



UNITED NATIONS ENVIRONMENT PROGRAMME  
PROGRAMME DES NATIONS UNIES POUR L'ENVIRONNEMENT



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**To:**

**1 July 1998**

**Dr. Kanta Kumari**  
**GEF Secretariat (Fax: 202 522 3240)**

**From:** **Pak Sum Low** *P. S. Low*  
**GEF Coordination Office, UNEP**

**Subject:** **UNEP MSP: *Emergency Response to Combat Forest Fires in Indonesia and to Prevent Regional Haze in South East Asia***

Dear Kanta,

Thanks for your fax of 22 June 1998 and the GEF Council members' (Australia and South Korea) comments on the UNEP MSP entitled "*Emergency Response to Combat Forest Fires in Indonesia to Prevent Regional Haze in South East Asia*". I have now incorporated their comments as far as possible. Kindly refer to those underlined sentences or paragraphs in the revised version attached.

In addition, I would like to clarify the following points:

**Comments raised by Australia:**

1. "*There is extensive donor activity on the Indonesian fires and a particular issue has been the duplication of activities. The proposal does not indicate whether this issue has been addressed.*" -- In response to this comment, a new paragraph has now been added at the end of Section 9: "*It will be ensured that there will be no duplicative effort between this project and those on-going projects undertaken or to be undertaken by other regional and international agencies and the donor countries.*"

2. "*Australia has considerable reservations about UNEP taking an operational role on the Indonesian fires issue - OCHA has operational responsibility.*" -- As mentioned in the project brief, UNEP's role is to catalyze and coordinate international efforts aimed at addressing the Indonesian fires issue, jointly with OCHA (Office for Coordination of Humanitarian Affairs) based in Geneva, as evidenced by the Expert Group and Donors meetings jointly convened by UNEP/OCHA in April 1998 in Geneva.

3. "*The proposal suggests that the cause of the fires has been 'slash and burn agriculture' On all reports this assertion is inaccurate. Various reports suggest that a very important cause of the fires has been associated with land clearing for large scale agricultural and forestry development projects. It is of concern that the project is based on this inaccurate analysis.*" -- In fact, "*the fires were set for clearing land, amid the prevailing severe drought (the worst in 50 years) associated with El-Nino*" has been cited in Section 7 (paragraph 4) as the cause of the Indonesian forest fires. "*Slash and burn*" practice has also been mentioned, as we originally

thought that these two practices are linked. In order to avoid any confusion, all references to "slash and burn" have now been deleted and revised accordingly.

4. *"In many places the proposal refers to the significant impacts of fires on biodiversity, however, there is no information on the extent of these impacts. There is considerable doubt as to whether it is the fires themselves or other aspects of land clearing which are causing the major biodiversity impacts."* -- Undoubtedly, land clearing is causing major biodiversity impacts. However, the spread of fires from land clearing in one area to other areas can also cause great biodiversity impacts, particularly in those biodiversity rich areas. This project is to provide emergency response to combat forest fires rather than focusing on the extent of these impacts, which will be assessed in some other studies.

5. *"The proposal's focus almost entirely on short-term fire-fighting actions. The view of Australia is that short-term measures have proved largely ineffective and that longer term changes to land management practices are the only ways/solutions to the fire problem...."* -- This point is well taken. Indeed, as you are fully aware, this proposal is addressing short-term measures for the emergency situation. Longer term changes in land management practices will, of course, be more effective in addressing the fire problem. However, this will be the focus of other studies.

6. *"Coordination of efforts"* -- Whether or not *"UNEP is probably not the most suitable body for this task"* is not an issue, as UNEP has been mandated by the UN Secretary-General to undertake this task. We agree that the budget of US\$50,000 (GEF: US\$30,000; UNEP in-kind: US\$20,000) *"seems too low"*. However, given the size of the total budget, UNEP has no choice but to work within this constraint over the project duration of one year.

7. *"Convening of experts and donors meetings"* -- Due to the emergency situation, the Experts Group and Donors meetings as described in the project brief took place in April 1998 in Geneva soon after this proposal was recommended for approval by the GEF Secretariat in March 1998. This is one activity which had actually taken place even before the final approval of the project proposal.

8. We also agree that the budget of US\$50,000 for *"raising of national, regional and global public awareness on the danger of forest fires, etc."* *"seems too low"*. Once again, given the size of the total budget, UNEP has no choice but to work within this constraint over the project duration of one year.

9. *"Establishment of an early forest fires warning system"* -- Indeed, this will be a collaboration effort of UNEP/WMO/NOAA/ASEAN, as indicated in this revised version. The contribution of the WMO Regional Specialized Meteorological Centre on Environmental Emergency Response based in Melbourne, Australia, is also acknowledged in this revised version.

#### **Comments raised by South Korea:**

1. *"The project does not seem to focus on areas of high biodiversity or existing priority areas for biodiversity protection."* -- This project was prompted by the forest fires in East Kalimantan. By establishing an early warning system and strengthening the capacity of the ASEAN countries in fire-fighting and fire-prevention, it will lead to the preservation of biodiversity (including those rich areas) and the carbon sinks of the countries. Thus, the focus of this project is not ONLY on certain *"areas of high biodiversity or existing priority areas for*

*biodiversity protection*" but on all areas.

2. *"There also seems to be no response to the recommendation of the second working group meeting in ASEAN sub-regional fire fighting arrangements that the top priority of the project be an aerial surveillance regime for Sumatra."* -- The recommendation referred to in this comment has been incorporated even before this revised version.
3. *"Indicators" for "training and capacity building" -- "Certain number of people trained" has now been replaced by "Relevant government officers and fire fighters trained and relevant institutions for forest fire fighting and prevention strengthened"*.
4. *"Country driven. There is no attempt to consider country input to the specifics of this proposal at all and, as we point out above, some conflict between what is proposed and one of the recommendations at the country/regional level."* -- UNEP has participated a number of policy and technical meetings organized by the ASEAN countries and ADB, including the ASEAN Environment Ministerial meetings held in February 1998 in Kuching, Malaysia and in April 1998 in Brunei, the *Second Working Group Meeting of the ASEAN Sub-Regional Fire Fighting Arrangement (RFA)* held on 5 May 1998 in Singapore, and the *"ADB Inception Workshop on the Regional Technical Assistance Project on Strengthening the Capacity of ASEAN to Prevent and Mitigate Transboundary Atmospheric Pollution"* held on 12 May 1998 in Jakarta. The concerns and comments made by the governments during these meetings have been incorporated in the project brief during the revision process. Since then, the proposal has been endorsed by the GEF National Focal Points of the ASEAN countries.

