Institution:
Bangor University, 10007857

Unit of Assessment:
UoA 7 - Earth Systems and Environmental Sciences

Title of case study:
An evidence-based approach reduces the local costs of biodiversity conservation in low- and middle-income countries.

Period when the underpinning research was undertaken:
2011 - 2018

Details of staff conducting the underpinning research from the submitting unit:

Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Professor Julia PG Jones	Professor in Conservation Science	May 2006 - present
Dr Neal Hockley	Senior Lecturer in Environmental Economics & Policy	September 2008 - present

Period when the claimed impact occurred:
2015 - 31 December 2020

Is this case study continued from a case study submitted in 2014? N

1. Summary of the impact

Bangor-led research has demonstrated the negative social impacts that conservation can have for some of the poorest people in the world. It has profoundly altered how governments, industry and donors implement conservation: one of the world's largest nickel mines (Ambatovy, Madagascar) has changed how it approaches biodiversity offsets, the Ugandan government has incorporated recommendations into its national offset strategy, and the US government has used research findings in funding decisions for a mine in Myanmar. In Madagascar Bangor-led research has influenced how the government and donors implement safeguards to reduce negative impacts of protected areas on the poor.

2. Underpinning research

Tropical forest conservation has global benefits but can result in significant local costs. In many parts of the world, people living on the forest-edge are unusually poor, politically marginalised and heavily dependent on using natural resources for their livelihoods. They are therefore highly vulnerable to negative impacts from conservation restrictions that prevent forest clearance or limit wild harvesting. Since 2014, Bangor research led by Professor Julia Jones and Dr Neal Hockley **[3.a, 3.b]** has investigated the costs of different models of conservation as experienced by local communities, with a focus on Madagascar. The research has identified startling shortcomings in implementation leading to negative effects on local livelihoods:

(A) Biodiversity offsets - conservation funded by industry to offset the impact of their operations with the aim of achieving No Net Loss in biodiversity
The International Finance Corporation (IFC, the private sector arm of the World Bank) performance standards require that industrial developments such as mines, which impact natural habitats, achieve No Net Loss of biodiversity. This requires them to minimise impacts and offset unavoidable damages (e.g. by funding conservation to avoid biodiversity loss due to agricultural expansion by poor local communities). In this way industry is funding new conservation areas in poor countries. Stringent social safeguards apply to people affected by IFC-funded projects, but Bangor research revealed that this is not understood by many stakeholders involved in implementation of IFC performance standards **[3.1]**. Bangor-led intensive research on the offsets

associated with one of the largest nickel mines in the world (Ambatovy, Madagascar) showed that the social safeguards were not being met **[3.2]**; in particular the poorest people were bearing a notable cost.

(B) Protected areas promoted by governments and funded through mechanisms such as REDD+ (Reducing Emissions from Deforestation and Degradation)
REDD+ is a mechanism stemming from the Intergovernmental Panel on Climate Change whereby tropical forest countries slow the rate of forest loss to contribute to global climate change mitigation. Many REDD+ projects are set up with funding from the World Bank, meaning that World Bank performance standards apply (project-affected persons should be compensated). Bangor has pioneered methods for evaluating the local costs of conservation in such contexts **[3.3]**. Bangor conducted the first complete analysis of the magnitude and distribution of local costs in a REDD+ project and associated protected area, compared to the compensation received. This revealed that stringent international standards were not being met and identified why this occurred **[3.4, 3.5]**.

Because of her work on social impacts of conservation policies and interventions, Jones was invited into a significant international collaboration (funded by the Science for Nature and People Partnership) proposing No Net Loss of ecosystems as a global aspiration for environmental policy post-2020 (when the current global commitments will have expired). She was critical at bringing the equity and socio-economic considerations into the vision for Global No Net Loss **[3.6]**.

