IPEWG Meeting Summary Notes

6 – 10 Jun 2022

Overview

From 6 to 10 June 2022, IPEWG members were in APRIL's operations in Pangkalan Kerinci, Riau, Indonesia. This was the first in-person meeting and engagement between IPEWG members as well as members of APRIL's management given the COVID19 pandemic that began in 2020. The following are the key highlights from the discussions that spanned across several presentations, onsite visits including an overnight stay at the RER Eco-Research Camp, as well as dialogues with members of APRIL management. During the course of the five days, IPEWG members also had several meetings and interactions with members of APRIL's Stakeholder Advisory Committee (SAC).

IPEWG Members – Dr Ruth Nussbaum (Coordinator), Prof Supiandi Sabiham, Prof Sue Page, Prof Chris Evans, Prof Dwi Astiani

APRIL– Praveen Singhavi, Lucita Jasmin, Noel Myburgh, Mark Andrew Holmes, Jamiatil Fajri, Sofyan Kurnianto, Ucin Muksin

SAC – Jeff Sayer (Co-Chair), Ida Bagus Putera Parthama (Co-Chair), Dr Neil Byron, Rod Taylor

RER – Brad Sanders, Nyoman Iswarayoga, Prayitno Goenarto

IPEWG Secretariat – Craig Tribolet, Aldo Joson

IPEWG Phase IV

Building on the work that was done for the first three IPEWG Phases, IPEWG members proposed the following priorities for Phase IV.

Broadly, IPEWG seeks to support two APRIL2030 targets of net zero from land use and improved fibre productivity on peatland, as well as helping to address the challenges inherent in trying to meet both:

a. Net Zero: IPEWG will focus on GHG emissions and actions to reduce these
b. Improved fibre productivity on peatland: IPEWG will focus on production and yields and interactions with hydrology on peatland

More specifically, IPEWG's Phase IV work will be divided into these three priority areas

I. Research and scientific understanding

a. Continuing to build scientific understanding of emissions, subsidence, fire, species and impacts of water management on production and yields to support APRIL's delivery of its net zero and improved fibre productivity targets

II. Interaction with ongoing peatland operational activities

a. Work actively with relevant staff on the incorporation of improved scientific understanding into:
    - Plantation operations on peat in APRIL-managed plantations
    - Plantation operations on peat for open market suppliers
    - Management of RER and other conservation areas on peatland
    - Opportunities for restoration and rehabilitation of degraded peatland areas

b. Identifying, supporting, and discussing measures to reduce GHG emissions and increase carbon sequestration

III. Communication and outreach

a. Supporting further scientific publications and outreach to and capacity building of local scientists

Engagement with APRIL Stakeholder Advisory Committee (SAC)

During the five days, there were several interactions with SAC including a formal meeting and dinner hosted by APRIL Senior Management. There was mutual acknowledgement and appreciation of the support that APRIL has given as well as the impressive growth of the Peatland Science team over the years. Both groups agreed to further strengthen collaboration and provide regular updates.

Lucy acknowledged and thanked both groups for their continued contributions. She specifically thanked IPEWG for its role in broadening the value of APRIL peatland science for operations in addition to contributing to the global scientific conversations on tropical peatlands. She also assured both groups that as APRIL continues to improve its fibre productivity, the company will always abide with commitments made in its Sustainable Forest Management Policy while also working to achieve APRIL2030 targets. Lucy also noted that she looks forward to collaborating with IPEWG for more pro-active communications of both our scientific research as well as ensuring that productivity and net zero goals are not mutually exclusive.

Action point

1. IPEWG to discuss with SAC on opportunities to strengthen collaboration as well as improve regularity of updates.
2. APRIL to work with IPEWG on communication of scientific research.

Peatland Science Research, Research Collaborations, and Ongoing Trials

Pak Sofyan of the APRIL Peatland Science Team shared the progress of several scientific research papers and their publication plans. These included the hydrological modelling in Pulau Padang, transpiration measurement in Acacia plantation, impact of different groundwater levels on Acacia plantation growth and aquatic biogeochemistry. IPEWG members also visited the ongoing water table trials field site.

