

# **FINAL PROGRAM SUMMARY REGIONAL FIRE COORDINATION**

**FY 1998 - Southeast Asia Environmental Initiative  
FY 1999 - East Asia and Pacific Environmental Initiative  
FY 2000 – East Asia and Pacific Environmental Initiative**

**EAP-EI Goal: Improved Forestry and Land-Use Management  
Objective: Improved Fire Management and Prevention  
Implementation Agency: USDA Forest Service  
May 13, 2003**

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## **ASPIRATIONS**

### **Environmental Issue - Background Context**

Since 1982, there have been five major fire outbreaks with associated haze in Southeast Asia, with smaller, short-term events occurring almost annually. Land and forest fires have both direct and indirect impacts in a number of dimensions: economic, social, and ecological. Economic impacts include financial loss in forestry, transportation, and tourism sectors. Social impacts include: adverse impacts on health, primarily respiratory problems from smoke emission particulates; visibility problems and associated vehicle accidents and transportation curtailment; temporary closures of education and government facilities; and displacement of affected populations. Environmental impacts of these fire and haze events, many non-quantifiable, include: loss of key species and their habitat; air pollution; accelerated erosion deposition in rivers and estuaries; and damage to soils. The fire and haze event of 1997 and 1998 was particularly severe, resulting in an estimated USD 9 billion loss in the agriculture, transportation and tourism sectors.

A number of affected countries, donor countries, regional associations, and international institutions have developed initiatives to address various aspects of the fire and haze events in Southeast Asia. In the last decade, regional, national, and local programs and research have been initiated at various scales to address policy issues, explore economic feasibility of zero burn forestry management practices and increased utilization, quantify and describe economic and environmental impacts of the fires, strengthen institutions for forest management, identify land tenure issues contributing to the fire events, develop action plans, identify underlying causes and economic incentives of fires, refine fire detection and monitoring systems, standardize air pollution indexes, implement prevention programs, explore effectiveness of community fire management programs, build regulatory and judicial capacity to prosecute violators, develop and strengthen

response mechanisms, provide fire fighter training and equipment, and other fire related issues.

### **Theme and Purpose of Program**

The severe 1997 and 1998 Southeast Asia fire and haze event highlighted the need for effective, well-planned, and coordinated response mechanisms with local, national and regional implementation capacity. The ASEAN Regional Haze Technical Task Force (HTTF) and the Sumatra/Borneo Sub-regional Firefighting Arrangements (SRFA) developed a Regional Haze Action Plan (RHAP) with support from an Asian Development Bank (ADB) funded regional technical assistance team. The ASEAN RHAP has three components; monitoring, prevention, and mitigation. The USDA Forest Service (USFS) initially identified the mitigation component as an area in which USFS technical skills could enhance and fill expertise gaps in on-going efforts to address the fire and haze problems. Specifically, the theme and purpose of the USFS program was to identify and implement activities to build capacity for appropriate fire management response. The strategic goal was to: 1) introduce fire management models and processes; 2) evaluate and test the utility of these models and processes in the Southeast Asian environment; 3) adapt models and processes as needed; and 4) encourage replication and institutionalization of the adapted models and processes. The primary Program objective was on capacity building and mentoring, with a long-term goal of sustainability.

### **PROGRAM EVOLUTION**

Over the four-year period of the USFS program, a number of factors influenced the evolution of the program. A growing body of knowledge in the public domain regarding Southeast Asia fire and haze events during this period helped to shape the characterization of activities. Knowledge and experience gained from results of previous activities directly influenced the design of subsequent activities. Evaluation of expressed needs for technical expertise by partners and collaborators and opportunities for linkages was also a contributing factor in the development of activities. Activities were generally sequential in nature and built from foundations and relationships of previous activities. Larger context issues of Indonesian government decentralization, the increasingly active role of ASEAN in fire and haze issues, and political developments also influenced the evolution of the program. Flexibility was a key factor in program development.

