

FAST FACTS

United Nations Development Programme



Tsunami Recovery Waste Management Programme

The immediate aftermath of the 2004 earthquake and tsunami left an enormous volume of debris. Wood, metal and brick from urban development; timber and mud from fields and mangroves littered the landscape. A concerted effort was initiated directly after the disaster to clear debris and allow emergency personnel and supplies through. In March 2005 UNDP's Tsunami Waste Recovery Facility in Banda Aceh began this process.

The Tsunami Recovery Waste Management Programme (TRWMP), executed by UNDP's Emergency Response and Transitional Recovery (ERTR) Programme evolved from the initial Waste Facility in September 2005. TRWMP is funded through a US\$14.4 million grant from the Multi-Donor Fund for Aceh and Nias and implemented through district sanitation departments.



MATTERS OF FACT *(as of 10/06)*

- 1,060,307 m³ of tsunami waste in the seven districts of Banda Aceh, Aceh Barat, Pidie, Aceh Besar, Aceh Jaya, Nias and Nias Selatan, collected since January 2005
- 88,308 m³ of municipal waste collected
- 59,800 m³ of rubble sorted for recycling in Banda Aceh
- 17,442 m³ of recovered wood conditioned for recycling in Banda Aceh and Aceh Barat
- 1,450 daily average of temporary workers employed in all districts
- 669 hectares of rice fields (*sawah*), fishponds, and other land rehabilitated or cleared
- Municipal solid waste collection initialized in Aceh Besar and resumption of collection in four other districts
- 53.1 km of roads reclaimed and rehabilitated using tsunami rubble
- 2,089 products made from recovered wood, including 480 desks and chairs commissioned for elementary schools

TRWMP retains a three-fold strategy: to create immediate employment and longer-term livelihoods in the waste management trade; benefit the environment through the collection, recovery and recycling of waste materials; and build the capacity of local government bodies.

Every day, an average of 1,450 temporary workers are engaged in various waste management activities. Workers include an almost equal mix of gender, with quotas reserved for Internally Displaced Persons (IDPs), and recruitment of former GAM (Free Aceh Movement) members actively encouraged. The hiring of temporary workers garners community support and strengthens local governance.

Reclamation of farmland and the ecosystem has gone hand in hand with reconstruction. The tsunami deposited layers of sediment up to 100 centimeters thick and debris across coastal agricultural land. TRWMP uses heavy equipment and cash-for-work labour to remove the tsunami waste, silt, and tree debris. Over 669 hectares of rice fields (*sawah*), fishponds, and mangroves have been cleared or rehabilitated in Aceh Jaya and other districts. TRWMP helps to coordinate community action and contributes informal advocacy as the small farmers of *sawah* get reestablished.

From the collected concrete rubble, roads and community pathways have been constructed. A 350 meter access road now leads to Banda Aceh's Ulee Lheu port. The 8-meter wide, 3-meter deep road, is remarkable regeneration of tsunami rubble.

Along with the tsunami waste, municipal waste gradually was generated again and needed to be collected. After the devastating loss of staff and facilities, UNDP assisted the resumption of municipal waste removal in the other six districts. Aceh Besar, a district more than 16 times the size of Banda Aceh holding a substantial population, did not have a municipal waste removal system before the tsunami. TRWMP encouraged removal to begin, and an independent local waste management office has started which will eventually be absorbed by the district sanitation department (KKP Aceh Besar).

The Gampong Jawa dumpsite was established for Banda Aceh and surrounding areas. The dumpsite receives an average of 600m³ municipal and tsunami waste per day.



Ten dumpsites have been upgraded or rehabilitated within all districts.

Controlled landfills have been started at the Gampong Jawa site which will progress to sanitary - covered with a layer of soil every day - landfills in the future. The present landfills are compacted and fitted with retaining walls or *berms*. The site will meet the needs of the metropolitan area for an estimated 16-25 years. Zinc recovery from metal waste has also been introduced with proceeds going back into the community.

In the initial stages of emergency clean-up, DKP and UNDP realized the value of the "waste" they were collecting. The waste timber was of good quality, strong enough for boats and house framing, and often considered better than the new timber used in house reconstruction.

Gampong Jawa also contains the wood recovery workshop. Waste wood is cleaned and sorted, then cut and sanded into standard lengths for construction. The workshop specializes in furniture: wardrobes, cabinets, bookshelves; chairs and tables of all kinds. The resulting workmanship is excellent. Workshop tools and equipment are provided by DKP using proceeds from metal waste recovery. Profits from sales go back into the facility for equipment upgrades.

The workshop employs 63 skilled and unskilled workers with training for the manual labourers. 12,594 m³ of waste timber is collected for processing, ensuring the long livelihood and eventual self-management of the workshop. DKP also runs a compost processing plant, recycling the municipal organic waste, at the dump site.

For more information, visit: www.undp.or.id

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