

Prospects for a sustainable and just charcoal sector: multidisciplinary evidence from Mozambique

Casey Ryan², Luis Artur¹, Geoff Wells², Aide Farao¹, Jone Fernando Jr.¹, Peter Hargreaves², Natasha Ribeiro¹, Sam Bowers², Eduardo Castro Jr.¹, Janet Fisher²

¹Universidade Eduardo Mondlane, Mozambique, ²University of Edinburgh, UK



Key questions

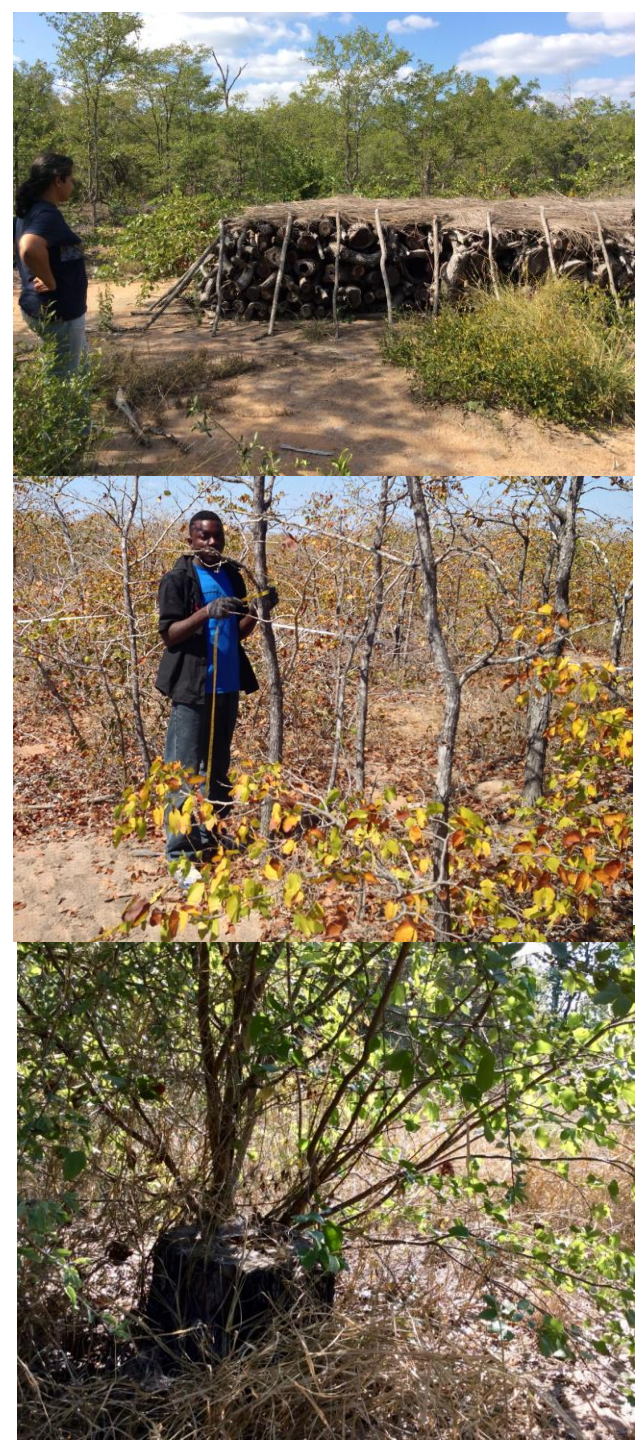
Given the (very typical) policy neglect and the livelihood importance of the charcoal sector...

What can we learn from contrasting experiences over the last 8 years in Mozambique's main charcoal frontier?