### **PROGRAM OVERVIEW**

- During the period August, 1998 through September, 2002, the USFS provided technical and facilitative assistance to strengthen fire management in Southeast Asia with primary emphasis in Indonesia. Assistance was in the form of short to medium term assignments of USFS fire management specialists and facilitators for specific activities, and hosted study exchanges. Within the context of overall objectives,

seventeen discrete activities were implemented, engaging a total of twenty-seven USG personnel (twenty-five USFS and two Bureau of Land Management). To ensure continuity and maintenance of relationships, one fire management specialist served as project leader for activities, with oversight provided by USFS International Programs.

- Program emphasis focused on capacity building and mentoring, with a long-term objective of sustainability. USFS employees served as technical advisors on teams led by Indonesians and mentored counterparts in envisioning, designing, coordinating, and implementing fire management activities. Generally, USFS work was accomplished “behind the scenes” with counterpart national staff assuming lead roles.
- Determination of the specific nature of fire management activities was based on results of previous activities or evaluation of expressed needs. The activities were generally sequential in nature and build from findings and foundations of previous activities. Flexibility was a key factor in the program development.
- The majority of activities were conducted under the auspices of the ASEAN Senior Officials on the Environment HTTF and the Sumatra/Borneo SRFA. Coordination of USFS projects was conducted out of the Jakarta ASEAN Secretariat building in partnership with the ASEAN Coordination and Support Unit (CSU), a work group created to support implementation of the Regional Haze Action Plan.
- Program activities were conducted at regional, national, provincial, and local levels with counterpart agencies representing each of these levels. Partner donor institutions were actively sought for collaborative implementation of projects. Collaborative partners included: Association of Southeast Asian Nations, Asian Development Bank, European Union Forest Fire Prevention and Control Project, New South Wales Rural Fire Service (Australia), Saskatchewan Environment and Resource Management (Canada), Canadian Forest Service, United Nations Environmental Program, United Nations Office for Coordination of Humanitarian Affairs, United Nations High Commission on Refugees, German Technical Cooperation (GTZ-Germany), Malaysia Fire and Rescue Service, and the Thai Royal Forestry Department.
- Concepts pioneered by the USFS such as fire suppression mobilization plans, fire response simulation exercises, and workshops to empower interagency institutions responsible for fire management have been adopted by the SRFA as models.
- USFS activities served as a catalyst for other donor country activities and contributions. Fire management activities pioneered by the USFS designed to strengthen fire management capacity in Indonesia have been replicated in other provinces with funding from other donor countries.

## **SPECIFIC PROGRAM OBJECTIVES**

### **SEAEI FY 1998**

Objectives for FY 1998, were as follows:

- Work with the ASEAN Secretariat, the ADB regional technical assistance team, and the HTTF to understand on-going efforts and recommend how United States experience and expertise might best be used to build capacity within ASEAN countries to coordinate response to fires and prevent future disasters. Establish contacts, and identify potential collaborators and counterparts for activity implementation.
- Based on conclusions from the initial activity, design, develop, and implement activities to assist Indonesian and other ASEAN country governments in preparing assessments, plans and structures to strengthen skills for a coordinated fire response.
- Explore options for a workshop to strengthen Indonesian mechanisms for disaster response.
- Explore options for building capacity through work-study fire management exchanges to the United States.

### **EAPEI FY 1999**

Objectives for FY 1999 included the following:

- Provide USFS project coordination and technical fire management assistance to the ASEAN RHAP CSU.
- Develop and implement a pilot fire suppression mobilization plan for two provinces in Sumatra.
- Develop and implement a fire exchange work-study program in the United States for Indonesian fire managers, in collaboration with the other donor countries with on-the-ground fire management projects in Indonesia (Germany (GTZ), European Union (EU), and Japan (JICA).

