

EUROPEAN COMMISSION INCO-DEV

FIRST SIX MONTHLY REPORT: 1.12.01 TO 31.5.02

**Strategies for implementing sustainable management
of peatlands in Borneo**

CONTRACT NO: ICA4-CT-2001-10098



Report collated and prepared by Dr. Henk Wösten, Project Co-ordinator

EUROPEAN COMMISSION INCO-DEV

CONTRACT NO: ICA4-CT-2001-10098: STRATEGIES FOR IMPLEMENTING SUSTAINABLE MANAGEMENT OF PEATLANDS IN BORNEO

SIX MONTHLY REPORT: 1.12.01 TO 31.5.02

Overview

During the first six months of the project an adequate and efficient project management system (WP 1000) has been established. A management team has been set up and responsibilities have been allocated. Financial means provided by the EU have been transferred to the different partners. Good communication/dissemination links with the partners by email, fax and/or telephone have been established.

Each partners prepared a report on the state of knowledge on its specific field of expertise (WP 2000). These reports were presented and discussed during the workshops in Palangka Raya, Central Kalimantan, Indonesia, 30-31 March 2002 and Sibuloh, Sarawak, Malaysia, 4-5 April 2002. The different reports have been combined in a single report which gives a good overview of the state of knowledge of the different aspects of sustainable management of peatlands in Borneo. During the workshops also different knowledge gaps have been identified and a priority rating is given for these gaps.

Based on the state of knowledge report and the identified knowledge gaps, a start is made with additional data and information acquisition (WP 3000).

By attending and planning other workshops information on STRAPEAT is disseminated (WP 6000). This is also achieved by publishing different articles and by preparing a full color leaflet on STRAPEAT and by creating the STRAPEAT website. In addition Indonesian staff members have been identified to commence training in the United Kingdom.

Specific progress of each partner is reported in their six monthly reports.

CO-ORDINATORS	
ALTERRA Droevendaalsesteeg 3 P.O. Box 47 6700 AA Wageningen The Netherlands	DR. HENK WÖSTEN Tel.: +31 317 474287 Fax: +31 317 419000 Email: j.h.m.wosten@alterra.wag-ur.nl
UNIVERSITY OF NOTTINGHAM School of Geography University Park Nottingham NG7 2RD United Kingdom	DR. JACK RIELEY Tel.: +44 115 9515449 Fax: +44 115 9514249 Email: Jack.Rieley@nottingham.ac.uk Email: jack.rieley@lineone.net
CONTRACTORS	
UNIVERSITY OF LEICESTER Department of Biology University Road Leicester LE1 7RH United Kingdom	DR. SUSAN PAGE Tel.: +44 116 2525493 Fax: +44 116 2525408 Email: sep5@leicester.ac.uk
REMOTE SENSING SOLUTIONS GMBH Wörthstr. 49 81667 München Germany	DR. FLORIAN SIEGERT Tel.: +49 89 48954765 Fax: +49 89 48954767 Email: siegert@rssgmbh.de
UNIVERSITY OF HELSINKI Department of Forest Ecology P.O. Box 27 (Latokartanonkaari 7) F-00014 Helsinki Finland	DR. HARRI VASANDER Tel.: +358 9 191 58140 Fax: +358 9 191 58100 Email: vasander@LadyBird.Helsinki.fi
UNIVERSITY OF PALANGKA RAYA Centre for International Co-operation in Sustainable Management of Tropical Peat Jalan Yos Sudarso Palangka Raya 73112 Indonesia	IR. SUWIDO H. LIMIN MS Tel.: +62 536 36880 Fax: +62 536 21002 Email: suwido@palangkaraya.wasantara.net.id
GADJAH MADA UNIVERSITY Department of Soil Science / Fact. Of Agriculture Sekip Utara 55281 Yogyakarta Indonesia	DR. BOSTANG RADJAGUKGUK Tel.: +62 274 901091 Fax: +62 274 563062 Email: bostang@idola.net.id
UNIVERSITY OF SRIWIJAYA Environmental Study Centre Kampus Indralaya Palembang Indonesia	DR. FACHRURROZIE SJARKOWI Tel.: +62 711 440943 Fax: +62 711 580640 Email: dianri@palembang.wasantara.net.id
UNIVERSITI SAINS MALAYSIA Department of Environmental Science School of Biological Sciences 11800 Penang Malaysia	PROFESSOR MASHHOR MANSOR Tel.: +604 6577888 Fax: +604 6565125 Email: mashhor@usm.my

<p>UNIVERSITI MALAYSIA SARAWAK Centre for Technology Transfer & Consultancy 94300 Kota Samarahan Sarawak Malaysia</p>	<p>DR. MURTEDZA MOHAMED Tel.: +60 82 671000 Fax: +60 82 672303 Email: ted@cttc.unimas.my</p>
<p>STESEN MARDI SESSANG P.O. Box 59 95407 Saratok Sarawak Malaysia</p>	<p>MR. JAMALUDIN BIN JAYA Tel.: +083 437 422 Fax: +083 437 421 Email: jayajb@mardi.my ; jaybjaya@tm.net.my</p>
<p>AGENCY FOR THE ASSESSMENT AND APPLICATION OF TECHNOLOGY (BPPT) Jalan M.H. Thamrin 8 Jakarta 10340 Indonesia</p>	<p>DR. BAMBANG SETIADI Tel.: +62 21 3169705 Fax: +62 21 324255 Email: bsetiadi@bppt.go.id</p>

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CONTRACT NO: ICA4-CT-2001-10098: STRATEGIES FOR IMPLEMENTING SUSTAINABLE MANAGEMENT OF PEATLANDS IN BORNEO

SIX MONTHLY REPORT: 1.12.01 TO 31.5.02

PARTNER INSTITUTE AND CONTACT NAME:

Alterra Green World Research (Alterra) Dr Henk Wösten

- a) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

Arrangements are completed to establish all ALTERRA project management, financial and reporting systems. The Project Scientific/technical coordinator has been appointed and the research officers identified. Communications have been established with all other partners for the transfer of financial means and for the transfer of research findings. Information has been presented at one International Symposium on Tropical Peatland. Two workshops (one in Central Kalimantan and the other in Sarawak) were attended in March/April 2002. As a result of these workshops a status report has been compiled including the identification of knowledge gaps and priority rating of the knowledge gaps. A website has been established and a leaflet highlighting the different STRAPEAT activities has been prepared.