1. How have things changed?

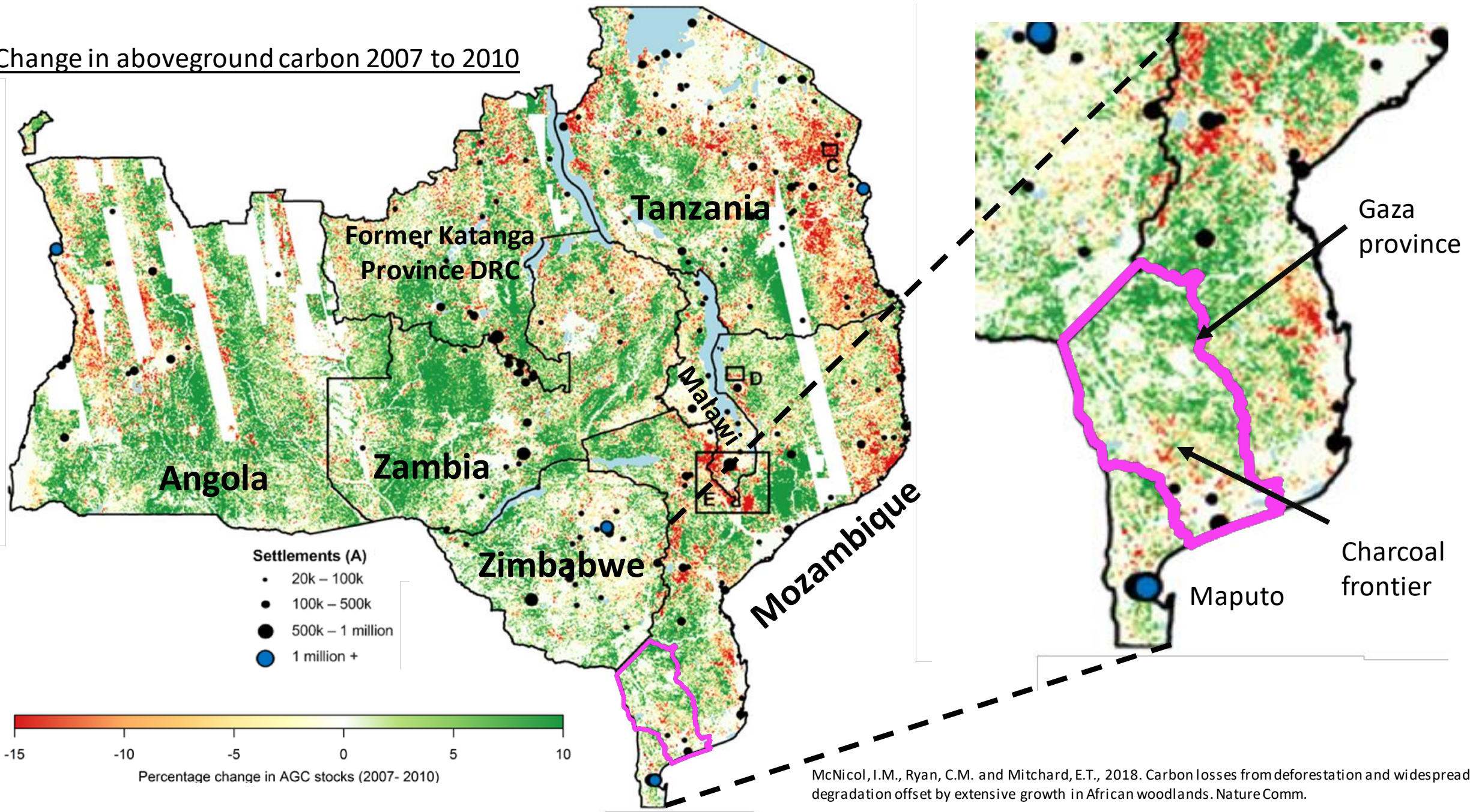
- Rural livelihoods (hh panel survey; 2014, 2021)
 - Landscape / vegetation (remote sensing, field ecology)
 - Charcoal governance arrangements (focus groups, value chain analysis, licensing data)
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- COVID – see talk at 2pm by Judith Krauss & Eduardo Castro