3. References to the research

Research Outputs

3.1 Bidaud, C., Schreckenberg, K., and **Jones, J. P. G.** (2018) The local costs of biodiversity offsets: comparing standards, policy and practice. *Land Use Policy,* **77**, 43-50. DOI (Peer-reviewed journal article)
3.2 Bidaud, C., Schreckenberg, K., Rabeharison, M., Ranjatson, P., Gibbons, J. M. and **Jones, J. P. G.** (2017) The sweet and the bitter: Intertwined positive and negative social impacts of a biodiversity offset. *Conservation & Society*, **15**(1), 1-13. DOI (Peer-reviewed journal article)
3.3 Rakotonarivo, O. S., Jacobsen, J. B., Larsen, H. O., **Jones, J. P. G.**, Nielsen, M. S., Ramamonjisoa, B. S., Mandimbiniaina, R. R. and **Hockley, N.** (2017) Qualitative and quantitative evidence on the true local welfare costs of forest conservation in Madagascar: Are discrete choice experiments a valid ex ante tool? *World Development*, **94**, 478-491. DOI (Peer-reviewed journal article)
3.4 Poudyal, M., Gibbons, J. M., Ramamonjisoa, B. S., **Hockley, N.**, Rakotonarivo, O. S., Mandimbiniaina, R., Rasoamanana, A. and **Jones, J. P. G.** (2016) Can REDD+ social safeguards reach the 'right' people? Lessons from Madagascar. *Global Environmental Change*, **37**, 31-42. DOI Submitted to REF2021 (REF identifier UoA7_17)
3.5 Poudyal, M., **Jones, J. P. G.**, Rakotonarivo, O. S., **Hockley, N.**, Gibbons, J. M., Mandimbiniaina, R., Rasoamanana, A., Andrianantenaina, N. S. and Ramamonjisoa, B. S. (2018) Who bears the cost of forest conservation? *PeerJ*, **6**, e5106. DOI Submitted to REF2021 (REF identifier UoA7_124)
3.6 Maron, M., Simmonds, J. S., Watson, J. E. M., Sonter, L. J., Bennun, L., Griffiths, V. F., Quétier, F., von Hase, A., Edwards, S., Rainey, H., Bull, J. W., Savy, C. E., Victurine, R., Kiesecker, J., Puydarrieux, P., Stevens, T., Cozannet, N. and **Jones J. P. G.** (2020) Global No Net Loss of natural ecosystems. *Nature Ecology and Evolution,* **4**(1), 46-49. DOI (Peer-reviewed journal article)

Grants

3.a **Jones, J.P.G.** (2013 - 2018) *p4ges: Can paying 4 global ecosystem services reduce poverty.* NERC: Ecosystem Services for Poverty Alleviation (ESPA) NE/K010220/1, GBP599,364 (Bangor University: R37R06)
3.b **Jones, J.P.G.** (2014 - 2016) *ESPA: Ecosystem Services for Poverty Alleviation fellowship*: FELL-2014-102, GBP164,506 (Bangor University: R37R16)

4. Details of the impact

Bangor's research on the social impacts of biodiversity offsets has been influential in Madagascar and internationally:

1) One of the largest nickel mines in the world (Ambatovy, Madagascar) has changed its implementation of biodiversity offsets to try and achieve better outcomes for poor local communities "*Work done by Bangor University and the University of Antananarivo … was very interesting. … Following the publication of this research (and informed by other information) we have made changes to how we address social impacts of our biodiversity conservation efforts*." (Senior Manager, Sustainability, Ambatovy, **[5.1]**).

2) **Bangor-led research fed into the development of industry Good Practice Principles that have been widely used.** In 2018 (via an ESRC Impact Acceleration Account award) Bangor led the development of industry good practice principles: "Ensuring No Net Loss for people as well as biodiversity" **[5.2]**. (A) In 2019 the Ugandan government launched its national offset strategy for 2020 to 2030 which requires biodiversity offsets to address potential impacts on people (citing the principles and Bangor research **[5.3]**). (B) In 2019 it was decided that a major mine and associated offset in Myanmar would not go ahead unless the social impacts of the offset could be addressed. "*I relied on your recent publications (primarily the good practice principles document and the Con Bio article) to inform Finding 5 on social dimensions. Thank you for producing such useful materials.*" (Senior Environmental and Social Analyst USAID **[5.4]**; see also the final report citing Bangor work **[5.5]**). (C) A major French Development Agency-funded project strengthening capacity for mitigation of biodiversity impacts from development with governments of 4 African countries (Guinea, Mozambique, Uganda, Madagascar) used the principles (including translating them into French) to ensure impacts on people are properly considered alongside biodiversity **[5.6]**. "*The Principles* **[5.2],** *as well as the Bidaud publications* **[3.1, 3.2]**, *were very useful in convincing several participants to an Environmental and Social due-diligence meeting of the importance of considering the social impacts of the offsets being discussed for a hydropower project in Madagascar; the documents were known to several of the biodiversity specialists around the table including representatives of the European Investment Bank and CDC Group plc*" (Lead consultant Biotope **[5.6]**). Working in partnership with a biodiversity consultant funded by Professor Jones's second ESRC Impact Acceleration Account project in 2019, extensive engagement with a wide range of industry stakeholders was possible. New guidelines produced by the International Union for the Conservation of Nature (IUCN) for project developers aiming to mitigate biodiversity impacts associated with solar and wind energy development **[5.7]** use the Bidaud publication **[3.1]** to highlight the potential for negative social impacts from biodiversity offsets. They refer to the good practice principles **[5.2]** as the place to go for further guidance on addressing social impacts saying, *"This guidance provides a framework for defining measurable social outcomes and assessing whether the social considerations of biodiversity no net loss measures have been sufficiently accounted for".*