- b) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

Progress so far has been according to schedule and can be summarized as follows:

1100: Project management systems established

1200: Project financial systems established

1300: Project monitoring/reporting systems underway

1400: Communications/dissemination network established

1500: Partner participation protocol established

2100: State of knowledge report prepared on the hydrology of tropical peatlands. Gaps in knowledge of these identified including a priority rating.

2200: Compilation of the different status reports into one single volume

3100: Collation of existing information – discussions held with other partners on state of information in their possession.

4200: Attended two workshops in Palangka Raya, Indonesia and Sibul, Sarawak

4400: Preliminary ideas on the development of a management support system and discussions on this item with different partners.

6300: An international symposium on tropical peatland was held in Jakarta in August 2001 as part of the preparations for this STRAPEAT project.

6400: Further workshops and attendance at another international symposium are planned for September 2002.

- c) **Any other information you wish to comment upon during this period of six months?**

In cooperation with UNIMAS and MARDI contact is made with the State Planning Unit in Sarawak to secure their support for the STRAPEAT project. As such the project is in line with the government objective of sustainable management of peatlands in Sarawak.

d) If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.

Programme is on schedule

e) List of papers published in scientific/technical journals and proceedings.

Diemont, W.H., Joosten, H., Mantel, S., Murdiyarso, D., Van Noordwijk, M., Rieley, J.O., Veldsink, J.W., Verhagen, A., Wakker, E. and Wind, J. (2001) Perspectives and perceptions on sustainable use of (peat) forest in SE Asia. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta*. BPPT and Indonesian Peat Association, pp. 241-250.

Silvius, M., Diemont, W.H. and Rieley, J.O. (2001) Global peat initiative. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta*. BPPT and Indonesian Peat Association, pp. 251-255.

Wösten, J.H.M. and Ritzema, H.P. (2002) Challenges in land and water management for peatland development in Sarawak. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2001, Jakarta*. BPPT and Indonesian Peat Association, pp. 51-55.

Wösten, J.H.M. and Ritzema, H.P. (2002) Land and water management options for peatland development in Sarawak, Malaysia. Accepted for publication in the *International Peat Journal*.

f) List of conference/seminar/workshop presentations.

Seminar/Workshop presentations:

STRAPEAT workshop, Palangka Raya, Central Kalimantan, Indonesia, 30-31 March 2002

STRAPEAT workshop Sibu, Sarawak, 4-5 April 2002

Hydrology of Borneo's peat swamps.

g) Other outputs.

Preparation of a full color STRAPEAT leaflet which proves to be very useful in informing different parties interested in the STRAPEAT activities.

Creation of a STRAPEAT website (<http://www.alterra.dlo.nl/websites/strapeat/default.htm>) with the latest news on STRAPEAT. The website proves to be also an excellent communication medium among the STRAPEAT partners.

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SIX MONTHLY REPORT: 1.12.01 TO 31.5.02

PARTNER INSTITUTE AND CONTACT NAME:
UNIVERSITY OF NOTTINGHAM, UK (UNINOT)

- c) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

Preliminary work has been carried out to establish all UNINOT project management, financial and reporting systems. The Project Scientific/technical manager has been appointed and the research officer identified. Communications have been established with all other partners and initial discussions held concerning the status of information held by them and the means and timescale of transferring these to UNINOT. Information has been presented at one International Symposium on Tropical Peatland and these have been published in the proceedings. Two workshops (one in Central Kalimantan and the other in Sarawak) were attended in March/April 2002.

- d) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

Progress so far has been according to schedule and the following tasks are underway:

1100: Project management systems established

1200: Project financial systems established

1300: Project monitoring/reporting systems underway

1400: Communications/dissemination network established and being expanded

2100: State of knowledge report prepared on tropical peatland ecology, natural resource functions and restoration. Gaps in knowledge of these identified.

2300: Computer based literature database has been established and partners invited to supply references to be included

3100: Collation of existing information – discussions held with other partners on state of information in their possession and means of transfer to UNINOT. Style of database still under consideration

4200: Attended two workshops in Palangka Raya, Indonesia and Sibul, Sarawak

4300: Held initial meeting with the Vice-Governor of Central Kalimantan in November 2001 to commence dialogue on sustainable development of tropical peatland in Borneo

6100: Two members of staff of UNPAR have been identified to commence training programmes allied to the STRAPEAT Project at UNINOT. One is a 2-year masters training programme and the other is leading to a Ph.D. over three years.

6300: An international symposium on tropical peatland was held in Jakarta in August 2001 as part of the preparations for this STRAPEAT project.

6400: Further workshops and attendance at another international symposium are planned for September 2002.

6500: Results and plans have been published in the Proceedings of the International Symposium on Tropical Peatland: Peatlands for People, Natural Resource Functions and Sustainable Management. Scientific papers have been submitted to several top-level journals.