### **EAPEI FY 2000**

Objectives for FY 2000 included the following:

- Provide on-going fire management technical expertise to the ASEAN Regional Haze Action Coordination and Support Unit.
- Build capacity at the provincial level to develop and implement fire suppression mobilization plans in fire prone provinces of Sumatra and Kalimantan
- Provide technical expertise to the Indonesian Disaster Coordination Agency to develop and implement a fire disaster simulation exercise.
- Provide resource and financial support for a regional fire investigation training course.

## SPECIFIC ACTIVITIES AND RESULTS

### SEAEI FY 1998

- During the period August through December, 1998, a USFS fire management specialist worked with the regional technical assistance team at the ASEAN Secretariat to provide technical expertise and review of proposals. As a result of this consultative input, the mitigation component of the Regional Haze Action Plan was fleshed out and specific activities identified to operationalize this component. The USFS specialist mentored the Indonesian fire management specialist assigned to the technical assistance team, introducing concepts of fire suppression mobilization planning, resource tracking, interagency fire protection agreements and operating plans, equipment warehouse inventorying and maintenance systems, etc. Over the period, this Indonesian person's skills and knowledge increased significantly, and this improved capacity has been carried back to the Ministry of Forestry and Estate crops, the home unit.
- Catalyzed and provided expertise in designing, developing terms of reference, coordinating, and implementing an analysis of forest and land fire suppression capabilities. Assessment teams were deployed in Indonesia (Riau, Jambi, South Sumatra, East Kalimantan, South Kalimantan, Jawa), Malaysia, Brunei, Philippines, and Singapore. The three teams assessing capacity in Indonesian provinces were designed to build in-country capacity for this type of activity. These teams were led by Ministry of Forestry and Estate Crops employees and included representatives from the National Environmental Impact Management Agency (BAPEDAL). The USFS provided funding support for Indonesian counterpart participation. Technical expertise for the Sumatra and Kalimantan teams was provided by fire specialists from the USFS, BLM, and the New South Wales Rural Fire Service. German student interns accompanied the teams, providing interpretive and administrative assistance. The team assessing suppression capability on Jawa consisted entirely of Indonesians trained in the assessment process. Teams assessing fire suppression capabilities in other ASEAN countries were composed of international fire specialists from the USFS and the Saskatchewan Environment and Resource Management unit (Canada). The results of these assessments were documented in seven reports entitled Analysis of Forest and Land Fire Suppression Capabilities with the respective areas of coverage indicated. These reports were synthesized and presented to the HTTF and the SRFAs. The information was also presented in a workshop format to interested Indonesian agencies and donor countries. The information from the assessment greatly enhanced the regional and donor country understanding of the problems and provided a guidepost for the next phase of activities.
- Developed a conceptual model for an ASEAN regional fire suppression mobilization plan. The Indonesian fire management specialist presented this plan at the HTTF and SRFA meetings using a power point presentation. As a result of this activity and

the assessment, Malaysia, Brunei, and Singapore are better prepared to respond with firefighters and other support personnel and equipment to Sumatra and Borneo in the event of another fire/haze event. This conceptual framework was subsequently used as a reference document in preparing mobilization protocols for the ASEAN Trans-boundary Haze Agreement signed in June, 2002. Prepared an activity concept presentation for developing a pilot fire suppression mobilization plan at the provincial level in South Sumatra and Riau. This activity concept was presented at the Sumatra SRFA meeting and endorsed for subsequent implementation.

- Provided input to a World Bank funded feasibility study for construction of a Regional Fire Training Center in Palangkaraya, Central Kalimantan. Provided advice on developing curriculum for such a program. Ultimately, the project did not prove feasible due to logistics of travel to this relatively remote location and lack of funding.
- Explored options for collaborative partnership with GTZ, JICA, and the EU for a work-study fire management exchange program in the United States. Participants would be selected from Indonesian counterparts associated with on-the-ground fire projects implemented by these donor institutions. GTZ opted to participate and initial timeframes and general plans were agreed to.

