

Comment on Doggart and Meshack (2017)¹ and the potential for local management and conservation of natural forests in Tanzania

Submitted by:

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Analysis of Doggart and Meshack (2017): The article presents a number of arguments pertaining to charcoal production and sustainable forest management that we will revisit and comment upon before providing our recommendations:

Argument 1: Charcoal is not a driver of deforestation. We agree to this argument. While charcoal can certainly contribute to forest degradation (Woollen et al. 2016), there is no evidence that charcoal production is a driver of deforestation per sé. Rather, charcoal production adds economic value to land with trees on it and this value can, if policies and social factors allow for it, incentivize forest protection.

Argument 2: Charcoal is important to rural livelihoods, poverty alleviation and mediation of shocks and risks faced by rural households. Research from Tanzania (Lund & Treue 2008) and elsewhere in Southern and Eastern Africa (Schure et al. 2013) corroborates this argument. There is, of course, also research showing that different types of individuals produce charcoal for different reasons, i.e. charcoal production is not the exclusive domain of the poorest nor done only to absorb slack-season labor or counter failed agricultural harvests (Jones et al. 2016).

Argument 3: The national demand for charcoal can be supplied through sustainable woodland management. This argument is backed up by statistics on charcoal demand and assumptions regarding growth of the natural forest resource and conversion factors from raw wood to charcoal. Given the uncertainties associated with the estimates and assumptions² needed to produce such an overview – and that charcoal is not the only use of wood by Tanzanian citizens - we hesitate to support this statement. The overall supply situation for wood in Tanzania and how it compares to demand on multiple factors.³

¹ Doggart, N. and C. Meshack (2017). The Marginalization of Sustainable Charcoal Production in the Policies of a Modernizing African Nation, *Frontiers in Environmental Science*, 5: 27. <http://journal.frontiersin.org/article/10.3389/fenvs.2017.00027/full>

² A 24 year rotation could, for instance, easily be too short in dry miombo woodlands to ensure buildup of biomass.

³ With a population of 57 million people and about 48 million ha forestland (NAFORMA, forest and woodland) there is about 0.8 ha forest per capita in Tanzania. With a per capita wood consumption of 1-1.5 m³ annually, these 0.8 ha/capita need to produce at least 1 m³/ha on average annually (which is not a lot at the coast but quite something in the dry inland). There are also plantations and trees planted on farmland, but also lots of forest-covered land that is either not suitable for wood fuel production or protected from use. So there seems to be good reason for having policies aiming to increase tree planting and promote private woodlots/plantations, charcoal or not.

Argument 4: There is a competition over land for agriculture and forest in Tanzania. We find that this argument overlooks that this competition is affected by policies on alternative land uses. For instance, the rapid growth in areas under wildlife conservation in Tanzania – e.g. WMAs – which take large swaths of land out of productive uses, such as livestock grazing and charcoal production. Consequently, these activities are displaced elsewhere, thereby increasing the competition for land in remaining areas. In relation to this, it is worth noting that many wildlife conservation areas were originally created by displacing rural communities from fertile agricultural areas, e.g. the Selous Game Reserve (Neumann 1998). Similarly, policies that support small-scale farmers could result in higher yields, lower post-harvest losses, and higher sales profits from agricultural produce, which would alleviate the pressure to put more land under agriculture to secure a minimum subsistence for rural households, especially if linked to careful and truly participatory land use planning.

Argument 5: A lack of data on the trade in charcoal inhibits policy formation. We disagree. Lots of research has been done on charcoal trade in Tanzania (Beukering & Kahyarara 2007; The World Bank 2009; Sander et al. 2013) and it seems unlikely that more research will change the overall image of the trade that emerges. Furthermore, the recommendations from research that has been done have been largely ignored so far.

Argument 6: Support to (more) sustainable charcoal production techniques is needed. We disagree. While research clearly demonstrates that substantial gains in charcoal production efficiency are possible through novel techniques, the experiences with implementing these outside of controlled experiments are not good. There is a long history in Tanzania and beyond of attempting to create technical fixes to charcoal production through improved kilns etc. By and large these efforts have all failed to supplant existing locally adapted techniques. Rather than seeking a technical fix – i.e. higher efficiency of kilns – support to sustainable forest management must target reforms of regulations that bias against sustainable forest management more broadly.

Argument 7: Management plans are a prerequisite for sustainable charcoal production. While correct in principle, the practical implications of this line of thinking can be problematic. The presence of a plan does not guarantee that it will be implemented. Yet, the combined effect of complicated technical requirements and the associated dependency of decentralized forest managers, e.g. village governments/environmental committees, can and has resulted in, de facto, recentralization of decentralized forests (Ribot 2004, Ribot et al. 2006).

Overall recommendation: Given the importance of charcoal as an energy carrier it is relevant to explicitly include the objective of sustainable charcoal production in national policy documents. However instead of support to charcoal production techniques and calls for national-level charcoal production management planning there is a need to **support and enhance village governments’ rights to land and natural resources and apply policies and practices of implementation that favor local management and conservation of natural forests**

This is needed because **the current land and forest legislation creates clear disincentives for local conservation of natural forests** in several ways:

1. First, the forest and land legislation – in particular its interpretation in practice – allows central government forest officers to allocate licenses to harvest trees on village general land with minimal benefits accruing to villagers (Sungusia & Lund 2016).
2. Second, the emphasis on detailed planning and harvesting regulations within CBFM forests – and the complete absence of such considerations for non-reserved forests on village land - concentrates demand for timber on unreserved forest areas, which diminishes the value of reserving forests in the eyes of villagers, while increasing pressure on unreserved forests that are harvested without any considerations for sustainability (Sungusia & Lund 2016).
3. Third, the costly and bureaucratic planning requirements for CBFM – and the unclear legal implications for local autonomy to decide future land uses associated with CBFM – creates disincentives for CBFM locally (Green & Lund 2015) as well as hindering its wider implementation by making its implementation prohibitively costly to support for forest officers (Lund 2015; Scheba & Mustalahti 2015). Alternative avenues to prevent overharvesting could include accessible and anonymous avenues to report to the district forest office about apparent overharvesting. This could potentially also support local accountability relations at the village level.
4. Fourth, the rapid growth in wildlife (and forest) conservation initiatives, as well as initiatives to facilitate investments in plantations and agribusiness, that all target apparently ‘unused’ village lands – and the rushed and manipulative land use planning process characterizing these initiatives (Homewood et al. 2015; Bluwstein & Lund 2016) - compel rural residents in Tanzania to protect their authority over village land by clearing unreserved forests (Sungusia & Lund 2016).

Specifically, we recommend:

1. **That villages are accorded clear and unambiguous rights to manage and benefit from (the harvesting and sale of) trees on unreserved parts of village land.** This will incentivize management and protection of such trees by the people who live closest to them and therefore are able to protect them and who benefit from any services they provide as standing trees. This includes acknowledging the status of village land – as set out in the Village Land Act of 1999 – and respecting the rights of villages to veto harvesting of trees on non-reserved areas of village land.
2. **That planning and harvesting regulations pertaining to CBFM forests are radically simplified** to make its implementation affordable for forest offices and villages alike, and to align planning requirements with the uses and benefits obtained from forests. For dry miombo forests used mainly for woodfuel extraction and grazing, this would imply a very simple and cheap management approach, whereby overall sustainability of management is ensured by, for instance, periodic forest walks coupled with analyses of freely available GoogleEarth imagery for the forest in question.

3. **That licensing, permit, and taxation procedures for charcoal are simplified in ways that make production, transport and sale of charcoal more readily available also to villagers.** This will: (i) support locally-controlled charcoal production and imply higher profit retention from charcoal in rural areas, which, in turn, will incentivize protection of forests and support poverty alleviation and; (ii) create more competition on the charcoal market which may reduce profits for traders and result in (slightly) lower market prices.
4. **That legal guidelines are issued for village land use planning processes, which specify clear minimum requirements for processes** that ensures that sufficient time and effort is put into a thorough consultation process, which empowers village communities to steer and guide, rather than being steered and guided, towards a land use plan.

References

- Beukering, P. Van & Kahyarara, G. (2007). Optimization of the charcoal chain in Tanzania. *Inst. Environ. Stud. (IVM), Vrije Univ. Amsterdam, Netherlands.*
- Bluwstein, J. & Lund, J.F. (2016). Territoriality by Conservation in the Selous–Niassa Corridor in Tanzania. *World Dev.*
- Green, K.E. & Lund, J.F. (2015). The politics of expertise in participatory forestry: A case from Tanzania. *For. Policy Econ.*, 60, 27–34.
- Homewood, K., Bluwstein, J., Lund, J.F., Keane, A., Nielsen, M.R., Msuha, M.J., Olila, J. & Burgess, N.D. (2015). *The economic and social viability of Tanzanian Wildlife Management Areas.* Copenhagen.
- Jones, D., Ryan, C.M. & Fisher, J. (2016). Charcoal as a diversification strategy: The flexible role of charcoal production in the livelihoods of smallholders in central Mozambique. *Energy Sustain. Dev.*, 32, 14–21.
- Lund, J.F. (2015). Paradoxes of participation: The logic of professionalization in participatory forestry. *For. Policy Econ.*, 60, 1–6.
- Lund, J.F. & Treue, T. (2008). Are We Getting There? Evidence of Decentralized Forest Management from the Tanzanian Miombo Woodlands. *World Dev.*, 36, 2780–2800.
- Neumann, R.P. (1998). Imposing wilderness: struggles over livelihood and nature preservation in Africa. *Calif. Stud. Crit. Hum. Geogr.* ; 4, xii, 256 .
- Ribot, J.C. (2004). *Waiting for Democracy: the politics of choice in natural resources decentralization.* World Resource Institute. Washington DC. 154 pp.
- Ribot, J.C., Agrawal, A. and Larson, A.M. (2006). Recentralizing while Decentralizing: How National Governments Re-appropriate Forest Resources. *World Development* 34 (11):1864 – 1886.
- Sander, K., Gros, C. & Peter, C. (2013). Enabling reforms: Analyzing the political economy of the charcoal sector in Tanzania. *Energy Sustain. Dev.*, 17, 116–126.
- Scheba, A. & Mustalahti, I. (2015). Rethinking “expert” knowledge in community forest management in Tanzania. *For. Policy Econ.*, 60, 7–18.
- Schure, J., Ingram, V., Sakho-Jimbira, M.S., Levang, P. & Wiersum, K.F. (2013). Formalisation of charcoal value chains and livelihood outcomes in Central- and West Africa. *Energy Sustain. Dev.*, 17, 95–105.
- Sungusia, E. & Lund, J.F. (2016). Against all policies: Landscape level forest restoration in Tanzania. *World Dev. Perspect.*, 3, 35–37.
- The World Bank. (2009). *ENVIRONMENTAL CRISIS OR SUSTAINABLE DEVELOPMENT OPPORTUNITY? Transforming the charcoal sector in Tanzania.*
- Woollen, E., Ryan, C.M., Baumert, S., Vollmer, F., Grundy, I., Fisher, J., Fernando, J., Luz, A., Ribeiro, N. & Lisboa, S.N. (2016). Charcoal production in the Mopane woodlands of Mozambique: what are the trade-offs with other ecosystem services? *Philos. Trans. R. Soc. B Biol. Sci.*, 371, 20150315.