carry out fire management activities. The tasks seem to be clearly divided according to the Secretariat of Bakornas PBP. The Ministry of Environment has the task of monitoring and

evaluation, whereas the Ministry of Forestry has the role of prevention and suppression.

The Directorate General for Forest Protection and Conservation of the Ministry of Forestry supports operational fire management activities within forest conservation areas by the establishment of the ‘Mangala Agni’ fire brigades throughout the fire prone provinces in Indonesia. So far fire brigades have been established, trained and equipped in 5 provinces (North Sumatra, Jambi, Riau, West Kalimantan and Central Kalimantan). The overall concept of and structures for fire management are well-developed and understood in the Directorate of Forest Fire Control and Prevention. The fire brigades are established under the structure of the Agency for Natural Resource Conservation (BKSDA) with functional subunits in the district regions. Main problems are the overall work load and multitasks as well as lack of personnel. Therefore the well-developed fire management concept is incompletely implemented and does not receive appropriate funding due to the low support by the Ministry of Forestry itself.

Under the Ministry of Environment the division of forest and land fires provides and distributes information on fire occurrence (NOAA-AVHRR hotspots coordinates) assigned to administrative boundaries, map information on smoke haze pollution, and other relevant fire information and publishes general awareness messages.

## **10. Main Recommendations**

The project should focus on strengthening the institutional/organizational capacities for fire management of the **existing land management agencies and sectors as well as the local communities**. The assistance of SSFFMP needs to be directed towards a **multiple fire management agency** and the development of the physical and institutional capacity for fire management according their (identified) fire management roles and functions following the Fire Danger procedures. Functioning co-ordination mechanisms have to be supported in order to mobilize and manage large scale fire suppression and prevention activities during the dry season and El Niño events. Since appropriate (fire management) funding is always a critical element, especially in Indonesia, assisting the main key agencies in budget planning issues and supporting overall fire management budget planning within BAPPEDA seems to be inevitable.

SSFFMP should advocate and socialise the concept of integrated fire management (5 key elements) to the identified key stakeholders (following the SATKORLAK structure) to adopt a common understanding of the task of fire management within the given legislation at provincial and district level. Terms specific for fire management must be clearly defined and socialised to ensure consistent use in all fire management laws, regulations, and job descriptions.

SSFFMP should facilitate a continuous dialogue to ensure that these key agencies and stakeholders are aware of the national fire policy and to clarify, which agency or agencies holds the statutory (land) responsibility. Support should be given to a process that reviews existing (fire) laws to amend and resolve conflicts and complement where necessary. Since PP 4, 2001 is lacking effective implementation regulations an iterative participative process of continuous socialisation and facilitation needs to be started to clarify roles, mandates, functions, and

interactions between the provincial and district fire-related land management agencies, the private sector and local communities.

Practically, this will mean that these agencies need to elaborate and work in a mutual process on implementation regulations mainly following PP 4, 2001, BAKORNAS 2000 (and necessary additional policies) to identify the circumstances under which certain agencies or multiple agencies can or must act. However, these activities should not only focus on suppression but more importantly on prevention and fire related information. Finally, the process must result in a provincial framework for a fire management master plan that will be completed by individual fire management master plans of the districts following fire danger rating procedures.

SSFMP should actively support the establishment of the “Mangala Agni” fire brigades in South Sumatra.

### **10.1 Provincial level**

- 1. Facilitate the dialogue between the existing (fire management) agencies in order to develop a common and agreed upon understanding of a comprehensive fire management strategy for South Sumatra and to strengthen co-coordinated/joint fire management activities and planning.**
- 2. Support the establishment of a work group to revise with the overall goal and product in the long term should be a fire management master plan for South Sumatra. The main participants of such a working group at the provincial level should be chosen from the SATKORLAK structure according to the Governors degree of 2003. Most potential core members for the beginning could be Kesbanglinmas, Dinas Perkebunan, Dinas Kehutanan, Bappedalda and Dinas Pertanian.**
- 3. Involve Infokom (SumSel online) to socialise fire management and fire management products (Fire Danger Rating or SEA FDRS, awareness messages, Si Pongi mascot etc.).**
- 4. Support (fire management) budget planning processes within Bappeda.**