### **EAPFI FY 1999**

- During the period February-May and September-October, 1999, USFS fire management specialists continued to work with the regional technical assistance team at the ASEAN Secretariat to provide technical expertise and review proposals. USFS specialists continued to mentor Indonesian counterparts working with this group.
- Catalyzed, designed, implemented, and provided technical expertise for a project developing a pilot fire suppression mobilization plan for Riau and South Sumatra provinces. Consistent with capacity building objectives, the team leaders were from the Ministry of Forestry and Estate Crops. Other members represented Indonesian agencies responsible for various aspects of fire management. The USFS provided funding support for Indonesian counterpart participation. Two fire management specialists from the USFS provided technical expertise to the team. A significant outcome of this activity was the strengthened capacity of team members for developing mobilization plans. Initially, the international fire specialists took the lead role describing the format and contents of a mobilization plan, identifying important entities to visit, and formulating interview questions. As the teams progressed, Indonesian members took an increasingly active role in the plan development and ended up writing the entire prototype plan with minimal assistance. During the course of plan developing, an NGO and student seminar was convened to discuss fire issues and their potential participation in response efforts during the next fire/haze event. Interagency meetings provided a forum for dialogue around fire management issues and a better understanding of the role each might play in

mobilizing to fight fire. Many previously unrecognized resources were identified as available and willing to become involved in fire suppression efforts. In some of these meetings, informal agreements were made for future collaborative training and sharing of information. The information provided through the process of mobilization planning was the basis for identifying strengths and weaknesses of the existing system and resulted in specific recommendations for future activities.

- In collaboration with a German Technical Cooperation field fire management project, developed and implemented a three-month work-study training opportunity with the US Forest Service for two Indonesian fire managers from East Kalimantan. The program provided in-depth experience with fire training, prevention, detection, warehouse operations, emergency command centers, management, on-scene command, and the Incident Command System. Trainees returned to Indonesia with renewed commitment and fresh ideas to approach fire management issues in East Kalimantan
- Provided technical expertise to develop, implement, and evaluate a fire response simulation exercise for Kampar District, Riau Province. The objectives of this activity were to create a practice field for learning and strengthening existing institutional structures involved with fire suppression response activities at the province and district levels; and introduce the concept of a sequential fire response scenario simulation exercise with increasingly complex inputs over time. The first practical simulation exercise served as a valuable learning foundation for both the simulation team and the participants in developing a process and technical package for future exercises. This technical simulation exercise package was subsequently utilized in a number of replicated simulations in other districts of Riau, South Sumatra, and West Kalimantan.
- Designed and facilitated a process and provided technical assistance in developing a provincial level workshop in Riau province with an objective to strengthen forest and land fire coordination institutions. This provincial level workshop, designed to empower the PUSDALKARHUTLA (provincial interagency coordination institution for fire management response), served as a showcase of a working model for addressing the changing roles of national provincial level government agencies within the context of a government decentralization continuum. It reinforced the Indonesian national level process of government decentralization, regulated by the 1999 law increasing autonomy at the provincial level by the end of Year 2001. The workshop methodology involved six phases: 1) develop in-country support, 2) interview all member agencies of the PUSDALKARHUTLA, 3) evaluate information collected during interviews and develop alternatives, 4) pre-workshop meeting, 5) workshop, 6) follow-up. A core Indonesian interagency workshop team of fourteen individuals implemented this process with facilitative and technical assistance provided by the USFS. During this process, there were ample opportunities to embed fire management policy recommendations in dialogues. USFS fire specialists gave two papers at the workshop addressing policy issues. Three press releases during the course of the workshop process provided excellent

media coverage. After the workshop, the Riau governor signed a decree restructuring the PUSDALKARHUTLA and establishing a permanent PUSDALKARHUTLA Secretariat. General Guidelines for Standard Operating Procedures were developed for fire suppression, prevention, and law enforcement, defining the roles of each member agency. Recommendations were developed for follow-up activities. A draft, operating plan was approved and support provided in the form of position allowance and office equipment to empower the Secretariat. The process for development of this type of workshop was documented and distributed to interested individuals in ASEAN and Indonesia. A workshop using this process model was implemented in West Kalimantan funded by AusAid.