2. How might the charcoal sector become ecologically sustainable and a good sector to work in?



Spatial context

Change in aboveground carbon 2007 to 2010



Social context

- Land owned by the state, but concessions or simple licenses permit exploitation
- Licences issued to local associations and external operators by provincial government (with community consent)
- Villages entitled to 20% of the licence fees
- Value remaining with producers:
 - Southern Mozambique, ~10% (Baumert et al 2016)
 - Lower than many other value chains (e.g. 33% Kambewa, 2007)

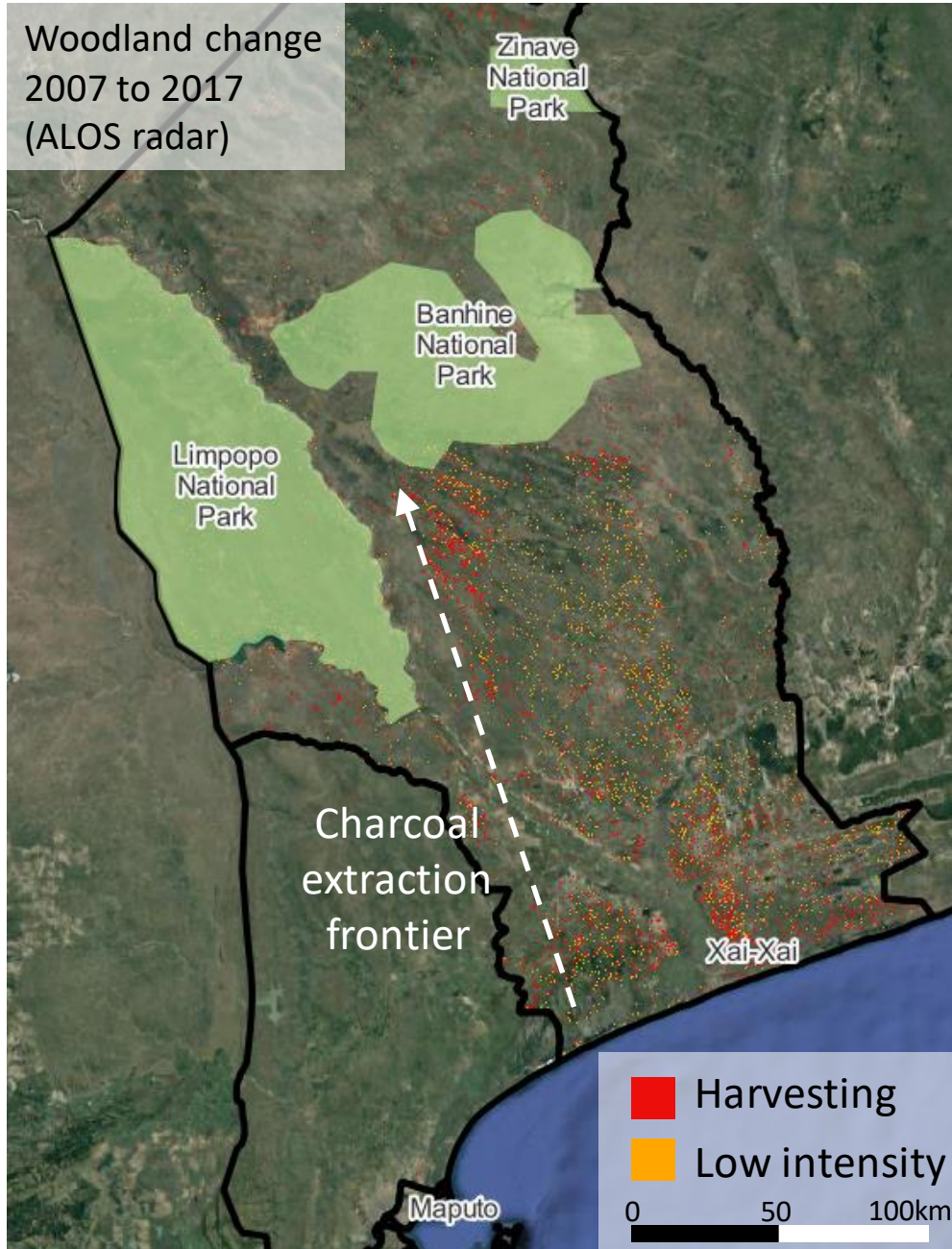


Baumert, S., Luz, A. C., Fisher, J., Vollmer, F., Ryan, C. M., ... Macqueen, D. (2016). Charcoal supply chains from Mabalane to Maputo: Who benefits? *Energy for Sustainable Development*, 33, 129–138.