- c) **Any other information you wish to comment upon during this period of six months?**

Much time has been spent coordinating the Indonesian partners and making representations to Indonesian Ministries and the British Ambassador in order to increase the knowledge of the importance of peatland in Borneo and the dangers of inappropriate development. We are starting to prepare the ground for strategy formulation by inviting stakeholders to participate in the process from the beginning.

f) If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.

Programme is on schedule

g) List of papers published in scientific/technical journals and proceedings.

- Sulistiyanto, Y., Rieley, J.O. and Limin, S. (2002) Litterfall of tropical swamp forest in Central Kalimantan, Indonesia. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta. BPPT and Indonesian Peat Association, pp. 29-34.*
- Stahlhut, M. and Rieley, J.O. (2002) Detection of hydrological parameters in tropical peat swamp forests by remote sensing. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta. BPPT and Indonesian Peat Association, pp. 56-62.*
- Jaya, A., Rieley, J.O., Artiningsih, T. Sulistiyanto, Y. and Jagau, Y. (2002) Utilization of deep tropical peatland for agriculture in Central Kalimantan, Indonesia. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta. BPPT and Indonesian Peat Association, pp. 125-131.*
- Siegert, F., Boehm, H-D.V., Rieley, J.O., Page, S.E., Jauhiainen, J., Vasander, H. and Jaya, A. (2002) Peat fires in Central Kalimantan, Indonesia: fire impacts and carbon release. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta. BPPT and Indonesian Peat Association, pp. 142-154.*
- Zain Muhamad, N. and Rieley, J.O. (2002) Management of tropical peatlands in Indonesia: mega reclamation project in Central Kalimantan. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta. BPPT and Indonesian Peat Association, pp. 155-167.*
- Rieley, J.O. and Page, S.E. (2002) Peatlands and climate change: tropical zone perspective. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta. BPPT and Indonesian Peat Association, pp. 197-206.*
- Rieley, J.O. (2002) The wise use of mires and peatlands. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta. BPPT and Indonesian Peat Association, pp. 236-240.*
- Diemont, W.H., Joosten, H., Mantel, S., Murdiyarso, D., Van Noordwijk, M., Rieley, J.O., Veldsink, J.W., Verhagen, A., Wakker, E. and Wind, J. (2002) The Global Peatlands Initiative. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta. BPPT and Indonesian Peat Association, pp. 251-256.*
- Rieley, J.O. (2002) Overview of tropical peatlands: location, extent, importance and impact. *Tropical Peatlands, 1: 1-7. ISSN 1412 0613.*
- Sulistiyanto, Y., Rieley, J.O., Page, S.E. and Jaya, A. (2002) Chemistry of rainfall and throughfall in a peat swamp forest in Central Kalimantan, Indonesia. *Tropical Peatlands, 1: 41-47. ISSN 1412 0613.*

Other papers submitted or in press:

2002: The geochemistry of major and selected trace elements in a forested peat bog, Kalimantan. *Geochimica et Cosmochimica Acta*, 66 (13), 2307-2323.

2002: (in press) Density, distribution and population size of the Bornean orang-utan in the Sebangau peat swamp forest, Central Kalimantan, Indonesia. *Biological Conservation*.

2002: (in rev.) Carbon released during peatland fires in Indonesia during 1997. *Nature*.

h) List of conference/seminar/workshop presentations.

Seminar/Workshop presentations:

STRAPEAT workshop, Palangka Raya, Central Kalimantan, Indonesia, 30-31 March 2002

STRAPEAT workshop Sibuluan, Sarawak, 4-5 April 2002

(a) Ecology and natural resource functions of tropical peatlands.

(b) Restoration of tropical peatlands

g) Other outputs.

November 2001, strategy meeting with the Vice-Governor of Central Kalimantan, Indonesia and the heads of Provincial Departments to explain the aims and objectives of the STRAPEAT Project and discuss new approaches to the sustainable development of peatland in Central Kalimantan Province. Other members of the STRAPEAT delegation included Professor Fachrurrozie Sjarkowi, UNSRI, DR. Bambang Setiadi BPPT, Professor Bostang Radjaguguk UGM and Dr. Herbert Diemont Alterra The Netherlands.

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PARTNER INSTITUTE AND CONTACT NAME:

Dr Susan Page : University of Leicester

e) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

- Information assessment and literature survey.
- Production of state of knowledge report on the biodiversity and ecological resource functions (in particular carbon sequestration/release) of tropical peatlands, with particular reference to issues of sustainable management (including peatland conservation, rehabilitation, and restoration) and biological indicators of ecosystem quality.
- Identification of gaps in knowledge and formulation of appropriate research programmes to address these gaps.
- Collaboration with other partners in the programme to ensure synergy of action.
- Procedures initiated to appoint a research assistant to acquire additional field data and assist with formulation of guideline documents and other relevant literature.
- On-going collaboration with peat swamp forest herbarium (CIMTROP, University of Palangka Raya) and Royal Botanic Gardens Kew (London, UK).
- Field data collection relating to forest regeneration following disturbance by logging and fire.
- Field data collection relating to use of peat swamp forests by orang-utan and the impact of disturbance on tree species composition (e.g. production of fruits) and forest structure.
- Phylogenetic studies of the genus *Gonystylus*, with particular reference to *G. bancanus*; elucidation of genetic (molecular) diversity and its relevance to the sustainable management of Bornean peat swamp forest.
- Participation in several project workshops.
- Production of research publications.

f) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

- Reasonable progress achieved.
- Work on target.

c) **Any other information you wish to comment upon during this period of six months?**

i) **If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.**

j) **List of papers published in scientific/technical journals and proceedings.**

2002: The geochemistry of major and selected trace elements in a forested peat bog, Kalimantan. *Geochimica et Cosmochimica Acta*, 66 (13), 2307-2323.