- Upon request of ASEAN, provided a two-person facilitative and technical assistance team for fire response simulation exercises and a PUSDALKARHUTLA workshop in West Kalimantan as a collaboration with ASEAN and AusAid. Activities were modeled after previously developed exercises of this nature pioneered by the USFS.
- The US Interagency National Mobilization Plan and State of California Mobilization plan were translated into Bahasa Indonesia and copied for distribution to provinces working on mobilization planning. These were distributed extensively at the Riau PUSDALKARHUTLA workshop, used in West Kalimantan for the AusAid funded fire management project, and continue to be used in other provinces developing fire suppression mobilization plans.

### **EAPEI FY 2000**

- USFS fire management specialists continued to work with the ASEAN Regional Haze Action Plan Coordination and Support Unit at the ASEAN Secretariat to provide technical expertise and review proposals. Technical expertise was provided in support of implementation of the ASEAN Regional Haze Action Plan and other entities within the Southeast Asian fire management community. This position also served to facilitate leveraging of activities through partnerships and technical. Time periods for this assistance were as follows: March 13 to May 5, 2000; August 16 to October 19, 2000; May 7 to June 15, 2001; February 21-March 5, 2002; April 8 to May 3, 2002; July 31 to August 23, 2002; and October 4-18, 2002.
- During August through mid-October, 2000, pilot provincial Fire Suppression Mobilization Plans (FSMP) were developed for two districts in South Kalimantan and three districts three districts in South Sumatra. Interagency teams led by Indonesian provincial officials collected information and developed these plans with technical assistance provided by two USFS fire management specialists/facilitators working with each team. The team visited with many local government officials, concessionaire and plantation managers, community leaders, and various NGOs. In addition to collecting information necessary for development of the FSMP, USFS specialists were able to provide fire management policy recommendations during these interviews with key officials. The output from this activity is increased

capacity of provincial/district officials to recognize and utilize Indonesian fire suppression resources, and a prototype FSMP identifying resources and processes to mobilize for fire suppression. During April to May, 2001, the USFS partnered with the Integrated Forest Fire Management Project/GTZ to develop a FSMP for Kutai Barat District in East Kalimantan. The same implementation model from previous FSMP activities was applied, with a provincial interagency team assisted by technical experts from the USFS and GTZ. In April, 2002, a similar FSMP activity was conducted in Jambi province.

- During the period May 10 to June 13, 2001, the USFS designed, facilitated, and implemented a national level forest and land fire disaster simulation exercise in Indonesia. The exercise was linked and conducted simultaneously to three levels of government: national, provincial, and district. Coordination of the exercise required commitments from six key institutions: BAKORNAS PBP, Ministry of Forestry, Ministry of Agriculture, BAPEDAL, South Sumatra provincial government, and the United Nations Office for the Coordination of Humanitarian Affairs. The three-day exercise engaged persons from fifteen institutions/agencies in a variety of roles including participants, role players, evaluators, and technical advisors. This was the first forest fire national disaster simulation exercise conducted in Indonesia and also the first simulation exercise linked to three levels of government. Prior to this exercise, the three key agencies responsible for fire response, BAKORNAS PBP, Ministry of Forestry, and BAPEDAL had not interacted in the context of a national fire disaster. As a result of this simulation exercise, these key agencies clarified roles, responsibilities, interrelationships, and how they will work together in the event of such a disaster. BAKORNAS PBP was empowered as the lead agency responsible for overall sectoral coordination of the response. Decentralization has impacted relative roles of agencies at the three levels of government. The simulation exercise provided an opportunity to enact these new roles. The scenario packages displayed a range of technologies available to assist agencies in gathering and analyzing information on forest fires and weather variables.
- A work-study exchange opportunity hosted by the USFS provided practical wildland fire management experience to a Forestry Department employee from the province of East Kalimantan. During the period July 10 – August 27, 2001, the Dinas Kehutanan employee gained a working knowledge of the US fire logistics organization and guidelines, standard operating procedures, warehouse operations, logistics and supply systems in a fire camp setting, and fire management from the district and forest perspective. This work-study exchange was funded through a partnership with Integrated Forest Fire Management Project/GTZ.
- A jointly sponsored USFS-ASEAN workshop was conducted on February 28, 2002, with the following three objectives: 1) disseminate results of the CIFOR study “Underlying Causes and Impacts of Fire in Southeast Asia”, 2) share experience of past or ongoing fire prevention activities implemented at the field operational level, and 3) explore possible future fire prevention activities and potential collaborations for implementation, based on the research results presented and shared explore

