Institution: University of Sussex

Unit of Assessment: UoA 24 Anthropology and Development

Title of case study: Research on 'green-grabbing' prompts international policy action and new sustainable agricultural practices

1. Summary of the impact

Fairhead and his colleagues questioned new market approaches to environmental sustainability, warning of their iniquitous distributional effects, dubbed 'green-grabbing'. Reported globally, this helped to prompt the UN Expert 'Committee on World Food Security' and leading global conservation organisations to recognise and organise to avoid this problem. Fairhead's research exemplar focused on the distributional effects of policies sequestering carbon through 'biochar' additives to African soils. He (and his colleagues) revealed a hitherto unknown African soil-management practice that provides a pro-poor 'climate-smart' alternative to biochar, and this is already being mimicked by agriculturalists in Ethiopia and is planned in Sierra Leone.

2. Underpinning research

The analytical critique of 'green-grabbing' emerged as Fairhead linked with Leach and Scoones (Institute of Development Studies) in 2011 to edit together a collection of case studies in the *Journal of Peasant Studies* (the top 'impact factor' journal for both Anthropology and Development Studies).

These cases and analysis show how the appropriation of land and resources for environmental ends ('green-grabbing') is an emerging process of deep and growing significance across the world, producing poverty in its wake. A debate on 'land-grabbing' already highlights instances where 'green' credentials justify appropriations of land for food or fuel (e.g. to 'alleviate pressure on forests'). Yet Fairhead *et al*. reveal how environmental green agendas are themselves now core drivers depriving people of land and rights – whether linked to biodiversity conservation, biocarbon sequestration, biofuels, ecosystem services, ecotourism or 'offsets' related to these. In some cases 'green-grabbing' is more subtle, reducing land access or restricting its use. Green-grabbing has roots in well-known histories of environmental displacement (for parks, forest reserves) but the new market mechanisms to address environmental problems have drawn an extraordinary new range of actors and alliances into this process (e.g. pension funds, venture capitalists, commodity traders and consultants, GIS service-providers, ecotourism companies, the military, green activists and anxious consumers). As nature becomes 'capital', it attracts enclosure and consolidation; new appropriations of nature with implications for ecologies and livelihoods.

Fairhead *et al*"s case study examined how global interest and markets in carbon offsetting have driven interests in 'biochar' technologies as an apparent 'win–win' but have drawn attention away from the potential of 'Anthropogenic Dark Earths' (ADE). Biochar (charcoal produced by incomplete combustion of vegetation, sometimes in biomass energy processes) is newly understood to be a soil conditioner that can sequester atmospheric CO_2 whilst restoring soil carbon and fertility. Modern attention to biochar, however, emerged from the appreciation of ADE (soils transformed by the long-term, intensive waste deposition associated with indigenous domestic and farming practices) that are rich in biochar, but a lot more besides. Global concern to sequester carbon and the associated new carbon markets is biasing research and policies in these promising technologies towards the 'biochar', occluding attention to the larger potential fertility benefits that likely will derive from mimicking ADE.

These findings derive from two research initiatives. First, Fairhead's Leverhulme grant *The Dark Earth Phenomenon: Sustainable Agriculture for Amazonia and Beyond?* (£54,000) enabled doctoral student James Fraser to discern how modern farmers in Amazonian Brazil use

Amazonian Dark Earths. These initially poor soils are improved enduringly by the deposition of everyday wastes over centuries, enriching them with biochar AND many other organic and inorganic materials which alter soil quality so that, hundreds (thousands) of years later, they remain capable of intensive use. Fairhead then developed research hypothesising the presence of *Amazonian Dark Earths in Africa?* (ESRC £450,000), and conducted this with international co-investigators from Ghana, Guinea and Cornell (USA). They established (for the first time) that West African farmers already create and value ADE.

So, whilst 'biochar' programmes are being rolled out in Africa to encourage African smallholders to sequester global carbon by adding biochar to their soil, such additives are not an entirely novel aspect in African farming. But carbon markets are driving interests in biochar at the expense of researching African Dark Earth (AfDE) approaches, and are threatening large-scale 'green-grabs' for biochar feedstocks and in land consolidation associated with economies of scale – rather than building on socially and ecologically appropriate AfDE practices. Further, the loud voice now criticising biochar for its distributional effects risks throwing the baby of AfDE out with its bathwater.

3. References to the research

R1 Fairhead, J., Leach, M. and Scoones. I. (2012) 'Green-grabbing: a new appropriation of nature', *The Journal of Peasant Studies*, 39(2): 237–61.

Note: Despite being published only in 2012, Fairhead *et al*.'s analytical introduction is currently the fourth-most-downloaded article in the history of the journal (6,276) and itself set the agenda for a double-session panel at the Association of American Geographers conference (2013).
meridian.aag.org/callforpapers/program/SessionDetail.cfm?SessionID=16685
This special issue is also published as a book with Routledge (2013).