<https://doi.org/10.1016/j.esd.2016.06.003>

Kambewa, P., Mataya, B., Sichinga, K., & Johnson, T. (2007). Charcoal The Reality: A case study of charcoal consumption, trade and production in Malawi. Small and Medium Forestry Enterprise Series, International Institute for Environment and Development.

The case of Gaza province, southern Mozambique: phase 1 results

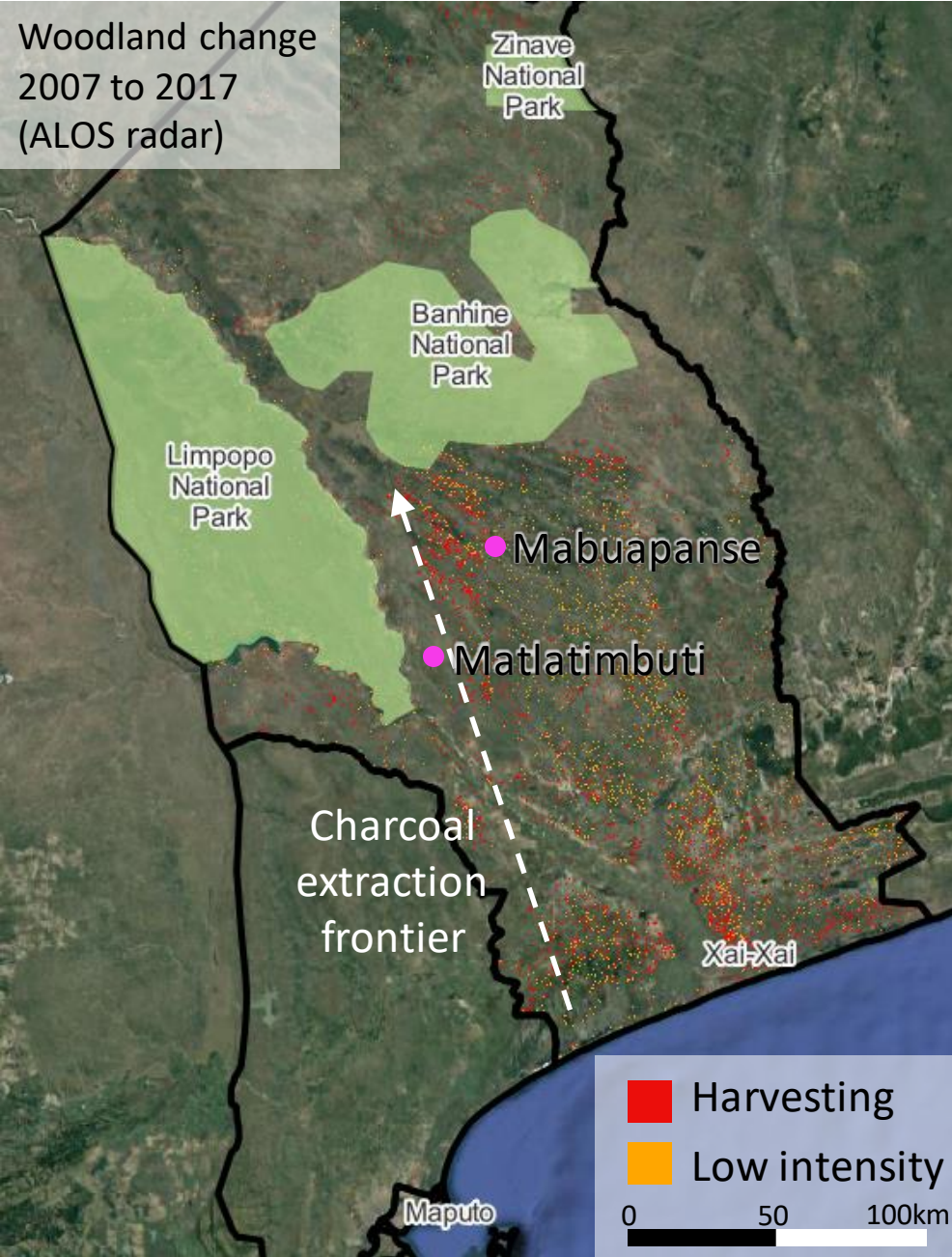


- Extraction frontier from Maputo city at ~20 km/yr into *mopane* woodlands (Luz et al 2015)
- Charcoal has become the main income in many villages, but follows a boom and bust pattern
 - Income: \$1k- \$10k per year during the “boom”
 - But few sustained improvements in wellbeing or assets (Vollmer et al, 2017)
- Harvesting over-concentrated