With the revisions indicated in the attached project brief and the above clarifications, we would be most grateful if you could kindly facilitate the expeditious approval of the project proposal by the CEO, so that the GEF funds can be used for the proposed activities immediately (in fact, some activities such as the Experts Group meeting and the Donors meeting had already taken place in April 1998).

Kindly note that the next ASEAN Environment Ministers Meeting will be held on 30-31 July 1998, possibly in Kuala Lumpur. UNEP is expected to present a detailed plan for the implementation of this project at this meeting. Based on UNEP's presentation, the Ministers are expected to take necessary decisions regarding the implementation of the project especially the institutional and other linkages among the ASEAN countries so as to facilitate regional implementation.

The endorsement letters from the GEF National Focal Points of Indonesia, Malaysia, Singapore and Thailand are attached. Please note that Dr. Saksit Tridech, Secretary-General, Office of Environmental Policy and Planning, Bangkok, is the new GEF Operational Focal Point for Thailand.

Despite the endorsement letter from Myanmar, we have decided not to include Myanmar in this project as it is not affected by the haze created by the Indonesian fires like the other neighbouring countries have been.

An email version with all the underlined sentences or paragraphs removed will be sent to you later.

Best regards.

| <b>Project Identifiers</b>  |   |
|---|---|
| 1. <b>Project name:</b> Emergency Response to Combat Forest Fires in Indonesia to Prevent Haze in South East Asia   | 2. <b>GEF Implementing Agency:</b> UNEP   |
| 3. <b>Countries in which the project is being implemented:</b> Indonesia, Malaysia, Singapore, Thailand, and the Philippines  | <p>4. <b>Country eligibility:</b><br/>Ratification of CBD: Indonesia (23/08/1994); Malaysia (24/06/1994); Singapore (21/12/1995); Thailand* (signed on 12/06/1992 but not yet ratified); and the Philippines (8/10/1993); Brunei** (not eligible)</p> <p>Ratification of UNFCCC: Indonesia (23/08/1994); Malaysia (13/07/1994); Singapore (29/05/1997); Thailand* (28/12/1994); and the Philippines (02/08/1994); Brunei ** (not eligible)</p> <p>* As Thailand has not ratified CBD, hence its activities in this project will be restricted to those related to climate change.</p> <p>** As Brunei is not a Party to the CBD and UNFCCC, it cannot be funded by GEF for the project activities. Its participation will be self-financing or funded by other sources.</p> |
| 5. <b>GEF Focal Areas:</b><br>Biodiversity and climate change   | 6. <b>Operational Programme/Short-term measure:</b><br>Short-term measures under (i) Biodiversity: GEF Operational Programme 3: Forest Ecosystems; and (ii) Climate Change.   |
| <p>7. <b>Project linkage to national priorities, action plans and programmes:</b></p> <p>Forest fires (controlled or uncontrolled) have profound impacts on the physical environment including land cover, land use, biodiversity, climate change and the forest ecosystems. They also have enormous implications on human health and on the socio-economy of the affected countries</p> <p>According to a report of the Asian Development Bank (ADB), forest fires have been occurring in Southeast Asia (SEA) since the Pleistocene. However, as evidenced by the 1997 fires in Indonesia, the <u>improper land clearing practices</u> have reached such an uncontrolled level that a single incident could cause a serious environmental disaster.</p> <p>Indeed, the seriousness of this environmental disaster in Indonesia (Sumatra and South Kalimantan) both in terms of scale, affected areas, duration and long-term impacts is unprecedented. The intense haze created by the forest fires from July to November 1997 blanketed and choked Indonesia and its neighbouring countries (Malaysia, Singapore, Thailand, Brunei and</p> |   |

the Philippines) and thus the disaster has become the top priority on the environmental agenda among the countries of the region.

While the root causes of the forest fires are yet to be fully assessed and analysed, it has become clear that the fires were set for clearing land: amid the prevailing severe drought (the worst in 50 years) associated with El-Nino, the spreading of the fires could not be controlled. Although there seems to be a tendency to blame the El-Nino weather condition for the environmental disaster, it is also clear that there is an urgent need for effective government control of the land clearing practice for large scale agricultural and forestry development projects.

According to WWF, more than 1000 fires had affected an area of more than 750,000 hectares in the 1997 forest fires in Indonesia. Other estimates put the area affected at more than 1 million hectares. The final estimates of the damage are not yet available. 262 deaths associated with the fires have been recorded. The haze covered 3,200 km<sup>2</sup> in six countries affecting 70 million people. Factories, schools, offices and airports were closed. The economy was also seriously affected as the tourism sector suffered a sharp decline in affected countries. A conservative estimate of US\$ 1.4 billion in damage, with the highest toll falling on Indonesia, has now been reported by a study conducted by the Economy and Environment Programme for South East Asia (EEPSEA). This estimate was conservative and did not include costs such as long-term damage to health, which may eventually exceed the short-term health costs, or losses directly attributable to forest fires. The environmental costs of the 1997 forest fires in terms of greenhouse gases (GHG) emissions, loss of biodiversity and destruction of habitats of the endemic species remain to be assessed. The November 1997 report of the United Nations Disaster Assessment and Co-ordination (UNDAC) Team, of which UNEP is a member, concluded that the fires *"have turned out to be an environmental emergency of exceptional proportions."* The Co-ordination Team warned of *"a repetition of the present emergency if current practices remained unchanged."*

A new outbreak of forest fires occurred in East Kalimantan, Indonesia in early 1998. The Antara News Agency of Indonesia reported that 20,000 hectares of bushes and forests had been burned in the first two months, causing damage estimated at more than 76 billion rupiah (US\$ 8.1 million). The number of hot spots was highest at 1,043 on 22 March 1998, as shown in Figure 1. The smoke reduced visibility to a maximum of 400 yards in the two eastern cities of Samarinda and Balikpapan located 750 miles northeast of Jakarta. By mid-April 1998, the UNDAC has estimated that over 250,000 hectares of forest in East Kalimantan have been razed in fires this year. It should be noted that there are two distinctive characteristics in East Kalimantan: (1) coal is present close to the soil surface, and this has made the area particularly vulnerable to fires; (2) its geographical position (theory of ocean current related to Indonesian through flow and Walker circulation) has probably resulted in it being most frequently affected by fires.

