Anthropogenic Fires in the Ramu-Markham Valley: Underlying Causes and Motivations

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1. Introduction

- Anthropogenic fires are common in Ramu-Markham Valley (RMV), Papua New Guinea (PNG)

- Relatively flat landform, suitable weather + climatic conditions and fuel availability from *[Imperata cylindrica](https://en.wikipedia.org/wiki/Imperata_cylindrica)* (Kunai grass) causes Anthropogenic fires to thrive.
1. Introduction

• A problem in Landscape Management (Local Food Gardens, Commercial Plantations & Restored Forests)

(a) Sugar Field Fire (b) Oil Palm Block Fire
1. Introduction

- ACIAR & RAIL Partnership in Reforestation through Community Forestry Project in Ramu-Markham Valley (Enabling Community Forestry in Papua New Guinea)

(a) & (b) Fire in RAIL Reforestation area
1. Introduction

- Strategies to Manage this Problem
- Better Understanding
- Underlying Causes and Motivations
Problem Statement

• Absence of previous systematic study in Relation to Anthropogenic fires in Ramu-Markham Valley.

* Note that this study is an exploratory scoping study
2. Objective

- Develop a Typology of Causes and Motivations related to Anthropogenic Fires in Ramu Markham Valley
3. Methodology

Figure 4. Map of Study Area. Only 5 villages shown, the sixth one isn’t shown (Google Map, Landsat, February 8 2019)
3. Methodology

Data Source

RAIL
- Staff Interview (Purposive Sampling, Semi-structured interviews, open ended questions)

Local Villages
- Informal Survey (Snowball sampling, Sampling was purposive, semi-structured interviews with open ended questions)

Qualitative & Quantitative
4. Results and Discussion

- Fire Incidents in Ramu Agri Industries Ltd operations (RAIL Fire Reports 2016-2018)
## 4. Results and Discussion

### RAIL Staff Interview

<table>
<thead>
<tr>
<th>Typology of Fire Lighting events</th>
<th>Specific Motivation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliberate/Natural Resource Management</td>
<td>Fires lit due to Natural Resource Management (NRM)</td>
</tr>
<tr>
<td>Deliberate/conflict</td>
<td>Due to Conflicts</td>
</tr>
<tr>
<td>Amusement (other)</td>
<td>Fires lit for amusement or other unspecified individual or cultural reasons</td>
</tr>
</tbody>
</table>
## 4. Results and Discussion

### Local Village Interview

<table>
<thead>
<tr>
<th>Typology of Fire Lighting Events</th>
<th>Specific Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>NR Management</td>
<td>Hunting</td>
</tr>
<tr>
<td></td>
<td>Slash and Burn Agriculture</td>
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<td></td>
<td>Tree regeneration for Usage</td>
</tr>
<tr>
<td></td>
<td>Kunai Grass Regeneration Usage</td>
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<tr>
<td>Conflict (Vengeance, Jealousy, Disagreement)</td>
<td>Lighting of fires in gardens, agroforestry plots/cash crop plots</td>
</tr>
<tr>
<td></td>
<td>Lighting fires in RAIL operational sites</td>
</tr>
<tr>
<td>Amusement</td>
<td>Unspecified motivations (“cultural”/amusement) lighting of fires in areas near Villages</td>
</tr>
<tr>
<td></td>
<td>Unspecified motivations - burning beside/in RAIL Operational Areas</td>
</tr>
</tbody>
</table>
5. Conclusion & Implications

• No reports of non-anthropogenic fires (Natural).

• Variety of causes behind lighting of fires. The “just for fun” stereotype factor is certainly exaggerated.

• Most fires are lit for a **PURPOSE**, either **POSITIVE** or **NEGATIVE**.

• Uncontrolled fires, causes unintended damage.
5. Conclusion & Implications

• Common reasons of fire lighting through NRM; clearing land for gardens, lighting fires in grassland for hunting or controlling grass.

(a) & (b) Fires lit for NRM
5. Conclusion & Implications

Typology of Causes

- Typology of Fire Lighting Events
  - NR Management
  - Conflict (Vengeance, Jealousy, Disagreement)
  - Amusement
• Future research aimed at quantifying extent of various types of causes of fire

• However, selection of interviews would be problematic

• Research should focus on understanding local practices of fire management and collaborative research with people involved in establishing forest or agroforestry plots. Greater cooperation with local communities.
Acknowledgements

• RAIL Staff for providing information and Data
• 6 Villages in Ramu Markham Valley; Bopirumpun, Sankiang, Sausi, Marawasa, Atzunas