2002: (editor) Peatlands for people – natural resource functions and sustainable management. *Proceedings of the Int. Symp. on Tropical Peatlands, Jakarta 2001, BPPt & IPA* (and various papers therein).

2002: (in press) Density, distribution and population size of the Bornean orangutan in the Sebangau peat swamp forest, Central Kalimantan, Indonesia. *Biological Conservation*.

2002: (in rev.) Carbon released during peatland fires in Indonesia during 1997. *Nature*.

f) **List of conference/seminar/workshop presentations.**

Paper presented at Changing Wetlands Conference, University of Sheffield: *Carbon storage in the peatlands of Central Kalimantan, Indonesia and the impact of forest fire*.

Paper accepted for presentation at International Symposium on Land Management and Biodiversity in SE Asia: *Studies of *Gonystylus bancanus* (ramin) populations from a peat swamp forest, Central Kalimantan, Indonesia*.

g) **Other outputs.**

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PARTNER INSTITUTE AND CONTACT NAME:

RSS GmbH, Wörthstraße 49, 81677 München

- g) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

The project is running well in time, all milestones have been achieved. The project timetable needs not to be updated.

- h) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

LANDSAT images from the peat area in Central Kalimantan and in Sarawak were procured and processed for further analysis:

Landsat ETM 119/061	26.11.1999	all bands	Kasongan119/062			
26.11.1999	all bands	Sampit 120/058	31.08.2000	all bands		
Sibu on lower edge120/059	31.08.2000	all bands	Sibu on upper edge121/059	18.05.2000	all bands	Kuching

The images were processed, georeferenced, 543 bands color optimized, and mosaicked. All produced TIF images were stored into the ArcView GIS for image interpretation.

Image classification and interpretation has been started.

First results were presented during two workshops held in March and April 2002.

The first workshop was held in Palangkaraya, Indonesia from 26 to 31 March 2002. During the workshop a 1,5 day training was given to the other project partners from University of Plangkaraya.

The a second workshop was held from the 4 to 5 April 2002 in Sibu, Sarawak, Malaysia.

GPS recorded ground observations to be used for image interpretation were made in both study sites, Central Kalimantan and Sarawak. Areas of interest for ground observations were selected and accessed according to our experience/knowledge of tropical peatlands and information from the procured satellite imagery.

GPS recordings were also done for improved georeferencing of the satellite data. The travel from Kuching to Sibul and back to Kuching via the Rajang river was recorded by GPS in continuous track. Digital photos and digital videos were recorded as reference for image interpretation.

An excursion to the Mardi peat research center in Sessang Malaysia gave us the opportunity to gather information plantation activities on peatland (oil palm and sago) and the monitoring of the water table in peatland.

Currently image interpretation is ongoing, approx 30% of the work has been completed.

c) Any other information you wish to comment upon during this period of six months?

Nothing to report

k) If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.

The project timetable has not been changed

l) List of papers published in scientific/technical journals and proceedings.

- 1) H.-D.V. Boehm & F. Siegert (2002). Land use change and (il)-legal logging in Central Kalimantan, Indonesia. Accepted by *International Peat Journal*
- 2) S. E. Page, F. Siegert, J.O. Rieley, H-D V. Boehm and A. Jaya (2002). Carbon released during peatland fires in Indonesia in 1997. In review, *Nature*
- 3) STRAPEAT STATE OF KNOWLEDGE REPORT. Monitoring land cover and impacts, Remote Sensing (RS) and (GIS) used for Kalteng and Sarawak, Borneo by Dr.H.D.V.Boehm and Dr.F.Siegert, 17 pages, 18 Figures and 5 Tables

f) List of conference/seminar/workshop presentations.

- International Workshop on The Establishment of Taught Postgraduate and Short Courses Program in Natural Resources Managmrnt and sustainable Development at Palangkaraya University, Central Kalimantan – Indonesia, 26-28 March 2002
- STRAPAET Meeting & Site Visit, Palangkaraya, Central Kalimantan, 30-31 March 2002
- STRAPEAT Meeting & Site Visit Tanah Mas Hotel, Sibul, Sarawak, 4-5 April 2002

g) Other outputs.

Quicklooks of the procured satellite images including GPS-tracks and ground observations.

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PARTNER INSTITUTE AND CONTACT NAME:

University of Helsinki, Finland, Dr. Harri Vasander

- i) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

The project has started well. We had several meetings together with the other partners where general guidelines for the project were clarified. Seminar and field trips in Sarawak were a good start in planning for the measurements there. More national funding has been applied and a status report on the carbon stores and fluxes of tropical peatlands is to be written. Principal research worker Dr. Jyrki Jauhiainen is working for the year 2002 for the project. He spent one month in Central Kalimantan in March-April making the measurements of soil gases, visiting new sites and attending seminars and workshops. This visit was very valuable for the future works and contacts.

- j) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

cf. above. The shortage of travel money and possibility of achieving good students for the measurements may be difficult if there is no extra national funding.

- c) **Any other information you wish to comment upon during this period of six months?**

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- m) **If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.**

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- n) **List of papers published in scientific/technical journals and proceedings.**

Jauhiainen, J., Nykänen, H., Martikainen, P.J. & Vasander, H. 2002: CO₂ and CH₄ fluxes in pristine and clear-cut Central Kalimantan peatlands. – International Peat Journal (in press).