Indonesia's recent economic crisis is severely hampering its ability to mobilise internal financial resources to fight the present forest fires. Accordingly, fears have been raised that haze might return perhaps even more severe than that in 1997. In view of this emergency situation, the ASEAN Environment Ministers met on 25 February 1998 in Kuching, Malaysia, and noted that *"the fires in East Kalimantan are of serious concern because of the prolonged dry condition."* This proposal is designed to assist the countries of the region, particularly Indonesia, to address this concern.

**8 GEF national operational focal point and date of country endorsement:**

Mr. Effendy Sumardja, Assistant Minister for Coordination, State Ministry of Environment, Jakarta, Indonesia (endorsement letter dated 1 June 1998)

Dr. R.T.M. Sutamihardja, Special Assistant Minister for Global Environment, Indonesia (endorsement letter dated 3 April 1998).

Ms. Hiswani Harun, Ministry of Science, Technology and the Environment, Kuala Lumpur, Malaysia (endorsement letter dated 6 May 1998).

Dr. Khoo Seow Poh, Head, International Environment and Policy Department, Ministry of Environment, Singapore (endorsement letter dated 18 June 1998).

Dr. Saksit Tridech, Secretary - General, Office of Environmental Policy and Planning (OEPP), Bangkok, Thailand (endorsement letter dated 8 June 1998)

Mr. Rafael Camat, Jr., Director, Foreign Assisted and Special Projects Office, Department of Environment and Natural Resources, Manila, Philippines (endorsement letter is forthcoming).

Country requests: The Meeting of the ASEAN Environment Ministers held on 25 February 1998 in Kuching, Malaysia, requested the international community to assist in providing immediate international assistance, especially in enhancing the fire-fighting capacity.

### Project Objectives and Activities

#### 9. Project rationale and objectives

Millions of dollars are being spent to protect certain areas of the SEA countries of great biodiversity significance. This effort will be seriously put at risk if the areas of GEF interventions are going to be potentially destroyed or affected by forest fires.

In addition, a number of GEF projects aimed at reducing GHG emissions are under active implementation in the region. The objective of these GEF interventions could be jeopardised by the emission of enormous amount of GHG (e.g., CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O and photochemical formation of tropospheric ozone) due to large scale burning of the forest, which is an important carbon sink. Tropical forests store a large amount of CO<sub>2</sub>, and therefore, play a key role in regulating the world's climate.

The objective of this project is to catalyze and coordinate international efforts aimed at addressing the emergency situation arising from the Indonesian forest fires, and to assist the SEA countries in co-ordinating their regional efforts to mitigate the short and long term impacts of forest fires.

#### Indicators:

Forest fires in various hot spots extinguished.

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|--|---|
| <p>More specifically, the project aims at enhancing the fire-fighting capacities of Indonesia by providing the state-of-the-art techniques available and the technical assistance required. In addition, it will aim to establish an early warning system, and recommend appropriate preventative measures, so that the biodiversity (flora and fauna) rich areas can be protected from future fires and the emission of GHG caused by forest fires can be avoided. Thus, this regional effort will enhance the capacity of the SEA countries to prevent and combat forest fires. Without the financial support from the GEF and donor countries, it is unlikely that this regional effort will be realised.</p> <p><u>It will be ensured that there will be no duplicative effort between this project and those on-going projects undertaken or to be undertaken by other regional and international agencies and the donor countries.</u></p> |   |
| <p><b>10. Project outcomes:</b></p> <p>As a result of this project, a strategy for fighting and preventing forest fires, including an early warning system, will be developed, while appropriate concrete measures to avoid forest fires will be identified, designed, established and adopted.</p> <p>Moreover, capacity building for implementing this strategy will be undertaken and achieved</p>  | <p><b>Indicators:</b></p> <p>Concrete measures for preventing and combating forest fires established</p>  |
| <p><b>11. Planned activities to achieve outcomes (including cost in US\$ or local currency of each activity):</b></p> <p>(a) Co-ordination of all existing efforts to ensure the best use of available resources for fighting and preventing the current forest fires in Indonesia (GEF: US\$30,000; UNEP in-kind: US\$20,000);</p> <p>(b) Experts group and donors meetings to be <u>convened jointly with OCHA (Office for Co-ordination of Humanitarian Affairs)</u>, with participation of senior <u>ASEAN</u> government</p>  | <p><b>Indicators:</b></p> <p>Effective consultation mechanism between all concerned parties (e.g., government officials, UN and other international agencies, donor governments and agencies, NGOs, etc.) involved in assisting Indonesia and its neighbours to cope with this environmental disaster</p> <p><u>Experts group and donors meetings held.</u><br/>State-of-the-art forest fire-fighting technology and techniques, as well as the short to long-term fire-prevention measures identified.</p> |

officials, international agencies and donors. will be convened back to back in April 1998 in Geneva. The experts group meeting is to identify the state-of-the-art forest fires fighting technology and techniques, as well as the short to long-term fire-prevention measures;

Recommendations of experts will be submitted to the donors meeting to solicit further funding (GEF: US\$100,000; UNEP in-kind: US\$20,000).

(c) Establishment of fires early warning system, including local fire risk assessment, an aerial surveillance regime for Sumatra under the Sub-Regional Fire-Fighting Arrangement (RFA) and improvement of communication systems (GEF: US\$220,000; UNEP in-kind:US\$20,000)

(d) Training and capacity building for the implementation of Activity (c) (GEF: US\$250,000).