During both the presentation session and the onsite visit, IPEWG members shared feedback and suggestions on how to refine the methodology or analysis of the gathered data.

Below are APRIL key observations and IPEWG feedback for each research topic:

1. Hydrological modelling in Pulau Padang

a. Key observations
   The impact of land cover changes on water balance components using two different scenarios of subsidence rates (constant vs declining rate) shows similar results.
b. No further comment from IPEWG.

2. Transpiration measurement in Acacia Plantation
   a. Key observations
      - The within and among tree variability of sap flow velocities should be accounted for once trials are upscaled from tree to stand-level transpiration rates.
      - Transpiration is dominantly controlled by atmospheric condition rather than groundwater level variability
      - For water management perspective, the tree density is strongly controlled by the transpiration rates at the stand level.
      - Those key points are not conclusive since statistical analysis is in progress and more data will be added
   b. IPEWG feedback
      - To assess the 'within variability' of sap flow, it requires additional data to have more robust statistical analysis
3. Impact of different groundwater levels on plantation growth
   a. Key observations
      - The mortality rates in areas with GWL 40 cm was the highest at the age of 42 months
      - The diameter at breast height and mean height were comparable for all groundwater level treatments.
      - The mortality rate is the controlling factor in determining biomass accumulation and mean annual increment (MAI) of Acacia plantation.
      - Those key points are not conclusive since the data collection are in progress to cover full rotation of plantation.
   b. IPEWG feedback
      - To evaluate the mortality rate in other plantation areas with similar shallow groundwater levels.
4. Aquatic biogeochemistry
   a. Key observations
      - The concentration and export of Dissolved and Particulate Organic Carbon (DOC-POC) in/from Acacia plantation were significantly higher than natural forests
      - The presented data is not conclusive since it was only from nine months of measurements. The monthly water sampling will continue to 2024 to cover seasonal and interannual variability of fluvial carbon concentration and export.
   b. IPEWG feedback
      - Assess the origin of the dissolved organic matter by using ^{14}C radiocarbon dating analysis (i.e. modern vs. older C sources).

5. Evaluate impact of land cover types on hydrological processes
6. Monitor transpiration of Acacia plantation at different groundwater levels
7. Investigate different groundwater levels on plantation growth with link to nutrient dynamics

a. Water table trials. During the onsite visit, the Peatland Science Team showed the results of various water table trials and their effect on the growth of acacia trees. IPEWG members suggested for the next round to plant native species in the buffer zone as a way to protect the trees from wind damage that was observed in the trial site.

8. Investigate impact of acacia plantation on aquatic biogeochemistry

IPEWG members praised the capabilities of the Peatland Science Team as well as APRIL's commitment to build its understanding of peat and peatland science.

Recommendations
Nil

Action point
1. APRIL Peatland Science Team to follow-up with IPEWG members on how to refine methodology and/or analysis of gathered data.
2. APRIL to provide more information on how peatland science informs plantation operations

Net Zero and GHG Emissions

APRIL's Peatland Science Team presented the 2021 GHG inventory including Scope 1, 2, 3 and biogenic carbon emissions and removals. IPEWG members shared their perspectives as well as views from ongoing discussions including GHG protocols, avoided emissions, and in-setting vs off-setting.

IPEWG feedback
- APRIL to explore including the avoided emissions from restoration and conservation areas
- APRIL to consider biochar small scale collaboration trial with Prof Chris Evans.

IPEWG members wanted to understand implications of emissions data/balance on planning/ops given demand for greater fibre productivity. How is APRIL working towards an optimal balance of emissions reduction and fibre productivity? These items will be further discussed in subsequent meetings.

Recommendations
1. APRIL to compare other forestry companies perspectives/interpretations on GHG protocols
2. APRIL to continue to explore higher water tables at conservation areas for their impact on the balance of greenhouse gas emissions (e.g. lower CO_2 and but potentially increased CH_4 emissions)
3. APRIL to consider biochar small scale collaboration trial with Prof Chris Evans. See if biochar can be used in conservation parts of the estates (given perceived paper/wood quality concerns).