Siegert, F., Boehm, H.-D.V., Rieley, J.O., Page, S.E., Jauhiainen, J., Vasander, H. & Jaya, A. 2002: Peat fires in Central Kalimantan, Indonesia: fire impacts and carbon release. - In: Rieley, J.O. & Page, S.E. (eds.), Peatlands for People: Natural Resource Functions and Sustainable Management: 142-154. BPPT and Indonesian Peat Association.

Jauhiainen, J., Vasander, H., Heikkinen, J. & Martikainen, P.J. 2002: Carbon fluxes in pristine and developed Central Kalimantan peatlands. - In: Rieley, J.O. & Page, S.E. (eds.), Peatlands for People: Natural Resource Functions and Sustainable Management: 207-213. BPPT and Indonesian Peat Association.

f) List of conference/seminar/workshop presentations.

Two seminars in Palangka Raya, Indonesia in March 2002

One seminar in Sibuluhud, Sarawak, Malaysia in April 2002

One seminar in Medan, Sumatra, Indonesia in April 2002,

One seminar in Finland, April 2002

Two presentations in Canada (Edmonton, Québec City) in May 2002

g) Other outputs.

One large article in the second biggest Finnish newspaper, Aamulehti, about the project in Indonesia in December 2001.

Discussion and panel in the Finnish Parliament (Environmental Committee) about the problems encountered in tropical peatlands in February 2002.

One large article in the science pages of the biggest Finnish newspaper, Helsingin Sanomat, about the tropical peat swamp forests and our project in March 2002

One interview in Finnish television concerning the trade of tropical wood in May 2002

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PARTNER INSTITUTE AND CONTACT NAME: UNPAR (06)/SUWIDO H. LIMIN

- k) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

Preliminary data for task in workpackage of UNPAR has been collecting and in planning process for searching. Some of targets are not yet achieved because there were not joint agreement about schedule and budget among partners who involve in the same task.

- l) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

b.1. In order to achieve the objective, UNPAR partner has been preparing two UNPAR's staff to follow postgraduate course. Miss Yulintine and Mr. Darmae Nasir have been accepted in the University of Nottingham, UK. UNPAR partner have been organized and equipped to support the need to reach the objective. Secondary data such as maps and statistical data have been collecting.

b.2. There were found areas of waste land of transmigration area in inland peat (Kalampangan and Trans Bangdep Tahai).

b.3. There were found peat thickness distribution of Trans Bangdep Tahai (inland peat).

- c) **Any other information you wish to comment upon during this period of six months?**

During the first six months period there is a problem in coordination between partners whose involve in the same task. Therefore, agreement among participants have to be made. The agreement is about distribution of funding, time schedule and topics including in a task.

- o) **If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.**

Reschedule of project timetable will be made especially for the joint task. But this new time schedule can not yet provided by UNPAR without coordination with other participants.

- p) **List of papers published in scientific/technical journals and proceedings.**

During the first six months period there is no one paper published.

f) List of conference/seminar/workshop presentations.

In the period of six months, UNPAR has been participated in some conference, seminar and workshop. During these activities, UNPAR socialized this project. Table below presented some activities of UNPAR.

No	Place/date	Organizer	Topics and role
Seminar			
1	Palangka Raya, 17 May 2002	Departement of Forestry, Central Kalimantan	Strategic planning and actions to handle forest fire in peatland areas (presenter)
2	Palangka Raya, 27 April 2002	LPLH-KT	Enviromental Education (participant)
3	Palangka Raya, 18 May 2002 31 May 2002	Development Planning Agency of Palangka Raya Municipal city	Design and planning of Kameluh Baru village resettlement in peatland areas located in the border areas of Palangka Raya Municipal City and Kapuas Regency (presenter)
Workshop			
1.	Palangka Raya, 28-29 March 2002	CIMTROP UNPAR	Strategies for sustainable development of peat in Borneo (presenter)
2.	Sibu, Malaysia 4-5 April 2002	USM Sarawak Malaysia	Strategies for sustainable development of peat in Borneo (presenter)
3.	Palangka Raya 25 April 2002	WWF and CIMTROP	Peatland and Orang Utan conservation in sebangau catchment (presenter)
4.	Palangka Raya, 8 May 2002	CIMTROP UNPAR	Informal leader opinion and suggestion for the development in peatland areas (presenter).
5.	Palangka Raya, 18 May 2002	Development Planning Agency of Palangka Raya Municipal city	Reforestation program in Palangka Raya Municipal City (participant).

g) Other outputs.

None

EUROPEAN COMMISSION INCO-DEV

CONTRACT NO: ICA4-CT-2001-10098: STRATEGIES FOR IMPLEMENTING SUSTAINABLE MANAGEMENT OF PEATLANDS IN BORNEO

SIX MONTHLY REPORT: 1.12.01 TO 31.5.02

PARTNER INSTITUTE AND CONTACT NAME:

GADJAH MADA UNIVERSITY (UGM); PROF. Dr. BOSTANG RADJAGUKGUK

- m) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

Project management team and procedures have been established (1100) as well as project financial systems (1200). Project monitoring and reporting systems (1300) established, aided by computing system. Communication and dissemination network (1400) assisted primarily by the E-mail/Internet system, established. Protocols for the collection, storage and evaluation of data and other information formulated; protocols for standardisation of approach and methodologies agreed upon between partners (1500). State of knowledge of the peat soil of Kalimantan written up and gaps identified (2100). Collection of information on sector development (2200), assessment of sector developments (2300) and collation of existing information (3100) commenced. Planning for the collection of biophysical data (3300) started. Identification of indicators for sustainable management (4100) commenced. Cross fertilisation between and among partners (6200) has been implemented through Project Meeting and Site Visit held in Palangka Raya, Central Kalimantan, Indonesia on 30-31 March 2002, and in Sibu & Sessang, Sarawak, Malaysia on 4-5 April 2002. These meetings also served as Project Management meetings. Laboratory and glasshouse facilities as well as laboratory instruments are already organized and ready to support research implementation. Plans for field experimentation have been commenced. No significant delays have been encountered in achieving milestones. Some delay, however, has occurred in the selection of Research Scientist (PhD candidate) and Research Assistant (MSc candidate) due to lack of qualified candidates.