(e) Public awareness and dissemination of the lessons learned so that other GEF recipient countries confronted with similar environmental threats, such as the recent outbreak of forest fires in the Amazon, can be benefited (GEF: US\$50,000):

(f) Evaluation missions (GEF: US\$50,000; UNEP in-kind:US\$20,000)

(g) Miscellaneous/project support services (GEF: US\$50,000; UNEP in-kind:US\$20,000)

Further funds required for forest fires fighting and prevention raised.

Fires early warning system in place. Local fires risk assessment undertaken. Collaboration with the WMO/NOAA/ASEAN PARTS project, and with the WMO Regional Specialized Meteorological Centre on Environmental Emergency Response based in Melbourne, Australia.

Relevant government officers and fires fighters trained with relevant institutions for forest fires fighting and prevention strengthened.

Seminars, experience sharing workshops and media coverage.

**12. Estimated budget (in US\$ or local currency):**

PDF: None  
 GEF: US\$ 750,000  
 Co-financing: UNEP: US\$100,000 (in-kind)  
 Total: US\$ 850,000

It is noted that USA and the Asian Development Bank (ADB) are also contributing US\$ 4 million (another US\$2 million has also been earmarked) and US\$ 2 million, respectively, to assist Indonesia and its affected neighbouring countries in coping with the environmental disaster.

**13. Information on project proposer:**  
 UNEP

|     |   |
|-----|---|
| 14. | <b>Information on proposed executing agency (if different from above):</b><br>UNEP  |
| 15. | <b>Date of initial submission of project concept:</b> 25 February 1998  |
| 16. | <b>Project Identification number:</b> To be given   |
| 17. | <b>Implementing Agency contact person:</b> Ahmed Djoghlaif, Executive Co-ordinator, GEF Co-ordination Office (Tel: 254 2 624166; Fax: 254 2 520825; E-mail: <a href="mailto:ahmed.djoghlaif@unep.org">ahmed.djoghlaif@unep.org</a> )  |
| 18. | <b>Project linkage to Implementing Agency program(s):</b><br><br>Based on UNEP's role and mandate and its comparative advantage, the Secretary General of the United Nations requested on 6 March 1998, the Executive Director of UNEP to co-ordinate the United Nations System's response to the serious situation arising from the recent outbreak of forest fires in East Kalimantan, Indonesia. The Secretary General requested UNEP to monitor and co-ordinate the global assistance and expertise provided by the international community through the United Nations System. The implementation of this project will build upon UNEP's environmental assessment expertise and experiences. This project will link to the existing activities and programmes of UNEP's Division of Environmental Information and Assessment (DEIA) and it will fully make use of the GRID network and information. In particular, UNEP's Regional Office for Asia and the Pacific (ROAP) based in Bangkok, supported by the UNEP Environmental Information and Assessment Programme for the region, has played an active role in providing information and supporting an emergency mission to Indonesia in October 1997 after the outbreak of the forest fires. In addition, the web site of GRID-SF ( <a href="http://grid2.cr.usgs.gov">http://grid2.cr.usgs.gov</a> ) has also provided the first note to media from UNEP on the environmental disaster. The joint UNEP/OCHA (Office for Co-ordination of Humanitarian Affairs)/Environmental Emergency Unit has also played an important role in mobilising resources for the emergency situation. |

### Project Description

As mentioned in Section 6, this project is submitted under the GEF short-term response measures for both biodiversity (Operational Programme 3: Forest Ecosystems) and climate change (Carbon Sequestration). It aims to co-ordinate on-going international efforts addressing the emergency situation arising from the recent outbreak of forest fires in Indonesia and its impacts on the region. It will assist Indonesia and its neighbouring countries in co-ordinating their regional efforts to mitigate the short-term impacts of the forest fires. More specifically, the project aims at providing the technical assistance required to extinguish the forest fires, with a view to enhancing the national and regional fire-fighting capacities by co-ordinating all efforts to provide the available state-of-the-art technologies and techniques. It will aim also to develop a national and regional strategy and adopt appropriate concrete measures to combat forest fires, including the establishment of an early warning system building on the existing capacities. National, regional and global public awareness will be raised on the profound destructive impacts of forest fires, so that national, regional and global effort can be

mobilised to combat and to prevent forest fires. The lessons learned will be widely disseminated to benefit other GEF recipient countries confronted with similar environmental threats, such as the recent outbreak of forest fires in the Amazon.

### **Project rationale and objectives**

Indonesia is recognised as one of the twelve "mega-biodiversity" countries of the world. The Indonesian Biodiversity Country Study prepared in 1992, with the assistance of UNEP and with funds provided by Norway, has identified at least 47 distinct natural ecosystems. Available data show that forest ecosystems represent a total of 1,179,854 km<sup>2</sup>. In addition to ecosystem diversity, Indonesia is also a highly species-rich country. Although Indonesia occupies only 1.3% of the world's land area, it possesses up to 17% of the total number of species in the world as evidenced by the following examples of this richness: 11% of the world's known flowering plants, 12% of the world's mammals, 15% of all amphibians and reptiles, 17% of all birds and at least 37% of the world's fish. Many of the Indonesian islands have been isolated for long periods from one another, and have evolved local species that are unique to them or endemic. Therefore, the impacts of forest fires on the Indonesian biodiversity are profound and they reach beyond national boundaries.

The November 1997 report of the United Nations Disaster Assessment and Co-ordination Team, of which UNEP is a member, concluded that the 1997 forest fires in Indonesia "*have turned out to be an environmental emergency of exceptional proportions*" and warned of "*a repetition of the present emergency if current practices remained unchanged.*" The recent outbreak of forest fires in Indonesia since early 1998, compounded by the worst drought of the last fifty years associated with El-Nino, as well as the financial crisis facing Indonesia and the other ASEAN countries have raised fears that, if not stopped, the environmental, economic and health impacts of the new forest fires might be worse than that in 1997. In view of the seriousness of the situation, a meeting of the Environment Ministers of ASEAN countries was held on 25 February 1998 in Kuching, Malaysia. The Ministers expressed serious concerns that the current situation may well repeat the 1997 environmental disaster. They "*welcomed any immediate international assistance, especially in enhancing the fire-fighting capacity.*"

The Secretary General of the United Nations requested on 6 March 1998, the Executive Director of UNEP to co-ordinate the United Nations System's response to the serious situation arising from the recent outbreak of forest fires in Indonesia. The Secretary General requested the Executive Director of UNEP to monitor and co-ordinate the global assistance and expertise provided by the international community through the United Nations System.

