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REDD herrings or REDD menace: Response to Beymer-Farris and Bassett

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ABSTRACT

Norwegian funded REDD+ projects in Tanzania have attracted a lot of attention, as has the wider REDD+ policy that aims to reduce deforestation and degradation and enhance carbon storage in forests of the developing countries. One of these REDD+ projects, managed by WWF Tanzania, was criticised in a scientific paper published in GEC, and consequently in the global media, for being linked to attempted evictions of communities living in the Rufiji delta mangroves by the Government of Tanzania, allegedly to make the area 'ready for REDD'. In this response, we show how this eviction event in Rufiji mangroves has a history stretching back over 100 years, has nothing to do with REDD+ or any policy changes by government, and is not in any way linked to the work of any WWF project in Tanzania. We also outline some of the broader challenges faced by REDD+ in Tanzania.

1. Introduction

The proposed international REDD+ mechanism has attracted a huge amount of debate in the scientific and technical literature (e.g. Stickler et al., 2009; Bond et al., 2009; Blom et al., 2010; Naughton-Treves and Day, 2012). Advocates promote REDD+ as a contribution to mitigate dangerous global climate change and support biodiversity conservation and local livelihoods (Ghazoul et al., 2010; Strassburg et al., 2012). Others suggest that, if poorly applied, REDD+ might lead to a damaging recentralisation of forest governance (Putz and Redford, 2009; Phelps et al., 2010; Rights and Resources, 2010).

Beymer-Farris and Bassett (2011) added considerable controversy to this debate. Their paper, and associated media attention, linked WWF REDD+ project activities to evictions of local communities from mangroves, suggesting this was to make way for carbon forestry projects in the Rufiji delta. This had been theorised as a potential outcome of REDD+ (e.g. Putz and Redford, 2009; Phelps et al., 2010) and as Beymer-Farris and Bassett (2011) appeared to provide 'proof of concept', their paper was widely quoted in newspapers and internet blogs in 2011 and 2012 (e.g. http://www.climate-justice-now.org/tanzaniarufiji-delta-project-still-on/, accessed 27.11.12).

To enable debate on potential positive and negative outcome of REDD+ activities globally to be evidence-based we show that eviction events in the Rufiji delta are unconnected to REDD+ implementation Tanzania, have no links to WWF REDD+ projects in Tanzania, nor any other WWF activities. To underline our argument, we outline the aims of relevant projects and we further discuss country-specific forest conservation and governance issues

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surrounding the realisation of REDD+ in Tanzania, which is primarily being implemented through Community-Based Forest Management structures (e.g. Blomley et al., 2008; Burgess et al., 2010).

2. WWF REDD+ in Tanzania and its links to national and international processes

Tanzania is a REDD+ 'fast-track' country, testing how REDD+ could function as a climate change mitigation tool within the United Nations Framework Convention on Climate Change. All REDD+ projects in Tanzania, coordinated through the national REDD+ Task Force (see www.reddtz.org, (accessed 27.11.12)), are generating information to be used when/if REDD+ policies are agreed.

Tanzania is receiving over $80 million to develop REDD+ and related climate change projects, including significant capacity building, largely from the Norwegian Government. About 30% of the Norwegian funding is being channelled through nine different NGO's, who have been responsible for the design and implementation of individual projects, among them a WWF REDD+ project (NORAD, 2011).

Initiated in January 2011, the WWF REDD+ project underwent a five month inception phase, to establish links with existing REDD+ projects, identify data gaps, and project fit. The project is fully harmonised within the coordinated national level REDD+ MRV work under the REDD+ Task Force. A conceptual diagram (Fig. 1) outlines the main elements of the WWF REDD+ project's work. Field work started in June 2011, but the project was suspended by the Norwegian Embassy for most of 2012.

3. Response to Beymer-Farris and Bassett

Referring to the work of WWF in the Rufiji delta, Beymer-Farris and Bassett (2011) make the following main claims:

1 "The Rufiji delta is listed as a WWF Tanzania REDD readiness site for REDD pilot projects, http://www.reddtz.org/images/110310/a%20map%20showing%20pilot %20areas%20for%20redd%20activities.pdf (Our Figure S1 as now removed from the site by the site managers)." – page 1, footnotes.
2 "The Rufiji delta is listed as one of six WWF Tanzania REDD readiness sites for REDD Pilot Projects. REDD+ strategies for Tanzania list the 'enhancement of state reserve lands' as a way to reverse the 'drivers' (e.g. cultivation) of forest deforestation and degradation. This is exemplified by the FBD's plans to begin a process of relocating rice farmers out of the delta"–page 5.
3 "The objective of WWF's carbon forestry projects and the Tanzanian government's eviction plans are to make the Rufiji delta "REDD ready" (Tanzanian REDD Initiative, 2010)" – page 5.
4 "This paper has focused on the politically charged issues of environmental justice in the Rufiji delta of Tanzania in the context of WWF and Tanzanian state carbon forestry programmes to make the Rufiji delta North 'REDD ready'." – page 8.
5 "District level WWF 'adaptation coordinators' oversee and enforce mangrove reforestation in the Rufiji delta north (personal communication, FBD, January 2010)" – page 5.

In the following we discuss how these claims are based on erroneous data gathered from online sources without adequate cross checking for accuracy combined with weak understanding of Tanzanian policy and the history of the Rufiji delta.

3.1. Statement 1 and 2: is the Rufiji delta a WWF Tanzania REDD+ readiness site?

The simple answer is 'No'. The WWF REDD+ project has never visited nor worked in the Rufiji delta, in mangrove ecosystems or in any of the surrounding villages studied by Beymer-Farris and Bassett (2011). The map used to stress the existence of a WWF REDD+ project in the Rufiji delta (in footnotes by Beymer-Farris and Bassett (2011)) (Fig. S1) is central to their claims, thus we have further researched its origin, and the development of all subsequent maps of REDD+ pilot projects funded by the Norwegian government. We communicated with a former consultant to the Norwegian Embassy that contracted the REDD+ projects in Tanzania (S. Milledge, by email, November 2012) and with a former member of the Tanzania REDD+ Task Force (G. Kamwenda, pers com., November 2012).

Our tracing of the origin and development of these REDD+ maps shows that the version cited by Beymer-Farris and Bassett (2011) as evidence for a WWF-REDD project in the Rufiji delta was produced in early 2009 by the National REDD Task force secretariat housed at the Institute of Resource Assessment at the University of Dar es Salaam. It was prepared before the contracts for REDD+ pilot were finalised and contains a number of errors e.g. Tanzania Forest Conservation Group (TFCG) and CARE pilots are incorrectly mapped. Arrows for WWF activities aimed to indicate that the project would measure carbon plots across different Tanzanian vegetation types, not that WWF has REDD+ projects in six different

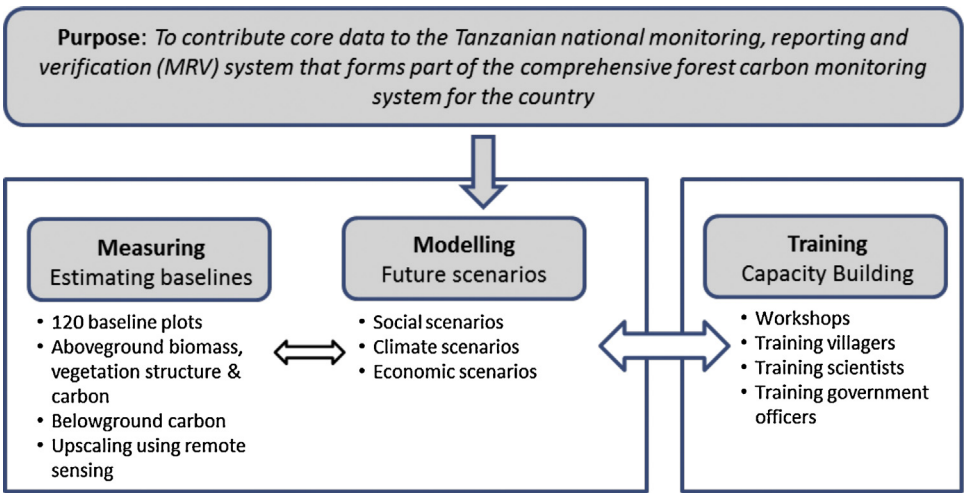

Fig. 1. Conceptual diagram of the main elements of the WWF REDD+ project in Tanzania.

locations. Our tracing further reveals that three further maps of REDD+ projects were produced between 2009 and 2011, none of which show any geographical location for WWF REDD+ projects. The latest map was produced in April 2011 and shows accurate locations of the REDD+ pilot projects working on the ground, and shows no field sites for WWF REDD+ activities (our Fig. 2; http://reddtz.org/index.php?option=com_content&view=article&id=70&Itemid=114 accessed 27.11.12).

