

Planning plantation rezoning for impact mitigation in tropical peatlands

Aljosja Hooijer, Ronald Vernimmen; Deltares

Tropical peatlands were formed under dense rainforest cover in waterlogged or inundated conditions. The peat will be lost rapidly when deforested and drained, resulting in carbon emissions and fire risk. As the base of the peat is around Sea level, continued loss of peat will eventually return the land to permanent flooding. Plantation development on peat in Indonesia and Malaysia in recent decades has prioritized short term production and insufficiently mitigated these long-term impacts and risks.

Asia Pulp and Paper within its concessions in Indonesia manages nearly a million hectares of peatland, over half of which is converted to Acacia pulp wood plantation. Under its Forest Conservation Policy (FCP) commitment in 2013 APP has decided to investigate options for impact mitigation, supported by technical agencies including Deltares.

A major obstacle to management improvement on peat in the past has been a lack of data and understanding of peatland functioning and condition. Over 2014-2017 we have therefore focused on measuring conditions and creating maps and models. Key in this has been airborne LiDAR that was collected since 2014, over an area exceeding 7 million hectares of lowland including peatland in East Sumatra and West Kalimantan. Combined with field surveys, LiDAR data was used for elevation models, peat thickness maps, water depth assessments, flood maps and impact assessments. A field monitoring system and database system for water levels was also set up that now allow APP to better understand conditions in many thousands of locations on peat.

In parallel to improving data availability, pilot studies were initiated that will provide the basis for larger scale management improvements. Pilots include retiring 7,000 hectares of productive Acacia plantation in South Sumatra and Riau to natural forest, constructing over 5,000 compacted peat dams in boundary canals between plantation and peat swamp forest to start bringing up water levels, and creating trial areas for alternative tree crops that are tolerant to high water levels. Difficulties and opportunities in raising water levels in peatlands and protecting forest are better understood now, allowing targeted interventions. Work is ongoing towards a full rezoning plan for all APP supplier concessions that contain peatland. The objectives of the zoning are to create large (>30% of dome area) water storage areas with natural or near natural high water levels on top of all peat domes, which is necessary to improve control of water levels on lower slopes, and to better protect remaining peat swamp forest applying buffer zones within the concessions. This includes stepwise conversion to alternative tree crops, and additional retirement of plantations in the most sensitive areas bordered by peat swamp forest.