The GEF Operational Strategy, identified that the "*degree of threat, vulnerability or urgency*" are among the operational criteria guiding consideration of project proposals submitted for GEF funding under short-term response measures in biodiversity focal area. The Operational Strategy provides that "*some intervention may be considered extremely urgent on the basis of known imminent threats to a species or ecosystem.*"

The proposed activities fall under the criteria agreed upon by the GEF Council for short-term response measures in the biodiversity and the climate change focal areas. By preventing a large area of rain forest from being destroyed by fires, hence preserving its biodiversity and its valuable carbon sink.

### **Eligibility of the project under Climate Change short-term measures**

#### *Cost-effectiveness*

Cost-effectiveness is one of the major criteria for short-term response measures in the climate change focal area. The reference Unit Abatement Cost (UAC) is US\$10 per tC.

It is estimated that the productivity of the tropical forest is 2.5 to 5.0 tC/ha/yr (above ground) with soil carbon taken into account. Assuming that the forest took 60 years to climax, then the amount of carbon stored would range from 150 tC/ha to 300 tC/ha. Thus, for one million hectares of forest, the amount of carbon stored would be 150 to 300 million tonnes. As mentioned in Section 7, it has been reported that more than one million hectares of forest in Indonesia have been affected by the fires last year. Thus, it is convenient to use this figure as a baseline for the following calculation.

Assuming US\$15 million (USA, ADB, GEF and other sources of financing) will be spent on preventing one million hectares of forest from being destroyed by fires, then the incremental Unit Abatement Cost (UAC) would be US\$0.1 - 0.2 per tC, which is well below the reference UAC of US\$10 per tC.

Even if we assume that only 250,000 hectares of the forest will be prevented from being destroyed by fires (this is a very conservative figure; indeed, UNDAC estimated in mid-April 1998 that over 250,000 hectares of forest in East Kalimantan have been razed by fires this year), then the incremental UAC would range from US\$0.4 to US\$0.8 per tC, which is still well below the reference UAC of US\$10 per tC.

However, it should be noted that large scale burning of biomass (forest) is not only an important source of CO<sub>2</sub> emissions, but also of CH<sub>4</sub> and N<sub>2</sub>O emissions. In addition, tropospheric ozone, a greenhouse gas estimated to be of comparable significance as methane, is also formed photochemically during the fires. The total amount of these other GHG emitted from the fires are yet to be included in the above calculation.

Thus, it is clear that the GEF support for this project under the climate change short-term measure is most cost-effective even when other sources of associated financing are also included.

#### *Likelihood of success*

This project is focusing on the coordination of all existing regional and international efforts, so as to ensure the best use of available resources for strengthening the fire-fighting and fire-prevention capacity of the South East Asian countries, with particular focus in Indonesia. As of April 1998, three ASEAN Environment Ministers Meetings on Haze have been held. This shows the great concern of the countries in the region about the recurrence of last year's event. In response to this emergency situation, UNEP is playing a catalytic role in coordinating all regional and international assistance. Through this project, further resources from the donor countries will be solicited and mobilized. Thus, there is a high likelihood of success.

#### *Country-driven*

This project is in response to the request made by the ASEAN Environment Ministers in their Second Ministerial Meeting on Haze held on 25 February 1998 in Kuching, Malaysia, which "welcomed any immediate international assistance, especially in enhancing the fire-fighting capacity." Thus, it is entirely country-driven. The countries are, in turn, driven by their great concern that similar prolonged haze might choke the region once again like the one of last year.

#### **Rationale for GEF intervention**

Millions of US dollars are being spent to protect certain areas of the SEA countries of great biological diversity significance and to reduce GHG emissions in the region. These efforts would be seriously undermined if forest fires continue to occur in the region. As the financial mechanism of global environment issues, the GEF has an important role to play to mitigate the effects of what the Executive Director of UNEP has qualified as "one of the greatest ecological disasters of the decade".

## **Current situation**

The forest fires fighting capacity in the SEA countries is very limited. This explained why even with the joint regional fires fighting effort, the countries were not able to contain the forest fires in 1997. With the new forest fires burning this year in East Kalimantan, the SEA countries will, once again, be constrained by their limited capacity to combat the fires especially in view of their current economic crisis. The United States of America has allocated US\$ 4 million for its "South East Asian Environment Initiative", in which (a) Technical modelling and monitoring (including global climate impact forecasting; smoke and haze modelling and monitoring; and health assessment); (b) Better forestry management; and (c) Fire-fighting, will be the focus of the assistance. Another US\$2 million has also been earmarked to assist Indonesia to combat the immediate fires. It has also been reported that Canada, France and Germany have also offered assistance. In addition, the ADB has recently approved a US\$ 1 million grant to ASEAN to put in place the Regional Haze Action Plan and the fire-prevention mechanism. Another US\$ 1 million is also committed by ADB for the Indonesian Government to estimate the economic damage caused by the 1997 forest fires so as to provide a basis for policy change, and identify investments needed to prevent the recurrence of the forest fires.

However, according to the Minister of the Environment of Indonesia, more funds are needed and the amount required will be determined by the weather conditions. He indicated that airborne operation would cost US\$ 3,000 per hectare. The airborne operations capacity of Indonesia is limited and it has been compounded by the prevailing financial crisis evidenced by the devaluation of the rupiah, the high inflation rate and the dwindling reserves of foreign exchange to about half their level of July 1997.