- Local producers not well organised; lack of bargaining power in the value chain (Baumert, et al 2016).
- But variation at village level: so **what can we learn from experience of different villages?**

Luz, A. C. et al. Charcoal production and trade in southern Mozambique : historical trends and present scenarios. in World Forestry Congress XIV (2015). doi:10.13140/RG.2.1.1677.8729

Vollmer, F. et al. Charcoal income as a means to a valuable end: Scope and limitations of income from rural charcoal production to alleviate acute multidimensional poverty in Mabalane district, southern Mozambique. World Dev. Perspect. 7–8, 43–60 (2017).

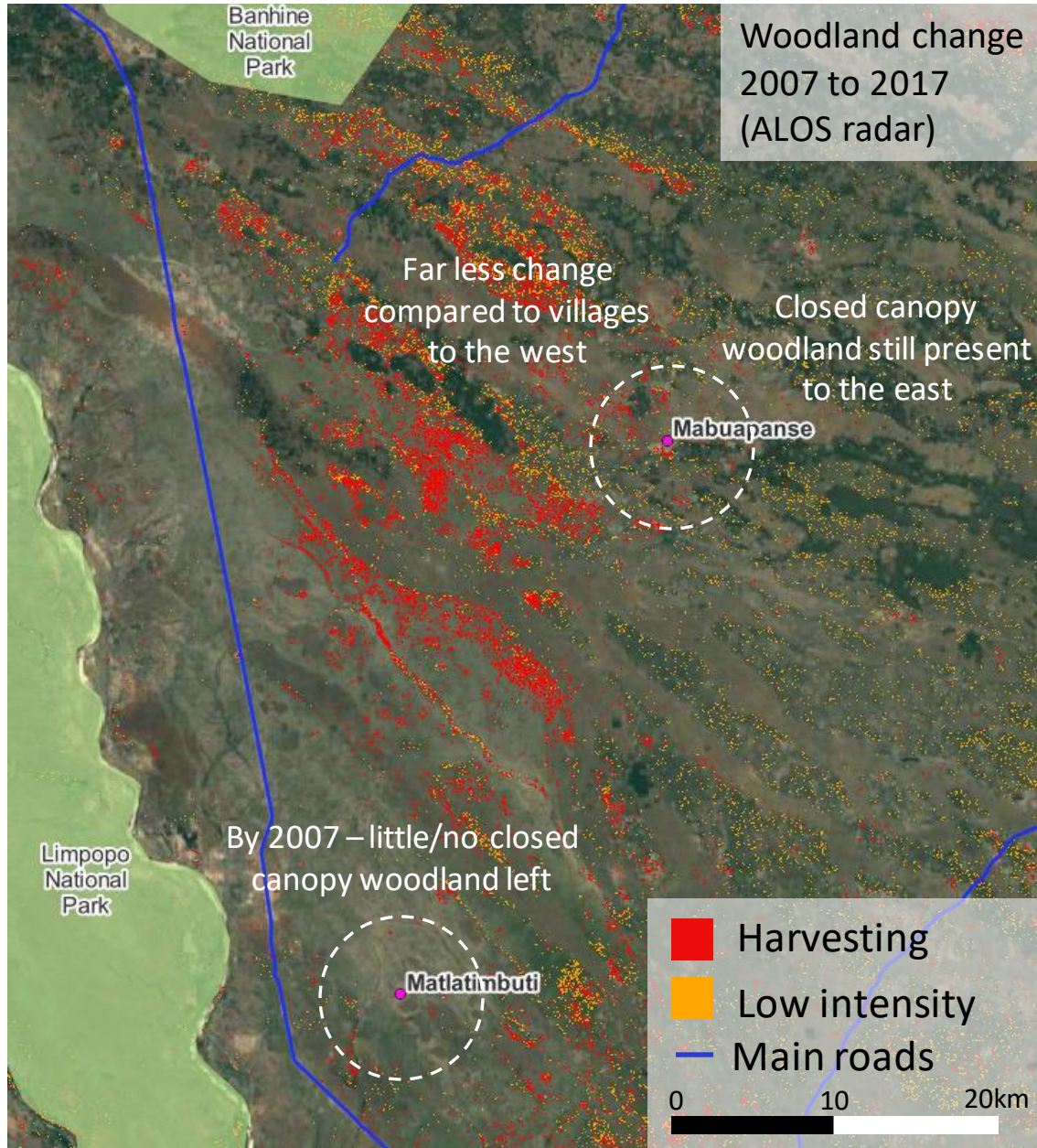
Phase 2: Landscape and livelihoods 2014 to 2021