### **10.2 District level**

- 1. Establish a working group within the existing multi-stakeholder fora to socialize the concept of integrated fire management and related activities with the long term goal of a co-operative agreement for an appropriate institutional management arrangement.**
- 2. Facilitate the revision of the 1999 mobilisation plan with the members of the provincial and district SATKORLAK/SATLAK board.**
- 3. Support (fire management) budget planning processes within Bappeda.**

### **10.3 National level**

- 1. Support the establishment of “Mangala Agni” in SumSel in two main aspects:**
  - a. Advocate the lobby process and dialogue of the Fire Control and Prevention Directorate towards the Forestry Minister in order to establish the “Mangala Agni” Fire Brigade(s) in South Sumatra.**
  - b. Provide focused training in fire suppression and prevention measures to BKSDA in South Sumatra at the given local locations.**
- 2. Support the review of existing fire management laws.**
- 3. Contribute to Indonesia’s National Forest Programme that objectives are “to ensure the conservation, management and sustainable development of forests to meet local, national, regional and global needs and requirements, for the benefit of present and future generations” by supporting the integration of fire management aspects.**

**11. Annex 1 Development of a Forest and Land Fire Management System**

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**MEMORANDUM of UNDERSTANDING**

BETWEEN

*EAST KALIMANTAN PROVINCIAL  
FORESTRY SERVICES OFFICE*

AND

WEST KUTAI DISTRICT  
FORESTRY SERVICES OFFICE

CONCERNING

DEVELOPMENT OF A FOREST AND LAND FIRE  
MANAGEMENT SYSTEM

January 2003

## MEMORANDUM OF UNDERSTANDING

### EAST KALIMANTAN PROVINCIAL FORESTRY SERVICES OFFICE

Number:

AND

### WEST KUTAI DISTRICT FORESTRY SERVICES OFFICE

Number:

CONCERNING

### DEVELOPMENT OF A FOREST AND LAND FIRE MANAGEMENT SYSTEM

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On **Monday** the **Twenty Seventh** of **January, 2003** in **Samarinda** the undersigned:

1. Name : Ir. H. ROBIAN, M.Si  
Position : Head of the East Kalimantan Forestry Services Office  
Location : Jl. Kesuma Bangsa, Samarinda.

In this matter representing the East Kalimantan Forestry Services Office hereafter to be called **FIRST PARTY**.

2. Name : Ir. ARY YASIR PILIPUS, M.Sc.  
Position : Head of the West Kutai District Forestry Services Office  
Location : Jl. A. Yani, Sendawar - Kab. Kutai Barat

In this matter representing the West Kutai Forestry Services Office hereafter to be called **SECOND PARTY**.

The FIRST PARTY and the SECOND PARTY agree to cooperate together in the matter concerning the development of a forest and land fire management system. This agreement shall take the form of a Memorandum of Understanding for Development of a Forest and Land Fire Management System between the Governor of East Kalimantan and the Mayor of West Kutai. This agreement shall follow the specifications stated below:

#### Article 1 THE AIM

1. The FIRST PARTY and SECOND PARTY without intending to disturb their respective duties, will form this MoU to Develop a Forest and Land Fire Management System for their mutual benefit
2. Both parties within their respective capacities will cooperate with the aim of reducing forest and land fire in West Kutai District specifically and East Kalimantan Province generally as far as possible through "Development of a Forest and Land Fire Management System".