Action point
Nil

APRIL Operations & Planning

APRIL operations presented updates to canal construction plans that have received input from IPEWG (ie. fire break canals, water management canals, etc). Explaining why the development of the canals were installed, APRIL said that apart from delays due to COVID19-limitation of movement, the company wanted to ensure that contractors had the right licenses, followed safety rules, and that communities were always pre-informed before operations commenced.
IPEWG members also visited APRIL's several operations sites, including a harvesting area as well as water management structures in nearby estates. One particular site is in the Kukus area where communities have requested APRIL to help with the river maintenance to facilitate better flow rates during high water level events. APRIL commissioned the help of a local university (University of Riau) to facilitate community engagement as well as find mutually beneficial solutions. One of the proposed solutions was to expand several canal areas as well as expanding the rehabilitation of open and conservation areas in Kukus.

IPEWG members appreciated the efforts to ensure legal compliance, safety regimes, and the pro-active communication with the communities. Members also appreciated APRIL's success in managing its water tables by zoning its plantations into manageable areas as well as investing in research on how to leverage technology and new materials for more efficient water management structures. IPEWG members also noted that in previous visits, APRIL shared that it was doing trials where native species were planted near water features as a way to better manage water flows.

IPEWG members see opportunities to further optimize the system of consultations on operational plans and include landscape issues emerging from them. Ie. Apart from firebreak canals, what other solutions can be developed to address fire risks and encroachment? What landscape-level risks can be identified and solved from canal management? Further discussions on these topics will be scheduled in subsequent meetings.

Recommendations

1. APRIL to provide additional information in the maps shared with IPEWG for their review, including:
    a. Satellite images of areas of interest
    b. Location contexts (ie location vis-à-vis Sumatra/Indonesia)
    c. Distinguishing between water management structures and canal blockings

Action points

1. Discuss with SAC re consultation role (see SAC section above)
2. Explore rehabilitation, conservation area re Kukus
3. Share data for native species trial mentioned in previous visits

RER Eco-Research Camp

IPEWG members visited RER Eco-Research Camp, including the peatland science lab, Serkap River, and the HCV forest. RER ecologist Prayitno also shared current and upcoming research projects as well as ongoing collaborations with various global universities.

IPEWG asked on the impact of the canal blocking on GHG sequestration in RER. Observations indicate the contribution is insignificant.

The stay at the Eco-Research Camp also provided the opportunity for IPEWG members to watch "Frontier Sumatra", a documentary of the RER's efforts to save one of the most vital and intact peatland forests in the country. IPEWG members expressed their appreciation for both the documentary and APRIL's continuing commitment to protect and restore the area.

Recommendation

1. APRIL/RER to explore other opportunities to showcase Frontier Sumatra to a broader base of Indonesian stakeholders including schools, universities, and research centres
2. RER to consider several suggestions made regarding ongoing experiments for the next round, including differentiated camera trap placement for species gradients as well as to compare HCV areas or fragmented areas within the plantation landscape

Action point

1. IPEWG to continue to work with APRIL to identify, discuss, and support efforts that will decrease emissions and increase sequestration of GHGs in conservation and restoration areas

IPEWG Membership

Given Prof Fahmuddin Agus' resignation, IPEWG is one member short. There were discussions on who may be a potential replacement for Prof Fahmuddin but also to potentially include a peatland scientist with a strong expertise on ecology and biodiversity.

Action point

1. IPEWG and APRIL to continue to monitor and keep in touch with Prof Fahmuddin Agus and see if he can re-join IPEWG before the end of the year. IPEWG and APRIL to re-consider if we can proceed with new IPEWG member by end-Q3

Meeting with APRIL Senior Management

During the closing meeting with APRIL Senior Management, APRIL Senior Management commended IPEWG's members continued support and guidance for peatland related research, publication of scientific papers, as well as inputs to operational activities on peatland.

In turn, IPEWG members thanked APRIL for its continued support and looked forward to working towards the priorities proposed in Phase IV.

Recommendation

Nil

Action points

1. APRIL to brief IPEWG members with its due diligence system
2. IPEWG to continue to provide feedback on current and upcoming projects to fulfil APRIL's net zero emissions from land use target
3. IPEWG to resume publication of its minutes of the meeting online as well as summary meeting notes from online/Zoom calls during the pandemic (ie from 2020 to 2021).