

casestudy

Indonesia Banpu

Through expert partnerships and community engagement, Banpu is minimising its mines' impact on local biodiversity.

The Heart of Borneo is known as Asia's last great rainforest. The 220,000-square-kilometre region of Borneo island is recognised globally as an area of outstanding biodiversity and protected by a 2007 agreement between Indonesia, Malaysia and Brunei.

So for the companies managing the area's 11,000 square kilometres of coal concessions, limiting their operations' impact on local biodiversity is a high priority.

Indo Tambangraya Megah (ITM), the Indonesian subsidiary of Banpu, is one such company. Banpu was established in Thailand and now has coal mining operations in China, Mongolia, Australia and Indonesia. Its Indonesian mines – Indominco, Trubaindo, Jorong and Kitadin-Embalut – produce about 23 million tons of coal a year.

In 2010, the company began operations at a new mine, Bharinto, in Central Kalimantan – deep in the Heart of Borneo. Recognising

the potential impact of open-cast mining in such an ecologically rich area, Banpu had already taken steps to preserve and eventually restore biodiversity at Bharinto.

Deforestation is an unavoidable effect of open-cast mining in a wooded area, but careful pre-project assessment and post-project rehabilitation of the site can limit the long-term impact. With that in mind, Banpu reached out to Purwodadi Botanical Garden in East Java to help design a biodiversity study programme.

Since 2010, Banpu and the Botanical Garden have been collaborating on detailed field studies. The studies record environmental conditions such as temperature, humidity and light intensity; the physical and chemical characteristics of the soil; and the amount of carbon dioxide plants in the



The Mahakam Delta in East Kalimantan

area can potentially trap. When the mine eventually closes, these records will act as a template for restoring the area to its previous condition.

The records also include an inventory of flora, their characteristics and diversity – paying particular attention to the keystone species. These are species without which the ecosystem would change significantly or even collapse.

The inventory includes a variety of wild orchids. This rare plant species is highly sensitive to changes in the environment, so researchers use them as indicators of an area's environmental quality: if wild orchids can thrive, it's likely the local environment is healthy.

Throughout the field study, researchers are collecting samples of ecologically valuable plant species for preservation and cultivation at Purwodadi Botanical Garden. Sediment and topsoils from the area are also being stored while Bharinto is operating. When the mine closes down in 2026, the plan is

“Biodiversity is a material issue for the coal mining industry, especially in open-cast mining.”

Sanicha Pinyocheep, environmental specialist, Banpu



to back-fill the area with the stored topsoil and replant the vegetation from the stocks cultivated at the Botanical Garden.

Rehabilitation is only a small part of the programme at present – the work cannot begin in earnest until the last five years of the mine's operations. In the meantime, the Botanical Garden is working hard to discover the best way to propagate and eventually reintroduce each species. With so many uncontrollable factors involved, this has the potential to be the most challenging part of the programme.

Local authorities and communities will play a significant role in rehabilitating the area. The impact of mining operations on biodiversity also has knock-on effects for local

communities who rely on the forest for food and medicine.

Banpu built community engagement into its biodiversity programme from the beginning, recruiting local people to join the field research team and interviewing key individuals about the uses of different plants. For instance, the team learned which trees can be tapped to access drinking water and which plants produce the best poisons for hunting.

Bharinto is the pilot project for this integration of environmental management and community development programmes. In the short term, it allows Banpu to give something back to its host communities, providing local people with new knowledge and sources of income. In the longer term, that new knowledge and ecological awareness helps lay the groundwork for the future rehabilitation programme. Making the effort to understand people's needs now makes sure the rehabilitated area will accommodate those needs, so the local communities can continue to make sustainable use of the natural resources that surround them.

Both the biodiversity and community development programmes aim not just to preserve an existing state, but to improve conditions wherever possible. The whole mining industry recognises biodiversity as a key issue, but the community engagement aspect of biodiversity protection is one area where Banpu demonstrates real leadership. Another is the scale of the company's voluntary activity. Regulations require environmental impact assessments for all mining operations, but Banpu's sustainable development policy takes it significantly above and beyond what is required.

The Bharinto biodiversity study will not be complete until 2017, but it has already proved so successful that Banpu is now applying a similar programme at Indominco, another of its Indonesian coal mines. Indominco is already operational, so the challenge here will be restoring biodiversity without the detailed pre-project assessment Banpu achieved at Bharinto. Banpu is taking forward its partnerships with the Purwodadi Botanical Garden and with local institutions and taking on this challenge with confidence.



Timeline:

- 1983:** Banpu established
- 1989:** Banpu listed on Stock Exchange of Thailand
- 1996:** Operations commence at Indominco Mine
- 2007:** World Wide Fund for Nature brokers Heart of Borneo Agreement
- 2009:** Banpu and Purwodadi Botanical Garden begin discussions
- 2010:** Operations commence at Bharinto Mine
- 2010:** Banpu and Purwodadi Botanical Garden launch Bharinto biodiversity study
- 2012:** Indominco biodiversity study launched
- 2013:** Bharinto biodiversity study expands to cover more ground
- 2017:** Bharinto field study concludes
- 2021:** Indominco Mine closes
- 2026:** Bharinto Mine closes

Find out more

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To find out more about the World Coal Association and our work, visit www.worldcoal.org or email info@worldcoal.org