R2 Leach, M., Fairhead, J. and Fraser, J. (2012) 'Green-grabs and biochar: revaluing African soils and farming in the new carbon economy', *The Journal of Peasant Studies*, 39(2): 285–307.

R3 Fairhead, J. and Leach, M. (2009) 'Amazonian Dark Earths in Africa?', in Woods, W.I., Teixeira, W.G., Lehmann, J., Steiner, C., WinklerPrins, A.M.G.A.; and Rebellato, L. (eds) *Amazonian Dark Earths: Wim Sombroek's Vision*. Berlin: Springer-Verlag, 265–78.

R4 Fairhead, J., Leach, M. and Amanor, K. (2012) 'Anthropogenic Dark Earths and Africa: a political agronomy of research disjunctures', in Sumberg, J. and Thompson, J. (eds) *Contested Agronomies*. London: Routledge, 64–85.

Outputs can be supplied by the University on request.

4. Details of the impact

The special issue evidenced concerns noted by the 'Committee on World Food Security' of the UN 'High Level Panel of Experts on Food Security and Nutrition' when reporting on 'Land tenure and international investments in agriculture', acknowledging how conservation policy generates strong pressures to set aside land in ways that can be understood as a land grab in the name of the environment – 'a new way of appropriation of nature' [see Section 5, C1]. It also helped to stimulate and set agendas for a major gathering in 2013 of conservation professionals on 'Conservation and Land Grabbing: Part of the Problem or Part of the Solution?', jointly organised by the International Institute for Environment and Development, the International Land Coalition**,** the Zoological Society of London, and Maliasili Initiatives, and drew together international conservation organisations (UNEP, IUCN, Conservation International, Fauna and Flora International, Bird Life, World Resources Institute, RSPB, DfID) and the national conservation organisations of Ethiopia, Uganda and Kenya. The symposium has resulted in a variety of initiatives, including the calling for deliberation and resolutions to avoid and correct conservation-led land grabs at the forthcoming World Parks Congress (2014), specifically addressing this newly

recognised problem that Fairhead and his colleagues had made so apparent [C2].

The policy impetus is due, in part, to news coverage that the analysis attracted internationally (e.g. *New York Times*, *al Jazeera*, *New Internationalist*', *Canada Free Press*, *China Dialogue*) and with militant news outlets (*Europe-Solidaire*, *Global Justice Ecology Project* [C3]). Leading professional and policy networks then discussed and disseminated it. These networks included the POLEX network of the UN-Mandated Centre for International Forestry that networks forestry and conservation professionals globally, the PRESA network of the World Agroforestry Centre (ICRAF), mandated with 'generating and sharing knowledge to build capacity on Payments for Ecosystem Services in Africa and beyond', and aid organisations such as Welthungerhilfe [C4]. Lobby groups such as 'Carbon Trade Watch' and the Washington-based 'Transnational Institute' (www.tni.org), incorporated the message (e.g. in TNI's influential primer on 'The global land grab' [C5]).

In addition to policy critique and reformulation, Fairhead's research into AfDE offers a sustainable indigenous alternative to the potentially 'green-grabbing' biochar industry and policy. Fairhead disseminated technical ideas widely (e.g. a feature in '*New Scientist*'); a presentation at the UK's Department for Business, Innovation and Skills on debates and innovation networks, which helped develop their roadmap for 'biogenic carbon sequestration' [C6]. But to gain global reach, Fairhead developed a collaborative research team that included as Co-I the world-leading biochar soil scientists at Cornell, and Johannes Lehman, the co-founder and chair of the 'International Biochar Initiative' that supports 'researchers, commercial entities, policy-makers, farmers and gardeners, development agents and others committed to sustainable biochar production and use'. This generated an immediate policy and business audience, and integrated Fairhead's AfDE research within partnerships between Cornell and African agronomic research and development (e.g. the CARE and Cornell partnership).

Fairhead's AfDE research team, including Dawit Solomon of Cornell, initiated a vibrant dialogue concerning AfDE within 'biochar' networks and collaborations crossing the soil-science and agricultural-policy communities in Africa and beyond (e.g. the CGIAR Climate Change and Food Security programme; the BIODEV programme of the World Agroforestry Centre; the EU BeBi project; the International Institute of Tropical Agriculture (IITA), International Centre for Tropical Agriculture (CIAT), and research groups at the Swedish University of Agricultural Sciences (SLU) and Wageningen Agricultural University). This was facilitated and sustained in workshops and e-networking (e.g. the 'Biochar Africa' inaugural conference, Kenya 2013, disseminating to IITA, ICRAF, CIAT, Re-char Kenya; the CARE/Cornell workshops linking them with IITA and Sierra Leone researchers in Freetown, 2013).