- n) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

Much progress has been made in achieving the Project's objectives. Extensive literature and other information have been collected on the extent and characteristics of the tropical peatland resource as related to its sustainable management especially in SEAsia, and particularly in Borneo. Also, sufficient personnel and adequate laboratory and glasshouse facilities as well as equipment

have now been prepared to carry out future experiments and analysis. A clear plan has been drawn up for field work and laboratory work to be commenced in September 2002.

One Research Assistant (i.e. Mr. Ruly Eko Kusuma Kurniawan) who will be working for the MSc degree has been appointed as from 1.1.02, and one Research Scientist (i.e. Mr. Nyahu Rumbang) who will be working for the PhD degree has been appointed as from 1.5.02. Mr. Nyahu Rumbang has written up his PhD proposal entitled "The assessment of biophysical aspects of sustainable agriculture in tropical peatland: Soil and plant factors".

We are convinced the Project will achieve all the original objectives as specified. No major problems have been encountered so far in achieving objectives of the Project. Ways and means will be found to speed up flow of samples from the field to Yogyakarta.

c) Any other information you wish to comment upon during this period of six months?

The Project meetings in Palangka Raya and Sibuhut had given a great opportunity for the Team Leader (Prof. Dr. Bostang Radjagukguk) to work closely with fellow scientists from various nationalities, and the great benefit of sharing among the different expertises. It was satisfying to learn that scientists from different backgrounds and specializations shared the same view that a wise and sustainable management of tropical peatland resource is absolutely vital in the quest for the betterment of human welfare. The field visit to Tropical Peat Research Station in Sessang, Sarawak, and to the surrounding peatland areas had given the UGM Team Leader a much clearer view of tropical peatland research and utilization in that State which has about 63% of Malaysia's total peatlands.

q) If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.

Since the project timetable and milestones have not slipped appreciably, an updated implementation timetable for the remainder of the project is not deemed necessary. The time of completion of study for the Research Scientist (PhD) may, however, extend somewhat beyond the official project completion date.

r) List of papers published in scientific/technical journals and proceedings.

Masganti, Notohadikusumo, T., Maas, A. and Radjagukguk, B. 2002. Hydrophobicity and its impact on chemical properties of peat. In Peatlands for People: Proceedings of the International Symposium on Tropical Peatlands held in Jakarta, Indonesia, on 22nd and 23rd August 2001. Editors: J.O. Rieley and S.E. Page. pp. 109-113.

Sajarwan, A., Notohadiprawiro, T., Radjagukguk, B. and Hastuti, S. 2002. Diversity of tropical peat characteristics in intact peatland forest under the influence of forest type, peat thickness and position of peat deposit. In Peatlands for People: Proceedings of the International Symposium on Tropical Peatlands held in Jakarta, Indonesia, on 22nd and 23rd August 2001. Editors: J.O. Rieley and S.E. Page. pp. 119-124.

Kurnain, A., Notohadikusumo, T., Radjagukguk, B. and Hastuti, S. 2002. The state of decomposition of tropical peat soil under cultivated and fire damaged peatland. In Peatlands for People: Proceedings of the International Symposium on Tropical Peatlands held in Jakarta, Indonesia, on 22nd and 23rd August 2001. Editors: J.O. Rieley and S.E. Page. pp. 168-178.

f) List of conference/seminar/workshop presentations.

None.

g) Other outputs.

1. The peat soil of Kalimantan: Existing knowledge and information gaps. STRAPEAT Status Report.
2. The assessment of biophysical aspects of sustainable agriculture in tropical peatland: Soil and plant factors. PhD Research Proposal by Nyahu Rumbang.

EUROPEAN COMMISSION INCO-DEV

CONTRACT NO: ICA4-CT-2001-10098: STRATEGIES FOR IMPLEMENTING SUSTAINABLE MANAGEMENT OF PEATLANDS IN BORNEO

SIX MONTHLY REPORT: 1.12.01 TO 31.5.02

PARTNER INSTITUTE AND CONTACT NAME:
UNIVERSITY OF SRIWIJAYA, INDONESIA (UNSRI)

o) Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.

- (i) Preparation of fieldwork activities has been made in terms of finding the appropriate location for CD office building, CD demonstration plot, contact persons, and technical support to start planning and livestock and fishpond experiments.
- (ii) Socialization of the community-based activities has also been conducted through religious leaders, local leaders and informal chat. The team consists of 3 lead by K. Hafiz, SE (S1) supported by Ir. Ferra (S1) and 2 local workers.
- (iii) The area and community targets are Kereng Bengkirai (the waterfront village of Sebangau River to the south of Palangka Raya) and its surrounding villages and communities, and a warm welcome was obtained from the people. S3 and S2 experts will conduct socio-economic monitoring and assessment intermittently once in every 3 months.

p) What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).