## **Expected project outcomes, with underlying assumptions and context**

The project will assist in co-ordinating international efforts to address the emergency situation arising from the new outbreak of forest fires in Indonesia and their impacts on the region. It will contribute to enhancing the capacity of the SEA countries to prevent or contain the outbreak of forest fires in the future. It will also identify and recommend preventative measures and promote public awareness activities. The report of the Experts Meeting on best practices and techniques in fire-fighting will be distributed to the SEA countries. In addition, the recommendations of the experts meeting will be submitted to the donors meeting to be held back to back with the experts meeting so that further financial resources can be mobilized to assist Indonesia and other SEA countries. The meeting of the Ministers of the Environment of the ASEAN countries held on 25 February 1998 in Kuching, Malaysia, demonstrated a strong political will to co-ordinate their efforts to combat and prevent forest fires in the region.

## **Activities and financial inputs needed to enable changes**

The activities to be financed by this project are:

- (a) Co-ordination of all existing efforts in the region with a view to organising concerted efforts to combat the fires and addressing priority needs;
- (b) Convening of an experts group meeting, with participation from senior government officials of the region, to identify the state-of-the-art forest fire-fighting technology and techniques, as well as the short to long-term fire-prevention measures;
- (c) Convening of a donors meeting, with participation from the donors and international agencies. This meeting will be held back to back with the experts group meeting. The recommendations of the experts group meeting will be submitted to the donors meeting.

- (d) Establishment of an effective early forest fires early warning system based on the existing capacity, including local fire risk assessment, an aerial surveillance regime for Sumatra, under the Sub-Regional Fire-Fighting Arrangement (RFA) and improvement of communication systems:
- (e) Training and capacity building for the implementation of the regionally co-ordinated forest fires fighting efforts, including the operation of the forest fire early warning system;
- (f) Raising of national, regional and global public awareness on the danger of forest fires and their long-term impacts on the environment and the socio-economic development of the affected countries.
- (g) Dissemination of lessons learned to other countries facing the similar environmental disaster.

### **Sustainability analysis and risk assessment**

By strengthening the required indigenous capacity on forest fire fighting, including the establishment of an effective early warning system, enhancing the co-ordination of the international and regional efforts on preventing and combating forest fires, and raising national, regional and global public awareness on the profound impacts of forest fires, it is expected that the recurrence of future forest fires in Indonesia and other SEA countries can be prevented, despite the current climatic conditions associated with El-Nino. The Kuching meeting has demonstrated the strong political will of the governments of the region to address the underlying causes related to forest fires. This strong political will has ensured that the governments in the region will not be carrying on "business-as-usual". With the international financial and technical assistance, they will do their utmost to prevent the recurrence of the environmental disaster.

However, the international assistance can not be relied upon forever. The active involvement of all stakeholders (i.e., both public and private sector, NGOs, etc) in the short-term, medium-term and long-term fire-fighting and fire-prevention measures is the key element to ensure the sustainability of the activities beyond the project.

The risk of failure for this project is greatly minimised by UNEP, which has the mandate from the UN Secretary General to co-ordinate this international effort, assuming a catalytic role in soliciting and mobilizing further resources from the donor countries, so as to further strengthen the capacity for fire-fighting and fire-prevention in the region.

### **Stakeholder involvement and social assessment**

The formulation of this project has been designed as a response to the request of the governments of the ASEAN countries. The implementation of this project by UNEP will be carried out in close collaboration with other international agencies and donor countries, as well as in close consultation with the governments of the region, the representatives of the civil society, including local communities and NGOs.

### **Incremental cost assessment**

The requested GEF funding of US\$ 750,000 is the estimated incremental cost for the proposed activities. Without this funding and other international support, it is unlikely that the governments of the SEA countries will be in a position to overcome the forest fire disaster, in view of their limited capacity and the recent financial crisis in the region.

## Budget

The budget for each proposed activity is summarised in Table 1.

**Table 1. Project budget.**

| Activity/Component  | GEF                 | UNEP (in-kind)     | Project total       |
|---|---------------------|--------------------|---------------------|
| Activity (a): co-ordination of all existing efforts   | US\$ 30,000         | US\$ 20,000        | US\$50,000          |
| Activity (b): Expert groups/senior government officials meeting to identify fires fighting technology and techniques, and the short to long-term fire prevention measures | US\$ 100,000        | US\$ 20,000        | US\$120,000         |
| Activity (c): Establishment of early warning system, including local fire risk assessment, aerial surveillance regime and improvement of communication systems            | US\$ 50,000         | US\$ 20,000        | US\$70,000          |
| Activity (d): Training and capacity building for (c)  | US\$ 250,000        |                    | US\$250,000         |
| Activity (e): public awareness  | US\$ 50,000         |                    | US\$50,000          |
| Equipment for (c)   | US\$ 170,000        |                    | US\$170,000         |
| Travel  | US\$ 40,000         | US\$ 20,000        | US\$60,000          |
| Evaluation missions:  | US\$ 50,000         | US\$ 20,000        | US\$70,000          |
| Miscellaneous   | US\$ 10,000         |                    | US\$10,000          |
| <b>Project total</b>  | <b>US\$ 750,000</b> | <b>US\$100,000</b> | <b>US\$ 850,000</b> |

## Project implementation plan

The project implementation schedule is briefly indicated in Table 2. Detailed plan will be developed in consultation with the governments after the approval of the project.

**Table 2. Project implementation schedule**

| Duration of project: 12 months  |   |
|---|---|
| ACTIVITIES  | PROJECT-MONTHS  |
| Completion of project activities  |   |
| (a) Co-ordination of all existing efforts   | 12 months - starting from April 1998, soon after the proposal was recommended for approval by the GEF |
| (b) Expert groups/senior government officials meeting and donors meeting  | April 1998  |
| (c) Establishment of early warning system, <u>including local fire risk assessment, aerial surveillance regime for Sumatra and improvement of communication systems</u> | 12 months   |
| (d) Training and capacity building  | 12 months   |
| (e) Public awareness  | 12 months   |

## Public Involvement Plan

Throughout the project, public involvement will be ensured by consulting the representatives of civil society. In particular, NGOs representatives will be involved during the planning and implementation of relevant activities. Available information will be widely disseminated to all stakeholders.