possible future fire prevention activities and potential collaborations for implementation, based on the research results presented and shared experiences. Approximately thirty-five persons attended the workshop and considerable progress was made in addressing problems of coordination among various fire management projects.

- USFS provided a fire management expert for a plenary presentation at the ASEAN “World Land and Forest Fire Hazards: An International Conference and Trade Exhibition” held in Malaysia during June 2002.
- USFS provided financial assistance for Indonesian participants attendance at an ASEAN sponsored course on fire investigation and prosecution.
- USFS provided technical assistance to the ASEAN Secretariat in developing Standard Operating Procedures (SOP’s), which fall under the ASEAN Agreement on Transboundary Haze Pollution. These SOP’s explain the process of requesting or offering assistance through the ASEAN Secretariat (rather than bilaterally) in a fire/haze event. These SOP’s will be tested in the forthcoming regional level fire simulation exercise.
- Under the auspices of the ASEAN Haze Technical Task Force Sub-Regional Fire Fighting Arrangements (Brunei, Indonesia, Malaysia, Singapore), USFS technical specialists assisted in designing both a tabletop and full-scale regional level fire simulation exercise. USFS specialists participated in the Simulation Organizing Committee (SOC) and the Sub-Regional Firefighting Arrangements meetings in Brunei in January 2003. The SOC meeting discussed the logistics of the tabletop and full-scale fire simulation exercises. The SRFA meeting discussed the progress of all activities, which fall under the purview of the committee.
- USFS provided financial assistance to the ASEAN CSU to develop technical guidelines for zero burning techniques and controlled burning techniques.
- USFS provided assistance for ASEAN CSU development of a Southeast Asia fire database. Access to the database will be available for partners and collaborators within the Southeast Asia fire management community. The database will describe projects, specific activities, outputs, and publications for all fire management activities.

## **PROGRAM IMPACT AND SUSTAINABILITY**

In envisioning, designing, and implementing projects funded through SEA-EA/EAPEI, the USFS served in a pioneer and catalytic role with other donor countries/institutions. The primary collaborative niche with the ASEAN Haze Technical Task Force Coordination and Support Unit has been emulated by other donor institutions, creating a

focal point for donor activities in the arena of fire/haze issues. AusAid funded a project in West Kalimantan modeled on the fire suppression mobilization plan development, simulation exercise, and PUSDALKARHUTLA workshop activity pioneered by the USFS. The Asian Development Bank recently collaborated with the Riau Province PUSDALKARHUTLA with similar activities. This would not have been possible without the higher institutional profile and capacity building resulting from the PUSDALKARHUTLA workshop sponsored by the USFS. The two USFS work-study exchanges in the United States with Indonesian fire managers associated with the GTZ program, added significant depth to the GTZ fire management project in East Kalimantan. The simulation exercises conducted at the local, national, and regional levels attracted much interest and contributions from other donor institutions.