Iterative improvement of mapping is commonplace in project management. By referencing an inaccurate map, and not cross-referencing it, Beymer-Farris and Bassett (2011) elaborated a series of false claims against WWF REDD+ activities in the Rufiji delta. A simple check of data sources and communication with key actors would have rectified this mistake, and would have dramatically changed the conclusions of the paper. This was pointed out in a formal letter to the editors of GEC in November 2011.

3.2. Statement 3 and 4: are there eviction plans to make the Rufiji delta "REDD ready"?

The simple answer is 'No'. Despite its importance for their paper, Beymer-Farris and Bassett (2011) provide no evidence for any plans to relocate communities ahead of carbon forestry projects in the Rufiji delta. Our investigations in Tanzania show that the Tanzania Forest Service has no such plans (pers com. Z. Mbwambo, November 2012). In terms of the accused WWF REDD+ project, it had nothing to do with evictions in the Rufiji in October 2011, which have an entirely separate cause (see discussion). The WWF REDD+ project started in January 2011, began field work in June 2011, and collected data from forests in the Iringa and Mbeya regions (far inland; July–December 2011), and Kilwa District along the coast (January–February 2012). Work in the mangroves of the Rufiji is planned for 2013.

Additionally, the WWF REDD+ project is not operating as a REDD+ pilot scheme (or carbon forestry programme to follow the terminology in the original paper) on the ground. Instead, the WWF REDD+ project focusses – at national scale – on gathering scientifically sound quantitative data on forest carbon storage to be used under the monitoring, reporting and verification (MRV) component of REDD-readiness (see http://www.norway.go.tz/News_and_events/agreements_and_contracts/). Carbon baseline measurements (Anglesen et al., 2011) are being established in 120 plots across the major forest ecosystems and environmental and management gradients in Tanzania (Burgess et al., 2012; Table S1).

3.3. Statement 5: is mangrove reforestation in the Rufiji delta enforced by WWF 'adaptation coordinators'?

Again the answer is 'No'. WWF Tanzania's project in the Rufiji delta is the Rufiji-Mafia-Kilwa Seascape (RUMAKI) programme, which is entirely separate from that working on REDD+, and is not funded by Norwegian Government climate funds. The WWF RUMAKI programme has invested substantial donor resources since 2005 to help communities in the Rufiji delta, as well as in Mafia and Kilwa Districts, secure long-term fisheries co-management rights (Mwangamilo and Mengistu, 2009; Mwangamilo and Tibaldeschi, 2011; Meela, 2012).

Under the umbrella of this programme, in June–July 2009 and April–June 2010, small-scale mangrove replanting was undertaken as a community project by 100–200 community members from 10 villages over about 70 ha of former mangrove habitat, of which around 45 ha was abandoned rice farming sites (MNRT, 2010). Characterising these voluntary community activities as having been '*enforced*' by '*WWF adaptation coordinators*' (Beymer-Farris and Bassett, 2011) is wrong by any definition of 'enforced'; it misrepresents the efforts a single extension officer, and is inconsistent with what Beymer-Farris & Bassett elsewhere rightly describe as "*The WaRufiji's … long history of resistance to outside influences*".

This community-led mangrove planting was monitored for survivorship in December 2010, six months after the second planting was completed; 42 out of 70 one-hectare plots (60%) had