The research and dialogue has prompted some funders to switch their initial focus on biochar, and adopt AfDE instead as their model, and develop practices to mimic/accelerate AfDE formation. Thus the McKnight Foundation, which previously funded a 'biochar' project supported by Cornell and Jimma University in Ethiopia, for example, has now transformed into an 'indigenous fertiliser' programme and conducted field trials of mixes of locally sourced soil additives that overtly mimic AfDE and which outperform normal fertiliser. Pilot trials conducted in 2012–13 are to be expanded into major regional trials in Ethiopia, and provide a model for an AfDE-inspired 'indigenous fertiliser' movement on the continent. This is directly attributable to Fairhead's ESRC research and the energy of his collaborators, Solomon and Lehman [C7].

Agricultural trials of AfDE-inspired 'indigenous fertiliser' are also being developed in Sierra Leone after Fairhead co-conducted preliminary research with an EU-funded 'Food Security and Economic Development' project supported by Deutsche-Welthungerhilfe, and linked with Njala University College [C8]. This revealed the major importance of AfDE for agroforests (oil palm, cocoa, coffee). A further project with Njala Agricultural University (Sierra Leone, January 2011–December 2011) determined the prevalence, formation and use of these soils. Now the collaboration is seeking to develop trials to mimic their formation in order to improve agricultural production and sequester carbon, whilst avoiding green grabs.

5. Sources to corroborate the impact

C1 On the High Level Panel of Experts on Food Security, see p. 22 of http://www.fao.org/fileadmin/user_upload/hlpe/hlpe_documents/HLPE-Land-tenure-and-international-investments-in-agriculture-2011.pdf

C2 On the 2013 Symposium, see the March 2013 workshop report *Conservation and LandGrabbing: Part of the Problem or Part of the Solution?*. See p. 1 (first citation) for the influence of Fairhead *et al*. and pp. 25–7 for plans instigated by this meeting. The report is at: http://povertyandconservation.info/sites/default/files/Conservation%20and%20Land%20Grabs%20-%20Symposium%20Report%20-%20Final.pdf. On those attending, see Appendix, and on where they plan this to lead, see pp. 25–6.

C3 On press coverage:

- *New York Times* http://green.blogs.nytimes.com/2012/06/20/q-and-a-the-dark-side-to-green-transactions/?_r=0;
- *al Jazeera* http://www.aljazeera.com/indepth/opinion/2012/06/201261885431273708.html;
- *New Internationalist* http://newint.org/features/2013/05/01/smallholders-last-land-keynote/;
- *Canada Free Press* http://www.canadafreepress.com/index.php/article/48668;
- *China Dialogue* http://www.chinadialogue.net/article/show/single/en/5039-Appropriating-nature- (in Mandarin-Chinese: http://www.chinadialogue.net/article/show/single/ch/5039-Appropriating-nature-).

On militant news outlets:

- *Europe-Solidaire* http://www.europe-solidaire.org/spip.php?article25670; and
- *Global Justice Ecology Project* http://climate-connections.org/2012/09/17/new-report-on-land-grabs-going-once-going-twice-the-great-green-grab/

C4 On dissemination by professional networks, see, for POLEX, http://www.cifor.org/online-library/polex-cifors-blog-for-and-by-forest-policy-experts/english/detail/article/1220/going-once-going-twice-the-great-green-land-grab.html.

On PRESA, http://presa.worldagroforestry.org/blog/2012/07/03/is-redd-moving-too-slow-not-necessarily-2/.

On Welthungerhilfe: http://www.welthungerhilfe.de/ueber-uns/mediathek/artikel/mediathek/brennpunkt-26.html

C5 On citation and use by lobby organisations, see the Transnational Institute, http://www.tni.org/sites/www.tni.org/files/download/landgrabbingprimer-feb2013.pdf;

On Carbon Trade Watch: Protecting Carbon to Destroy Forests: Land enclosures and REDD+ http://www.carbontradewatch.org/publications/protecting-carbon-to-destroy-forests-land-enclosures-and-redd.html

C6 On the dissemination of research and potential importance of African ADE, see Pearche, F. (2011) 'Handmade: African Dark Earths', *New Scientist*, 210(2815): 42. www.academia.edu/1567904/Handmade_African_Dark_Earths_report_in_New_Scientist.

On Biogenic Carbon Sequestration Roadmap, see section on 'Research and Development Opportunities, Line L: https://www.innovateuk.org/c/document_library/get_file?groupId=3261512&folderId=3708831&title=ESKTN+Biogenic+Carbon+Sequestration+Roadmap+to+2050.pdf

C7 On the significance of Fairhead's research on switching biochar programmes to AfDE-inspired Indigenous Fertilizer movement, contact Dr Dawit Solomon (Cornell) and Dr Johannes Lehman (Cornell).

C8 On the development of biochar within the Sierra Leone Food security project (FOSED) contact the coordinator.