Concepts pioneered by the USFS such as fire suppression mobilization plans, fire response simulation exercises, and workshops to empower interagency institutions responsible for fire management have been institutionalized and adopted by the SRFA as models. Indonesian counterparts from USFS activities have been empowered, gained significant technical expertise, and, at the national level, now form the staff nucleus of the Directorate of Forest and Estate Crops Fire Control. They are now regarded as experts and sought after for consultation. Similar Indonesian counterpart groups at the provincial levels have formed valuable networks, and significantly increased their understanding of fire management systems. The strategy to form a “critical mass” of Indonesians familiar with technical aspects of fire management systems has been achieved. In addition, the program engaged twenty-seven USFS specialists who could be used in follow-on activities in a U.S. government response to fire in the region.

While implementing projects, USFS personnel have interacted with a wide range of Indonesians, from high-level officials to firefighters. Governors, high-ranking ministry officials, technical specialists, scientists, regional fire experts, provincial government officials, NGOs, industry representatives, fire fighters, and others have all been engaged in various capacities with the projects. This myriad of contacts allows opportunities for policy messages embedded in technical projects, around issues fundamental to the fire problem. Project design has also been reflective of the Indonesian government trend towards decentralization, with emphasis on empowerment at lower levels of government.

## **BUDGET MANAGEMENT**

As stated in the overview portion of this report, activities within this program have been sequential in nature and build from findings and experiences of previous activities. The format of the funding request allowed for flexibility to respond to emerging needs not always addressed in the proposal. The budget reflects additional and/or modified activities that were not described in the proposals. Activities not specifically addressed in the proposal, yet funded include: local simulation exercise development, the Riau PUSDALKARHUTLA workshop, facilitative and technical assistance to West Kalimantan simulation exercise and workshop, translation of the US mobilization guides, hosted work-study programs in the US, Underlying Causes Study workshop, resource support for the World Land and Forest Fire Hazard’s conference, financial support for the

zero burn guidelines, regional level fire disaster simulation exercise, and financial support for the ASEAN RHAP CSU data base of fire management activities.

## BUDGET

SEAEI FY 1998 (\$200,000)

Activity	Expenses
Technical Assistance to ASEAN	\$35,000
Assessment of Fire Suppression Capabilities	\$55,000
Model Mobilization Plans	\$54,000
Conceptual Regional Model	
Pilot Mobilization Planning Process	
Fire Training Center Feasibility Study	\$ 5,000
Fire Response Simulation Exercise	\$13,000
Explore Collaborations for Work-Study Exchange	\$ 2,000
Administrative Costs	
Travel	\$10,000
Staff Time	\$26,000
<b>TOTAL</b>	<b>\$200,000</b>

EAPEI FY 1999 (\$293,750)

Activity	Expenses
Technical Assistance and Support to ASEAN	\$45,000
US Training for Fire Officials	\$56,750
Province Level Interagency Workshop	\$95,000
Preparation	
Implementation	
Technical Assistance to MoFEC and ASEAN – West Kalimantan	\$35,000
Translation of US Mobilization Guides	\$ 5,000
Administrative Costs	
Travel	\$15,000
Staff Time	\$42,000
<b>TOTAL</b>	<b>\$293,750</b>

EAPEI FY 2000 (\$600,000)

Activity	Expenses
Technical Assistance and Support to ASEAN RHAP-CSU	\$336,000
Provincial capacity building Fire suppression mobilization plans – South Kalimantan, East Kalimantan, South Sumatra, and Jambi Hosted work-study in the US – Fire Logistics focus	\$100,000
Indonesian national level fire disaster simulation exercise	\$30,000
Workshop on Underlying Causes of Fire in Southeast Asia	\$10,000
Resource personnel for the World Land and Forest Fire Hazards: An International Conference and Trade Exhibition – June, 2002	\$ 5,000
Financial support for the ASEAN fire investigation course	\$ 5,000
Financial support for the zero burn technical guidelines	\$ 4,000
Regional level (Brunei, Indonesia, Malaysia, Brunei) fire disaster simulation exercise	\$30,000
Financial support for an ASEAN RHAP-CSU data base of fire management activities in SE Asia	\$10,000
Administrative Costs	
Travel	\$20,000
Staff Time	\$50,000
<b>TOTAL</b>	<b>\$600,000</b>