#### Article 2



## THE PROGRAM

Through this MoU the FIRST PARTY and SECOND PARTY agree to work together in the following ways:

1. Development of a forest and land fire management organization.
2. Development of human resources capable of forest and land fire management.
3. Development of forest and land fire management infrastructure and facilities.
4. Development of a funding system for forest and land fire management.
5. Development of technical aspects:
  - Forest and land fire prevention,
  - An information system for monitoring and evaluating forest and land fire,
  - Operational forest and land fire suppression,
  - Post fire management

## Article 3 RIGHTS AND RESPONSIBILITIES OF EACH PARTY

The rights and responsibilities of the FIRST PARTY and the SECOND PARTY under r this MoU include the following matters:

### A. The FIRST PARTY:

1. In the field of Fire Prevention:
  - 1.1. *Cooperate with related institutions both within and connected to the forestry sector, as well as, state owned companies and the private sector in an effort to increase public awareness of the dangers of forest and land fire.*
  - 1.2. Provide input and advices for development of policies on forest and land fire at the provincial level.
  - 1.3. Facilitate cooperation on forest and land fire management between Districts.
  - 1.4. Assist with the concept of developing an inclusive role for the community in forest and land fire management. This could take the form of a Community Based Fire Management booklet, a Campaign Guidebook, Training Manual etc.
  - 1.5. Support and implement proactive extention and campaigns on television, newspaper and other mass media instruments.
  - 1.6. Facilitate “advanced training” activities for District Government staff.
  - 1.7. Facilitate and implement monitoring activities for capacity building within organizations at the district level.

- 1.8. Develop concepts for technical mechanisms of fire prevention, such as, guidelines for controlling fire.
  - 1.9. Coordinate activities to support law enforcement with related institutions and Provincial and District levels.
  - 1.10. Provide information and implement activities for socialization of regulations related to forest and land fire.
  - 1.11. Prepare campaign materials to support campaign activities at the district levels.
  - 1.12. Undertake activities to increase public awareness of forest and land fire issues at the National and Provincial levels.
  - 1.13. Together with the district government, monitor logging concessions, timber plantations and plantations to assess their preparedness on organizational aspect, personnel and equipment to support forest and land fire management.
2. Fire Information Systems, Monitoring and Evaluation:
- 2.1. Facilitate training in Fire Information Systems for personnel at the district level.
  - 2.2. Provide regular information on regional fire danger zones.
  - 2.3. Provide the District Government and others with a regular forest and land fire information bulletin.
  - 2.4. Analyze hotspot data and the fire danger rating/FDR for each district/municipality.
  - 2.5. Prepare a provincial data base on fire incidents, equipment and personnel based on information from each district/municipality.
3. Operational Fire Suppression:
- 3.1. Support development of an operational forest and land fire suppression system for the district, through comparative studies to areas where management is more advanced.
  - 3.2. Support and coordinate fire suppression, funding and equipment mobilization, as well as, release of personnel from outside East Kalimantan Province.
  - 3.3. Provide training guidelines, reports, Incident Command System/ICS) etc.

- 3.4. Develop concepts and facilitate efforts to improve regional operational personnel in the field of forest and land fire suppression through training, courses, seminars etc.
  - 3.5. Improve fire management through standardization of equipment, fuel management, water sources, firebreaks etc.
  - 3.6. *Prepare operational fire suppression funding requests to be presented to the provincial government.*
  - 3.7. Develop a fire investigation system that upholds the law, punishing those who break it.
  - 3.8. Prepare guidelines for mobilization of provincial forest and land fire suppression resources.
  - 3.9. Provide support and advice on maintaining fire equipment held by the district.
  - 3.10. Provide operational fire suppression services and support to the district/municipality according to their requests and needs.
4. Fire Management Administration:
- 4.1. Prepare an annual working plan and budget.
  - 4.2. Coordinate and provide forest and land fire management equipment and spareparts for the district.
  - 4.3. Provide training in forest and land fire management administration.
  - 4.4. Coordinate efforts to attain external human resources capable of managing forest and land fire.

## B. The SECOND PARTY

1. Fire Prevention:
  - 1.1. Provide input and suggestions for development of forest and land fire management policy at the district/municipality level.
  - 1.2. Facilitate capacity building for organizations at the village and sub district level.
  - 1.3. Technical implementation of prevention methods for example maintaining fire breaks, regular patrolling etc.