## Monitoring and evaluation plan

The UNEP/OCHA (Office for Co-ordination of Humanitarian Affairs)/EEU (Environmental Emergency Unit) has been designated by the Executive Director of UNEP to co-ordinate the implementation of this project. It will provide a monthly progress report, which will be shared with the governments and other stakeholders. The monthly reports will also be distributed to a wider audience by electronic and other means. The monitoring and evaluation of this project will be carried out in accordance with the GEF agreed procedures.

In addition, a Project Steering Committee (PSC), chaired by the Assistant Executive Director (Programme) and including the chiefs of the Division of Environmental Information and Assessment, GEF Co-ordination Office, Biodiversity Unit, Atmosphere Unit and Dryland Ecosystems and Desertification Control Programme Activity Centre will be established to oversee the implementation

of the project. This Committee will meet on a regular basis and as often as required by the emergency situation to review the project implementation and to provide scientific, technical, policy and strategic guidance to the Project Co-ordination Office.

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ANNEX 1

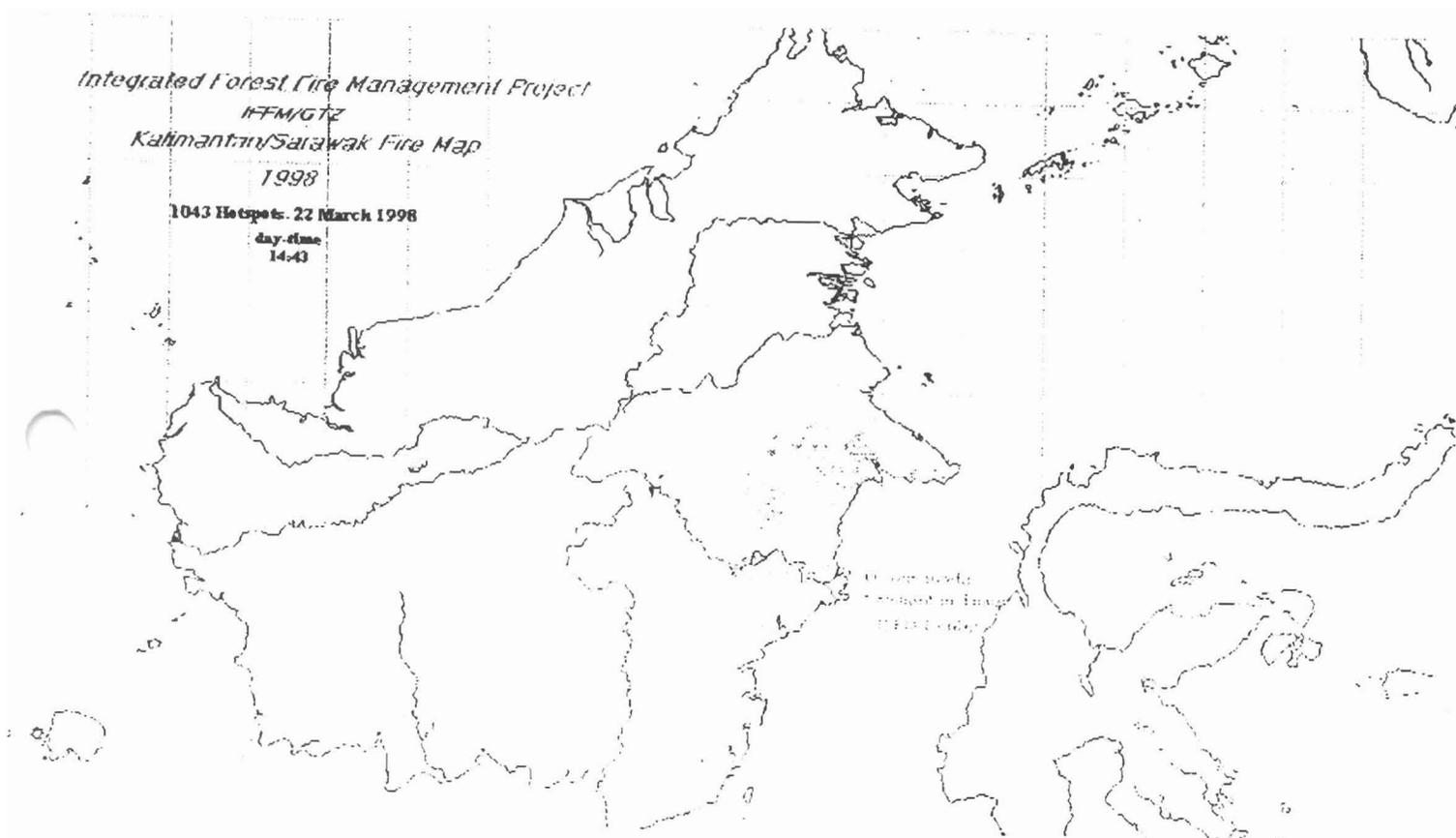


Figure 1. The number of hotspots in East Kalimantan on 22 March: 1043.



KANTOR MENTERI NEGARA  
LINGKUNGAN HIDUP

Mr. Ahmed Djoglaf  
Executive Coordinator  
UNEP/GEF Coordination Office  
Fax: (254 2) 226836, 226890

**U N E P**  
GEF COORD. OFFICE  
**RECEIVED**

ACTION NO       REQUIRED YES

- 5 JUN 1998

WHAT: ..... Jakarta, 4 June 1998  
WHO: *BSL* .....  
WHEN COMPLETED: .....  
CIRCULATE NO  YES

Office IN *[Signature]*

98/1622

Dear Mr. Djoglaf,

**Emergency Response to Combat Forest Fires in Indonesia to Prevent Haze  
in South East Asia**

To protect biodiversity resources and the emission of Green Houses Gases from future forest fires, we need to enhance the fire fighting capacities in Indonesia.

Therefore we support and endorsed the UNEP's proposal entitled "Emergency Response to Combat Forest Fires in Indonesia to Prevent Haze in South East Asia".