- (i) A plot of land (9,000 m²) was rented from a local leader in Kereng Bengkirai to be used as the fieldwork area for action research. The CD headquarter office (4x6 m²) and 200 m² of vegetable demonstration plot was positioned intentionally just by the side of the village road.
- (ii) The production activities are established using local resources but have been enriched by appropriate technology and management that are easy for and affordable by the villagers. The first scientific evaluation will be carried out in September 2002.
- (iii) Within the first 6 months the production activities just covered a portion of the total land and first harvest is expected to happen sometime towards the end of July 2002. Only at the end of the second 6 months will the total area be utilized.

q) Any other information you wish to comment upon during this period of six months?

Some constraints:

- (i) The first six months were spent trying to understand the technical problems, such as water availability, land fertility and social rejection, if any and so far these have been controlled. During the dry season (May-August) extra effort must be made.
- (ii) The selection of experienced and skilled team members as well as dedicated local personalities has been a problem in itself.

- (iii) Monitoring of social behaviour regarding their activities in taking advantage of the forest resources were partially neglected as the crews have been preoccupied much to make technical work in the CD plot.

s) If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.

On schedule

t) Spending status.

- (i) The spending was rationalized with proper planning and prioritization.
- (ii) 55% of the first allocated budget has been spent already and the rest will be used up in the next 6 months.
- (iii) The allocated fund is so limited and apparently enough only for handling 1 or 2 locations of CD headquarters in one province.

u) List of papers published in scientific/technical journals and proceedings.

None so far

v) List of conference/seminar/workshop presentations.

Symposium Presentation:

Sjarkowi, F. (2002) Socio-entropy system (SESA) towards sustainable management of a peatland forest ecosystem in Central Kalimantan, Indonesia. *Peatlands for People: Natural Resource Functions and Sustainable Management. Proceedings of the International Symposium on Tropical Peatland, 22-23 August 2002, Jakarta. BPPT and Indonesian Peat Association, pp. 224-235.*

Scientific Journal Publication:

Sjarkowi, F. (2002) Socio-entropy system (SESA) towards sustainable management of a peatland forest ecosystem in Central Kalimantan, Indonesia. *Tropical Peatlands, 1: 48-63. ISSN 1412 0631.*

Seminar/Workshop presentations:

STRAPEAT workshop, Palangka Raya, Central Kalimantan, Indonesia, 30-31 March 2002

STRAPEAT workshop Sibul, Sarawak, 4-5 April 2002

Sjarkowi, F. After the SESA study. What next. 4 pp.

w) Other outputs.

November 2001, strategy meeting with the Vice-Governor of Central Kalimantan, Indonesia and the heads of Provincial Departments to explain the aims and objectives of the STRAPEAT Project and discuss new approaches to the sustainable development of peatland in Central Kalimantan Province. Other members of the STRAPEAT delegation included Professor Jack Rieley UNINOT, DR. Bambang Setiadi BPPT, Professor Bostang Radjaguguk UGM and Dr. Herbert Diemont Alterra The Netherlands.

EUROPEAN COMMISSION INCO-DEV

CONTRACT NO: ICA4-CT-2001-10098: STRATEGIES FOR IMPLEMENTING SUSTAINABLE MANAGEMENT OF PEATLANDS IN BORNEO

SIX MONTHLY REPORT: 1.12.01 TO 31.5.02

PARTNER INSTITUTE AND CONTACT NAME:
UNIVERSITI SAINS MALAYSIA
PROF. MASHHOR MANSOR

r) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

1. The information gaps have been improved by sharing information based on previous studies.
2. Some information regarding the distribution of weedy and pest species of peat swamps in Palangkaraya and Sesang, Sarawak has been collected.

s) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

1. Study sites in Palangkaraya and also Sesang Sarawak, have been visited in Mac and April 2002.
2. A paper on noxious weed (*Mimosa pigra*) found in recent trip to Mega Rice project will be presented in September during the International Symposium of Lake, Bali, Indonesia.

c) **Any other information you wish to comment upon during this period of six months?**

x) **If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.**

y) **List of papers published in scientific/technical journals and proceedings.**

none

f) **List of conference/seminar/workshop presentations.**

none

g) **Other outputs.**

EUROPEAN COMMISSION INCO-DEV

CONTRACT NO: ICA4-CT-2001-10098: STRATEGIES FOR IMPLEMENTING SUSTAINABLE MANAGEMENT OF PEATLANDS IN BORNEO

SIX MONTHLY REPORT: 1.12.01 TO 31.5.02

PARTNER INSTITUTE AND CONTACT NAME:

Universiti Malaysia Sarawak (UNIMAS) [Partner No. 10]
Contact: Prof Murtedza Mohamed

- t) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

<i>Assigned Task</i>	<i>Progress</i>	<i>Timing</i>
1) Study the biodiversity and characteristics, including the hydrological functions, of natural peatlands.	1) Revised during Partners Workshop in Palangka Raya and Sibul; reassigned to Partner No. 9 (USM).	
2) Carry out preliminary/limited interview and questionnaire surveys of local communities utilising peatland resources and products.	2) Collation of published and unpublished reports from the relevant government and non-government agencies is ongoing. Progress is presented in Annex 1 .	On schedule
3) Conduct research in case study areas to collect data (where there are knowledge gaps) on peat soil physical and chemical characteristics; and integrate the findings into the data base module of a management support system.	3) Location of experimental plots have been identified at the MARDI Sessang Peat Research Station. Awaiting establishment of drainage control gates. A full-time researcher (graduate student) has been appointed. An appraisal of existing knowledge and information gaps on the peat soils of Sarawak has been completed (Annex 2).	On schedule. Further progress would subject to official endorsement by MARDI.
4) Appraisal of environmental impacts of peatland development in Sarawak.	4) Collation of EIA reports for agricultural development on peatlands has been completed. Assessment of impact predictions and recommended mitigation measures against the field implementation is on-going (Annex 3).	On schedule.