- 1.4. Coordinate fire prevention activities implemented by institutions from other districts.
  - 1.5. Facilitate and implement training specifically at the community level.
  - 1.6. Facilitate and implement extension and forest and land fire danger campaigns in the field or through public radio etc.
  - 1.7. Investigate cases of forest burning to ensure that the law is upheld.
  - 1.8. Facilitate and support environmental education activities in schools.
  - 1.9. Document and strengthen local/community knowledge as input for improvement of forest and land fire management policy.
2. Fire Information Systems, Monitoring and Evaluation:
- 2.1. Regularly supply information on fire incidents (situation, conditions, suppression methods, size of burnt area etc) to the provincial office.
  - 2.2. Implement fire danger rating/FDR and inform the province of the results (Forest and Land Fire Control - Regional Technical Work Unit).
  - 2.3. Prepare and update an equipment, personnel and incidence database at the district level.
  - 2.4. Collect information on fire suppression field resources.
  - 2.5. Distribute information linked to forest and land fire to related institutions and the community.
  - 2.6. Identify fire danger zones within the the district/municipality.
3. Operational Fire suppression:
- 3.1. *Form an organisation specifically for forest and land fire management at the the district/municipality level.*
  - 3.2. Clearly set out areas of land management responsibility to ease coordination during suppression operations.
  - 3.3. Facilitate strengthening of forest and land fire management by private companies and communities.

- 3.4. Prepare guidelines for resource mobilisation to assist with handling an environmental disaster (forest and land fire at the district level).
  - 3.5. Set up a budget for training, equipment maintenance and forest and land fire suppression operations.
  - 3.6. Maintain all equipment in accordance with standard procedures.
  - 3.7. Prepare a job description and standard operating procedures (preparedness level), as well as areas of responsibility for implementation during a forest and land fire.
  - 3.8. Be sure that fire crews are well trained, equipment is ready to use and all facilities are well maintained.
  - 3.9. Provide observers/assistance to any land holder that uses fire where there is potential for disaster.
  - 3.10. Support prevention activities through patrols, training and extension for community groups.**
  - 3.11. Support all forest and land fire suppression activities within any district/municipality both within or outside of the province.
  - 3.12. Provide additional equipment, infrastructure and facilities that will support forest and land fire management activities.
4. Fire Management Administration
    - 4.1. Prepare annual work plans and budgets.
    - 4.2. Try to recruit funding sources from within the district/municipality.

#### Article 4 TECHNICAL IMPLEMENTATION

1. Implementation of each parties' rights and responsibilities as stated in Article 3 is to be undertaken in stages in accordance with the capacity of each party.
2. The FIRST PARTY nominates the Forest and Land Fire Control - Regional Technical Work Unit as the functional institution that will represent the FIRST PARTY under this MoU.
3. The FIRST PARTY as represented by the Forest and Land Fire Control - Regional Technical Work Unit and the SECOND PARTY shall meet at least

once every 6 (six) months to prepare working plans and implement cooperative monitoring of implementation of this MoU.

**Article 5  
MODIFICATION AND CANCELLATIONS**

1. This agreement between the FIRST PARTY and SECOND PARTY shall remain active without any given time limits.
2. Modification and/or cancellation in part or in whole of any article within this MoU shall be instigated openly through mutual discussion and agreement with the concurrence of both parties.

**Article 6  
PROBLEM SOLVING**

Should any disagreement arise under this MoU it shall be resolved openly through mutual discussion and agreement

**Article 7  
CLOSING**

1. This MoU is a part of and cannot be separated from the cooperation agreement concerning Development of a Forest and Land Fire Management System between the Governor of East Kalimantan Province and the Mayor of West Kutai District.
2. Any matters arising in relation to this MoU that are not mentioned here within shall be prepared and authorized as an amendment to the MoU.
3. This MoU shall be prepared and signed in duplicate (2 – two copies), each bearing stamp duty and each having equal legal status.

**SECOND PARTY  
HEAD OF WEST KUTAI DISTRICT  
FORESTRY SERVICES OFFICE**

**FIRST PARTY  
HEAD OF EAST KALIMANTAN  
PROVINCIAL FORESTRY  
SERVICES OFFICE**

Ir. ARY YASIR PILIPUS, M.Sc

Ir. H. ROBIAN, M.Si