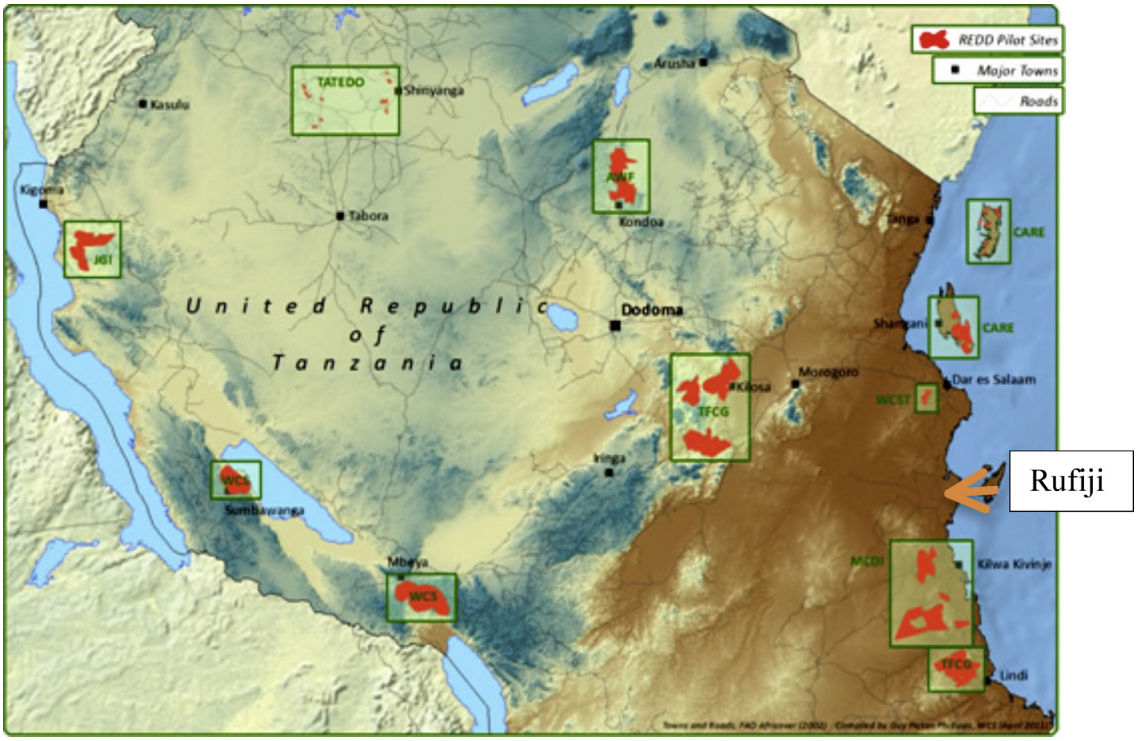

Fig. 2. Location of REDD+ pilot projects in Tanzania (http://www.reddtz.org, accessed 01.04.12) shown in green outline boxes, with separate black-outline box and arrow showing location of Rufiji delta. (For interpretation of the references to color in the artwork, the reader is referred to the web version of the article.).

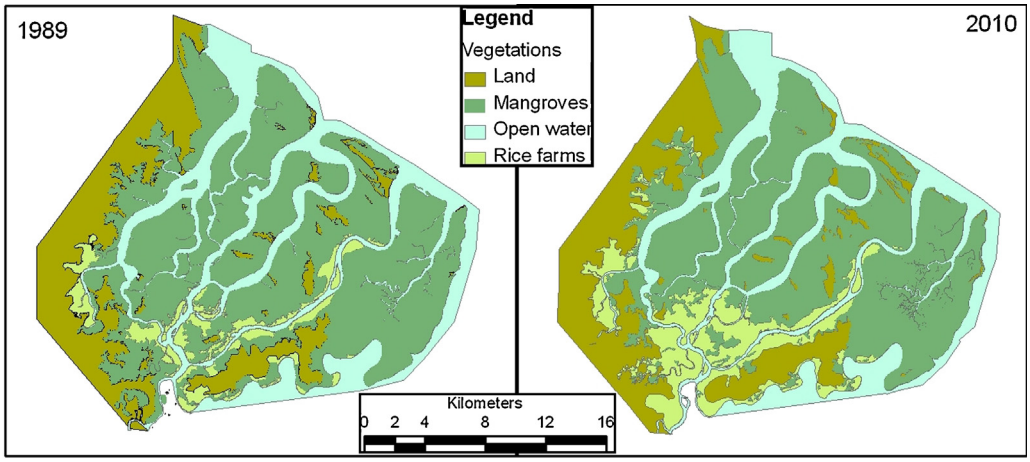

Fig. 3. Remote sensing map of the Rufiji delta showing areas of mangrove (dark blue), rice farming (pale green), water (pale blue), and other vegetation (brown) in 1989 (a) and 2010 (b). This ground truthed analysis by S. Nindi and H. Machano shows an increasing area of rice farming in the back delta area. (For interpretation of the references to color in the artwork, the reader is referred to the web version of the article).

survivorship above 50%, of which 22 plots (30%) had survivorship above 70% and only 10 landward plots had zero or very low survivorship (Sima, 2011). If mangrove planting had been done against the will of farmers, as alleged by Beymer-Farris and Bassett (2011), survivorship would have been extremely low as mangrove seed pods are easily uprooted. An independent evaluation in November 2012 showed that these same community participants remain supportive of the mangrove planting, have a warm rapport with the extension officer vilified by Beymer-Farris and Bassett (2011) and are keen to do more planting. Moreover, the planted trees have continued to survive well (pers com. S. Heileman, UNEP consultant, November 2012). Beymer-Farris and Bassett (2011) present no direct testimony from farmers who planted mangroves and provide no evidence that any farmer participated unwillingly.