Through this project we expect to design and implement a strategic plan of action to prevent the future outbreak of forest fires.

Best regards,

Yours sincerely,

*[Signature]*

**Effendy A. Sumardja**  
Assistant Minister for Coordination  
State Ministry of the Environment

*MR. AHMED DJOGLAF*

0 4 JUN 1998

A  
B  
C

1/F191



EMBASSY OF THE  
REPUBLIC OF INDONESIA  
NEW DELHI

New Delhi, April 3, 1998

Dr. Ahmed Djoghlaif,  
Executive Coordinator  
GEF Coordinator Office  
Nairobi, KENYA

In my capacity as the Representative of Indonesia for the First GEF Assembly, New Delhi, April 1-3, 1998 and GEF Council Meeting, March 30-31, 1998, principally I endorse the project on "Emerging Response to Combat Forest Fires in South East Asia (SEA)".

Regards,

A handwritten signature in black ink, appearing to read 'RHM Sutamihardja', written over a horizontal line.

Dr. RHM Sutamihardja  
Special Assistant Minister  
For Global Environment



MINISTRY OF SCIENCE, TECHNOLOGY AND THE ENVIRONMENT, MALAYSIA. 14th FLOOR, WISMA SIME DARBY, JALAN RAJA LAUT, 50662 KUALA LUMPUR, MALAYSIA

98/1602

Telefon: 2938955 Telex: MOSTEC MA 28154 Telefax: 603-2936006

Ahmad Djoghlaif Executive Coordinator UNEP/GEF Coordination Office P.O. Box 30552 Nairobi, Kenya Fax: (254 2)624041



Our Ref: KSTAS.120.080 Your Ref: P001/013(4b) Date: 6 May 1998

Mr Djoghlaif,

Medium-Size Project Proposal on "Emergency Response to Combat Forest Fires in South East Asia (SEA)"

I would like to refer to the above project proposal and your letter dated 28 April 1998 on the same.

2. The Malaysian government fully endorses the project proposal on "Emergency Response to Combat Forest Fires in South East Aia (SEA)". In light of the urgency and severity of the fires, it is hoped that immediate assistance could be instituted to the region, particularly in enhancing the fire-fighting capacity of the countries affected before further damage and environmental degradation is done.

Thank you.

Yours sincerely,

Handwritten signature of Hiswani Harun

( HISWANI HARUN ) GEF National Operational Focal Point for Malaysia for Secretary General Ministry of Science, Technology and the Environment

c.c.

Dr. Suvit Yodmani Director, ROAP/UNEP Fax: 662 2803829

UNEP GEF COORD. OFFICE RECEIVED ACTION NO [ ] REQUIRED YES [ ] - 3 JUN 1998 WHAT... WHO... WHEN COMPLETED... CIRCULATE NO [ ] YES [ ] FILE IN [ ]

**FAX 1**

98/1742

**MINISTRY OF THE ENVIRONMENT**  
INTERNATIONAL ENVIRONMENT & POLICY DEPARTMENT



IEPD C 16.1/3/2

18 June 98

Mr Ahmad Djoghlaf  
Executive Director  
UNEP/GEF Coordination Office  
Nairobi, Kenya  
(Fax : 001-254-2 624166)

Dear Mr Djoghlaf

|                                       |                                       |
|---------------------------------------|---------------------------------------|
| <b>U N E P</b>                        |                                       |
| GEF COORD. OFFICE                     |                                       |
| <b>RECEIVED</b>                       |                                       |
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| 22 JUN 1998                           |                                       |
| WHAT.....                             | ps                                    |
| WHO.....                              |                                       |
| WHEN COMPLETED.....                   |                                       |
| CIRCULATE NO <input type="checkbox"/> | YES <input type="checkbox"/>          |
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**UNEP/GEF PROJECT ON 'EMERGENCY RESPONSE TO COMBAT FIRES IN SOUTH EAST ASIA'**

I refer to your letter dated 23 April 98 and to Dr Toepfer's letter dated 26 May 98 on the above project proposal.

- 2 Singapore is happy to endorse the above project.
- 3 We look forward to the early implementation of this project. Thank you.

Yours sincerely

  
**KHOO SEOW POH**  
HEAD

INTERNATIONAL ENVIRONMENT AND POLICY DEPARTMENT  
MINISTRY OF THE ENVIRONMENT

cc Mr Valdimir Sakbarov  
Head  
Joint UNEP/OCHA Environment Unit  
Disaster Response Branch  
Fax no 001 - 4122 - 9170023

98/1779

|                                     |  |
|-------------------------------------|--|
| <b>U N E P</b>                      |  |
| GEF COORD. OFFICE                   |  |
| <b>RECEIVED</b>                     |  |
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| WHO..... PSL                        |  |
| WHEN COMPLETED...                   |  |
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Office of Environmental Policy  
and Planning

60/1 Soi Phibun Wattana 7  
Rama VI Road, Bangkok 10400  
Thailand  
Tel: (662) 2714322, 2723054  
Fax: (662) 2714322, 2713226

8 June B.E. 2541 (1998)

Dear Mr. Djoghlaif,

Thank you very much for sending the UNEP project proposal on "Emergency Response to Combat Forest Fires in South East Asia" for GEF funding. I am fully aware of the recent initiatives taken by UNEP to assist the South East Asian countries in fighting and preventing forest fires.

As Thailand is a Party to the UN Framework Convention on Climate Change, this proposal would enable Thailand to participate in the regional activities related to the climate change issues (e.g., smoke and haze) caused by the Indonesian forest fires which also affect Thailand, as described in the proposal.

After reviewing the project proposal, we, as the GEF Operational Focal Point for Thailand, would like to express our full support to the project proposal. In view of the most urgent situation, we would appreciate if it could be approved by the GEF promptly.

With kind regards.

Yours sincerely,

(Dr. Saksit Tridech)  
Secretary-General

Mr. Ahmed Djoghlaif  
Executive Coordinator  
GEF Coordination Office  
UNEP, Nairobi, Kenya  
Fax : 2542 62 4041

cc. Dr. Suvit Yodmani, Director, ROAP/UNEP