Two cases of villages with contrasting governance in Gaza Province:

Madlatimbuti	Mabuapense
Top down, standard case	Unusual: Bottom-up community control
Govt. licensed external producers (chainsaws, hired labour)	Govt. licensed producers expelled by the local community
No local association or community leadership	Motivated by concerns of overharvesting and few benefits locally
External producers came and harvested “without soul”	Community now has a licensed association, legal rights (DUAT), and map of the production zone

Case comparison: woodland change



1. Top-down licencing (top-down): Madlatimbuti:

1. Field observations: widespread harvesting, even of small mopane trees
2. Radar: very little biomass left – “bust”
3. High kiln density.

2. Bottom-up community control: Mabuapanse

1. Field observations: widespread harvesting, but areas of mopane remaining
2. Radar: less change and higher biomass remaining than other areas – still producing
3. High kiln density.

Case comparison: key wellbeing results

- Overall similar wellbeing outcomes despite different experiences of the charcoal sector
- “Post-boom” Madlatimbuti (top-down) had slightly worse outcomes than Mabuapanse - charcoal income invested in water and sanitation infrastructure
- Poor food security still pervasive
- Problems exacerbated for different reasons:
 - charcoal scarcity in Madlatimbuti (top down, bust)
 - remoteness in Mabuapanse (community control)



Case comparison: social learning

- What would people from Madlatimbuti and Mabuapanse have done differently?

“Take action to stop external operators before they arrive and do damage”

“Create local associations and leaders responsible for managing production”

“Create more jobs”



Lessons for a sustainable and just charcoal sector

In Gaza, Mozambique:

1. The current formal licencing regime is not preventing degradation, nor sufficiently benefiting some communities: Mabuapanse felt obliged to go it alone
2. Greater community control can help improve resource use and wellbeing: however, only marginally better outcomes
3. The drivers of wellbeing are much larger than just charcoal and, overall, wellbeing outcomes were similar
4. Even examples of better governance (Mabuapanse) are *reacting* to, rather than *anticipating* and preventing social and ecological problems

For a sustainable and just charcoal sector:

5. Licencing and legality helps, but not a panacea; legal ≠ sustainable harvesting
6. Local control ≠ pathway to prosperity
7. Development strategies should support ways to *productively* invest charcoal income.
8. Governance frameworks: i) need to meaningfully link local control to license system; ii) need to anticipate and prepare.

Thanks!

Thanks!

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