3.4. A short history of the Rufiji mangroves

In addition to the above direct errors, Beymer-Farris and Bassett (2011) also suggest that the work of environmentalists and their 'degradation narratives' has resulted, in the Rufiji delta, in a "*shift in resource control and management from local to global actors (that) builds upon narratives of environmental change (forest loss) that have little factual basis in environmental histories*". We summarise available evidence on the length of settlement, forest use, and forest change in the Rufiji delta, present new data on all these issues from research done in 2011–2012, and include a comment on the issue of sea level rise in the East African region.

As noted by Beymer-Farris and Bassett (2011) the mangroves of the Rufiji have a long history of human use as sources of building poles, and timber for fences, houses, boats, fish traps and firewood (Semesi, 1992). Trading of mangrove poles from Rufiji to Zanzibar and to Arab countries via wider Swahili trade routes (Horton and Middleton, 2000) is recorded at least from the 9th century (Horton and Clark, 1985; Spalding et al., 1997; Kessy, 2003). The Portuguese arrival by the 15 century AD further facilitated export of mangrove poles particularly *Rhizophora mucronata*; this trade flourished into the 1960s (Mainoya et al., 1986), and continues today. Maps from c.1908 show three villages in the Rufiji delta supplying this trade (Simba Uranga, Tilassi and Mohovo; Engler, 1908–1910). A decrease in mangrove pollen in sediment cores from the Rufiji over the past 500 years, particularly *R. mucronata*, is potentially evidence of this mangrove harvesting (Punwong et al., 2012).

Using Landsat imagery, Wang et al. (2003) reported a loss of 1769 ha mangrove forest in the Rufiji delta between 1990 and 2000. This finding is disputed by Beymer-Farris and Bassett (2011) on basis of low image resolution. However Wang el al.'s analysis was ground-truthed in 664 ground-reference points, with 269 in mangrove vegetation, reporting accuracy of 98.53% and 97.53%, respectively. We have updated these analyses, using Landsat (1989) and WorldView-1 (2010) imagery (latter with 0.5 m resolution). Results are consistent with Wang et al. (2003); over the period 1989–2010 mangrove cover in the northern delta alone declined by 2920 ha (10.1%). Over the same period the area of rice farms increased from 2939 ha to 5858 ha, primarily in the back of the delta (see Fig. 3). Numerous narrative statements to WWF staff since 2005 indicate a widespread community perception that the area of mangrove forest has declined due to rice farm expansion. Farming the landward mangrove areas is preferred for two practical reasons: (1) it is not dependant on rain; rice is tidally irrigated when fresh or low salinity water is pushed back into the delta by high tides and (2) little or no weeding is required in cleared mangrove areas.

We have also undertaken new social research on the farming system in the delta (Lazier et al., 2013). This study used participatory, qualitative PRA-based methodologies following CARE (2009) and engaged 192 men and women (50:50 ratio) through 24 focus groups in four villages in the Rufiji Delta (Kiomboni, Msala, Mbwera and Pombwe). A typical testimony gathered during this research from a farmer from Kiomboni stated "*In the early days it was just people of Salale ward* (*Kiomboni, Nyamisati and Mchinga-Mfisini villages*) *who were farming in the area. Each of them would hardly manage 2 acres. However, in the recent days there has been expansion of rice farms* (*in mangroves*) *mainly by outsiders, from as far as Ikwiriri and Dar es Salaam, and using chain saw to cut mangroves for both timber and farms expansion*". This bears on Beymer-Farris & Bassett's (2011) narrative of rice farming patterns which focuses only on "*the Warufiji's complex shifting rice cultivation practices*", and overlooks the impact of farmers not resident in the delta who have become increasingly numerous over the past 2–3 decades.

With regard to sea-level rise, and as noted by Beymer-Farris and Bassett (2011), there is limited empirical evidence for recent sea level rise in the East African region. However, palynological research using samples from the Rufiji delta provides tentative evidence for sea level rise during the last two centuries (Punwong et al., 2012, 2013), which is in broad agreement with the predictions of IPCC (2010). The latest modelling by the Potsdam Institute, predicts that sea levels will rise 0.5–1.1 m in this area by 2100 (World Bank, 2012, p.33).