## PRODUCTS

### List Of Papers By Activity

#### Assessment Activity

- Terms of Reference Inventory and Analysis of Forest and Land Fire Suppression Capabilities
- Analysis of Forest and Land Fire Suppression Capabilities – East Kalimantan and South Kalimantan
- Analysis of Forest and Land Fire Suppression Capabilities – Riau, Jambi, South Sumatra
- Analysis of Forest and Land Fire Suppression Capabilities –Jawa
- Analysis of Forest and Land Fire Suppression Capabilities – Brunei Darussalam
- Analysis of Forest and Land Fire Suppression Capabilities – Philippines
- Analysis of Forest and Land Fire Suppression Capabilities – Malaysia
- Analysis of Forest and Land Fire Suppression Capabilities – Singapore

#### Conceptual Mobilization Plan

- Framework For An ASEAN Regional Fire Suppression Mobilization Plan (document)

- Framework For An ASEAN Regional Fire Suppression Mobilization Plan (powerpoint presentation)

#### Pilot Provincial Level Mobilization Plan

- Pilot Project Planning for Fire Suppression Mobilization in Riau and South Sumatra Provinces
- Activity Summary Report – Planning for Fire Suppression Mobilization in Riau and South Sumatra Provinces

#### Work-study Training Opportunity in the US for Indonesian Fire Managers

- USFS Program of Training Activities for Indonesian Fire Managers

#### Fire Suppression Response Simulation Exercise

- Fire Suppression Mobilization Simulation Exercise #1 – (scenario and inputs)
- Fire Suppression Mobilization Exercise #1 Evaluation and Monitoring Elements
- Evaluation Report – Fire Response Simulation Exercise, Riau Province, Kampar District

#### Interagency Coordination Workshop – Riau Province

- Strengthening Fire Management In Indonesia – Interagency Coordination Workshop, Riau Province
- Riau Province Strengths in Addressing Forest and Land Fire Haze Issues
- Multiple Agency Coordination

#### West Kalimantan Fire Response Simulation and Interagency Coordination Workshop

- Analysis and Comments on Fire Preparedness in West Kalimantan
- West Kalimantan Trip Summary

#### Fire Suppression Mobilization Plan development in South Sumatra, South Kalimantan, East Kalimantan, and Jambi

- Fire Suppression Mobilization Plan for Three Districts of South Sumatra
- Fire Suppression Mobilization Plan for Two Districts of South Kalimantan
- Fire Suppression Mobilization Plan for Kutai Barat District East Kalimantan Province
- Fire Suppression Mobilization Plan Kabupaten Tanjung Jabung Barat, Jambi Province

#### Hosted Work Study Programs

- United States Forest Service Program of Training Activities for Indonesian Fire Managers
- United States Forest Service Work Study Program: Logistics and Coordination Aspects of Fire Management.
- Training: Logistics Operations in the United States

#### World Land and Forest Fire Hazards: An International Conference and Trade Exhibition

- USFS fire management expert presentation is included in the conference proceedings

## **CONCLUSION**

Fire issues in Southeast Asia are complex and multi-faceted. Capacity building in the technical arena is an important component in addressing the issues. Of equal importance are issues of land tenure, land conversion, globalization of markets and consumer demand, financial incentives/disincentives, indigenous people's livelihood, and agricultural practices. These issues have profound impacts on land management, in which fire problems can be seen as symptoms of more fundamental issues. Addressing these larger issues require strong political will and commitment through policy change and associated law enforcement. Full measure of the impacts of this USG funded program can be seen in the improved technical knowledge of individuals involved with the program. In order to realize full optimization of program results, this increased level of technical skills must be combined with political will to tackle the more fundamental aspects of fire and haze issues.