

COURSE REPORT

Training on Coal Mine Site Rehabilitation for Field Practitioners

**Bukit Bangkirai - Samboja, East Kalimantan, Indonesia
December 5-8, 2012**

A course sponsored by:

Environmental Leadership & Training Initiative (ELTI)

Tropenbos International-Indonesia Program (TBI-Indonesia)

Faculty of Forestry, Bogor Agricultural Institute (IPB)

Research Institute of Nature Resources Conservation Technology-Samboja (BALITEK-KSDA Samboja)

Background: Open-pit, coal mining has resulted in wide-scale environmental degradation in East Kalimantan, Indonesia. Not only the mine sites themselves are affected, but downstream areas are also impacted by toxic run-off, river sedimentation, landslides, and flash floods. Government regulations call for the progressive rehabilitation of mined areas to mitigate these impacts, but most companies do not have adequate technical capacity to contend with toxic soils, and poor government oversight allows companies to evade their regulatory responsibilities. With mining concessions already covering over three million hectares of land in the province, the issue of mine site rehabilitation has become a hot political topic at all levels of government.

Capitalizing on the increased political will to address this problem, ELTI, TBI-Indonesia, IPB, and BALITEK-KSDA Samboja, working in coordination with the Governor's Office and the Provincial Mining & Energy Service (DISTMABEN), initiated a program to build capacity in rehabilitating mined areas. This initiative was launched with a symposium, *Mine Site Rehabilitation: Mainstreaming Landscape Restoration in Indonesia*, which was held in Balikpapan on March 6, 2012. The following day, a workshop for representatives from different stakeholder groups was held to reach a common understanding of the nature of the problem and map out concrete steps needed to improve mine site rehabilitation. The next step was a *Training on Mine Site Rehabilitation Regulations for Government Staff*, which was held from September 25-27, 2012, in Balikpapan and Samboja for District-level regulators from the Ministries of Environment, Forestry, and Energy & Mineral Resources, who are responsible for overseeing, enforcing laws and regulation, and providing technical input to coal mining companies on their rehabilitation efforts.



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As the next step in the initiative, ELTI, TBI, IPB, and BALITEK-KSDA Samboja held a training for environmental officers and other staff from the mining companies. This training covered only a small percentage of the estimated 1200 mining companies currently active in East Kalimantan, but efforts are underway to find institutional mechanisms to scale up capacity building for this audience.

Course Objectives:

- To provide participants with an in depth understanding of the government regulations that pertain to mine site rehabilitation;
- To provide participants with a detailed, technical understanding of the steps needed to achieve mine site rehabilitation; and
- To provide a forum for discussing challenges and obstacles faced by mining companies in fulfilling their regulatory responsibilities to rehabilitate their areas.



Course Format: Following an opening by Dr. David Neidel (ELTI) and Dr. Petrus Gunarso (TBI-Indonesia), the first day consisted of a series of introductory lectures. Dr. Yadi Setiadi (IPB) discussed the impact of mining on biodiversity and ecosystem services. Dr. Hery Suhartoyo (University of Bengkulu) provided a discussion on acid mine drainage and the steps needed to avoid the problem in the mining process, and methods to mitigate the problem through rehabilitation. Mr. Muhammad Nyl Hassan (Forestry, Mining and Energy Service, Paser District) provided a synthesis of mining regulations enacted by the Ministries of Energy and Mineral Resources, Forestry, and Environment. Dr. Setiadi then provided a further discussion of the regulations by pointing out some of the difficulties in their implementation. Dr. Chandra Boer (Mulawarman University) discussed the importance of conserving biodiversity within mining areas,



while Dr. Petrus Gunarso placed mine site rehabilitation in the larger context of ongoing deforestation in Indonesia and the need to increase forest restoration. Finally, Ir. Pandu Wahono (Private Consultant) provided a detailed discussion on using Corporate Social Responsibility as a means for mining companies to engage with local communities, including through mine site rehabilitation

On the second day, the morning session was spent in the classroom. Dr. Ishak Yassir (BALITEK-KSDA Samboja) provided an introduction to choosing plants for reforestation, emphasizing the importance of working with nature, and giving preliminary results of planting trials using native, pioneer species. Dr. Setiadi then discussed methods for soil sampling methods, analyzing soil sample results, and amelioration techniques for problematic or toxic soils. After lunch, Dr. Setiadi and Mr. Arif Setiawan (IPB) led the group in the production of “biorganik,” a high-quality compost from materials found in or near the site.

On the third day, participants were taken to the PT. Singlurus Pratama mine site, where they critically examined existing reforestation plots, looking at the usage of grass, leguminous cover crops, and forest trees. In the afternoon, instruction took place at the Bukit Bangkirai Nursery facilities, where Dr. Setiadi, Dr. Yassir, and Mr. Thamrin (PT. Inhutani) covered an array of topics related to nursery management, working with wildlings, and the development of high-quality planting material.

On the fourth and final day, participants were taken once again to PT. Singlurus Pratama mine site, where they learned the “templok” method for establishing vegetative cover on easily eroded, steeply sloping surfaces, and a seed soil augmentation technique, which is used to re-vegetate areas by transferring seed-containing top soil from nearby forest areas to previously mined areas. Dr. Setiadi then examined signs of soil toxicity in existing trees, and provided an introduction to “lateral root manipulation”—a procedure for reviving trees that are exhibiting slow or stunted growth. Finally, he discussed government regulations that pertain to site monitoring, and how regulations are implemented and evaluated in the field. The training came to a close back at the Bukit Bangkirai facility with a summary of lessons, participant evaluations, and awarding of certificates.

Participants: The training was attended by 29 participants from small and medium-sized mining companies. The participants were chosen with assistance from DISTAMBEN and input from the District-level mine regulators who participated in the previous training.

Press Coverage: The training was covered in the following newspaper article:
Tribun Kaltim, 7 December 2012: ELTI Kerahkan Enam Doktor, p. 22.

Follow-Up: Upon returning to their workplace, the participants will echo elements of the training to other staff members and ensure the adoption and implementation of what they learned. ELTI, TBI, IPB, and BALITEK-KSDA Samboja will provide follow-up support as needed. We are also looking into filling the huge capacity building gap in the province by setting up the PT. Inhutani Bukit Bangkirai facility as a permanent training and research center on mine site rehabilitation—and possibly expanding this model to other highly mined provinces throughout Indonesia. Management at PT. Singlurus Pratama has already expressed tentative approval for the continued use of its mine site for this purpose.



This event was possible thanks to Arcadia Fund, whose Environmental Conservation grants support programmes that protect and enhance biodiversity, and provide field training and academic research.