4. Discussion

The 2011 eviction events in the Rufiji delta, described by Beymer-Farris and Bassett (2011), had nothing to do with REDD+ implementation in Tanzania, and are not linked to non-governmental organisations projects in the delta, particularly those of WWF. They were precipitated by the application of the Forest Act 2002 by the government Forestry and Beekeeping Division (now Tanzania Forest Service) (See online letter from 27th January 2011 signed by the then Director of FBD).

National law in Tanzania states that all mangroves, up to the high tide line are designated as National Forest Reserves. This has a long historical basis; for example "*In 1904, all mangroves of coastal Tanzania were declared forest reserves, and district officers were instructed to remove any peoples residing within them*" (Sunseri, 2009). The protection of mangroves has been embedded in all Tanzanian forestry legislation over the past 100 years. With regard to actions that are allowed within Forest Reserves, the Forest Act of 2002 states: '*no person other than an existing right-holder shall do any of the following acts in a forest reserve unless and until granted a concession or a licence or a permit: (f) undertake any mining activities, (g) occupy or reside on any land, (h) clear, cultivate, or break up for cultivation or any other purpose, any land, (l) erect any buildings or other structures*'. http://www.mnrt.go.tz/index.php?option=com_phocadownload&view=category&id=3:tanzania-journals-of-e-t-2007&Itemid=53 (accessed 27.11.12).

Although the legal background to these evictions is, therefore, very clear, we are equally aware of the potential negative social impacts of people being removed from reserved areas.

In terms of national REDD+ readiness, the WWF REDD+ project one of several investments being made to assess the amount of carbon in Tanzanian forests (www.tzredd.org). The broader package of work on REDD+ in Tanzania aims to ensure that REDD+ policy balances the core goals of reducing deforestation and forest degradation with considerations of equity, governance and livelihoods (Robledo et al., 2008; Chhatre and Agrawal, 2009; Sandbrook et al., 2010; Peskett et al., 2008; IWGIA, 2009; Danielsen et al., 2011), biodiversity (Strassburg et al., 2009; Venter et al., 2009; Gardner et al., 2012), and opportunity and implementation costs (Fisher et al., 2011). Social safeguard elements for REDD+ in Tanzania (e.g. Epple et al., 2011) are being addressed through collaboration with the Climate, Community and Biodiversity Alliance (CCBA) (http://www.climate-standards.org/ (accessed 27.11.12)) and UNEP-World Conservation Monitoring Centre, with funding provided by the UN REDD programme.

On the ground, all Tanzanian REDD+ pilot projects are implementing their work through community based forest management (CBFM) (Blomley et al., 2008; Burgess et al., 2010; http://reddtz.org/index.php?option=com_docman&task=cat_-view&gid=52&Itemid=99 (accessed 27.11.12)). The Forest Act of 2002 (URT, 2002), and the supporting Guidelines on Participatory Forest Management (PFM) (URT, 2003), provide clear guidance on how such an approach might work. The establishment of Village Land Forest Reserves provide a credible framework for the creation of local control over forest resources, which cannot be alienated for alternative land uses, and potentially allow villagers themselves to benefit from REDD+ payments. In addition, REDD+ may provide opportunities for enhancing benefits from forest reserves that are co-managed between the state and the local communities, where there are few tangible benefits to communities (Meshack et al., 2006; Rantala et al., 2012), which is a source of considerable concern with regard to the environmental justice of this intervention.

In view of the erroneous claims in the paper by Beymer-Farris and Bassett (2011), which have been further repeated and elaborated in the global media, we encourage a further – and much more evidence-based debate. In our view, Beymer-Farris & Bassett should provide a much fuller qualitative and quantitative analysis of their village level data from the Rufiji in a form that can be further scrutinised and used to inform conservation practice in the delta, whilst still protecting the identity of informants. There are also precedents for good science informing policy change in Tanzania, for example the Milledge et al. (2007) report on forest governance failure in the forests south of Rufiji river generated huge change in the forestry sector. Similar credible scientific challenges have been made to the failures of the wildlife sector (e.g. Durant et al., 2007). Paradigms have shifted in the past and will continue to shift within the constellation of actors working on natural resources management.

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Appendix A. Supplementary data

Supplementary data associated with this article can be found, in the online version, at doi:10.1016/j.gloenvcha.2013.05.013.

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