- u) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

Progress to date is satisfactory. However, further field activities would subject to official endorsement of the Project by the Sarawak State Authority. Efforts are being

made to explain to the relevant authority the nature and significance of the Project, and thereon secure the permission to conduct the study in the State.

c) Any other information you wish to comment upon during this period of six months?

None.

z) If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.

aa) List of papers published in scientific/technical journals and proceedings.

f) List of conference/seminar/workshop presentations.

Murtedza Mohamed, E. Padmanabhan, Y. L. Tie, B. L. H. Mei and W. B. Siong. 2002. The peat soils of Sarawak- Existing knowledge and information gaps. Paper presented at the STRAPEAT Meeting & Site Visit, Palangka Raya, Central Kalimantan, 30 & 31 March 2002.

g) Other outputs.

EUROPEAN COMMISSION INCO-DEV

CONTRACT NO: ICA4-CT-2001-10098: STRATEGIES FOR IMPLEMENTING SUSTAINABLE MANAGEMENT OF PEATLANDS IN BORNEO

SIX MONTHLY REPORT: 1.12.01 TO 31.5.02

PARTNER INSTITUTE AND CONTACT NAME: **MARDI / JAMALUDIN BIN JAYA**

v) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

1. Establishing funding procurement (between MARDI & Alterra):
 - Project document preparation
 - Contractual agreement preparation
2. WP 2000: State of knowledge:
 - Review status on peat land sector management and utilization in Sarawak
 - Review status on agricultural land use in Sarawak
 - Identify critical gaps

w) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

1. Funding arrangement between MARDI and Alterra has been established successfully.
2. Status on peat land sector management and utilization have been reviewed and reported and critical gaps identified and reported.

c) **Any other information you wish to comment upon during this period of six months?**

The project compliments the existing ongoing peat project entitled "Studies on the management and conservation of virgin tropical peat land"

bb) **If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.**

None

cc) List of papers published in scientific/technical journals and proceedings.

Jaya, J.B. and Ooi, H.S. (2002). Eco-friendly of land clearing techniques of virgin peatlands in Sarawak. *Proc. symp. on peatlands for people, natural resources function and sustainable management*, 22-23 Aug 2001, Jakarta, Indonesia (Rieley, J.O., Page, S.E. and Bambang Setiadi, ed.)

f) List of conference/seminar/workshop presentations.

Jakarta Symposium on Peatlands for People, Natural Resources Function and Sustainable Management, 22-23 Aug 2001, Jakarta, Indonesia.

g) Other outputs.

None

EUROPEAN COMMISSION INCO-DEV

CONTRACT NO: ICA4-CT-2001-10098: STRATEGIES FOR IMPLEMENTING SUSTAINABLE MANAGEMENT OF PEATLANDS IN BORNEO

SIX MONTHLY REPORT: 1.12.01 TO 31.5.02

PARTNER INSTITUTE AND CONTACT NAME:
INDONESIAN AGENCY FOR ASSESSMENT AND IMPLEMENTATION OF
TECHNOLOGY, JAKARTA, INDONESIA (BPPT): DR. BAMBANG SETIADI

x) **Outline progress over the last six months against the agreed baseline timetable for the project. If some milestones have not been achieved or have slipped, explain reasons for this.**

- (i) An office for STRAPEAT has been established in Building 1 of the BPPT complex in Jalan M.H. Thamrin, Jakarta. Partners are invited to supply publicity information for distribution to the public and Indonesian Agencies.
- (ii) A research officer has been allocated to the task of co-ordinating remote sensing and GIS information allied to the STRAPEAT Project, especially with regards to West Kalimantan.
- (iii) The West Kalimantan field station for agriculture on peat (PURIGATRO) in West Kalimantan has been allied to the STRAPEAT Project.
- (iv) Communications and networking with Indonesian Agencies and Ministries to establish dialogue on sustainable development of Indonesia's peatland resources has commenced.

y) **What progress has the project made in achieving its objectives over the last six months? Is the project still expected to achieve all the original objectives that were specified? Explain any problems/difficulties encountered to date in achieving the objectives of the project (or any envisaged in the future).**

Programme is on schedule and so far problems have not been encountered.

z) **Any other information you wish to comment upon during this period of six months?**

The proceedings of the International Symposium on Tropical Peatland: Peatlands for People – Natural Resource Functions and Sustainable Management have been published jointly by BPPT and The Indonesian Peat Society.

dd) **If the project timetable has slipped or changed, provide an updated project implementation timetable for the remainder of the project.**

Timetable is still on schedule

ee) **List of papers published in scientific/technical journals and proceedings.**

f) **List of conference/seminar/workshop presentations.**

Seminar/Workshop presentations:

STRAPEAT workshop, Palangka Raya, Central Kalimantan, Indonesia, 30-31 March 2002

STRAPEAT workshop Sibul, Sarawak, 4-5 April 2002
(c) Peatland Sector Management

g) Other outputs.

November 2001, strategy meeting with the Vice-Governor of Central Kalimantan, Indonesia and the heads of Provincial Departments to explain the aims and objectives of the STRAPEAT Project and discuss new approaches to the sustainable development of peatland in Central Kalimantan Province. Other members of the STRAPEAT delegation included Professor Jack Rieley, Professor Fachrurrozie Sjarkowi, UNSRI, Professor Bostang Radjagukguk UGM and Dr. Herbert Diemont Alterra The Netherlands.