3) **The Biodiversity Consultancy (TBC, Cambridge), one of the best-known consultancy firms working on biodiversity offsets, have strengthened their focus on social impacts and are applying this with clients.** "*The idea for producing an Industry Briefing Note* [Social considerations when designing and implementing biodiversity offsets: opportunities and risks for business **[5.8]**] *stemmed from these initial discussions* [about Bangor's research in this area]*. We went on to organise a very well attended session on Biodiversity Offsets and People at the International Association for Impact Assessment in Durban in May 2018. We believe that this session helped key people in the industry more explicitly consider the social impacts of biodiversity offsets (many companies still tend to consider environmental mitigation and social mitigation separately) … The work we are doing in this area represents a new strength for our business … and is central to ensuring the best possible outcomes for people and biodiversity.*" Technical Director TBC **[5.9]**.

Greater awareness of social impacts of protected areas has resulted in changes in policy and project design in Madagascar:

1) The Government of Madagascar is reforming its policies on the social impacts of protected areas, including new requirements for how impacts are evaluated, compensated and monitored. Madagascar's Minister of Environment, and Sustainable Development is leading the reforms and said "*Thanks to research carried out by Bangor University and ESSA-LRA* [a Malagasy research institution*]…, we are carrying out profound reforms of our social safeguard policy in protected areas to ensure that conservation does not impoverish local populations and that their human rights are preserved.* [This will] *directly benefit the hundreds of thousands of local communities who depend on the resources of our protected areas…. With this letter, I would like to express my gratitude for the effort that researchers contribute to enrich the country with practical knowledge that helps in better decision-making in the choice made by our policy makers.*" **[5.10]**.

2) Bangor-led research has influenced donors to better account for local costs. (A) "*One direct result of Bangor University's research and associated policy engagement is the £10.2 million* [GBP10,200,000] *DEFRA project: Achieving sustainable forest management through community managed protected areas in Madagascar. The recently launched tender for this refers explicitly to research by Bangor University, and requires those who bid to acknowledge local costs and demonstrate how their proposed activity will address them.*" (British Ambassador to Madagascar **[5.11]**). (B) A USD74,900,000 (12-2019) endowment for biodiversity conservation in Madagascar (Fondation pour les Aires Protégées et la Biodiversité de Madagascar; FAPBM) has used Bangor-led research in the development of their new social safeguard system. The director of FAPBM said "*FAPBM is developing a new Environmental and Social Management System, which will govern all our commitments to support Madagascar's protected areas. This system was informed by research carried out by ESSA-Forêts* [a Malagasy research institution] *and Bangor University on the socio-economic impacts of conservation and the state of play of the social safeguards currently in force in the Protected Areas of Madagascar.*" **[5.12]**. (C) The World Bank recently conducted a major review of their environmental investments in Madagascar over the past decade. One of the reviewers (from the Independent Evaluation Group of the World Bank said "*I would like to thank you for your important contributions to the report regarding the socio-economic impacts of biodiversity conservation. First, the interviews we had to discuss the environmental sector, biodiversity degradation, and the EP3 in Madagascar have been very useful in shaping the evaluation. Second, the scientific research published by you and your colleagues at Bangor University has been crucial to a better understanding of the complexity to design and implement social safeguard policies for restricted forest access. The World Bank's approach in the EP3 has been flawed and has initiated a dialogue on why and how safeguards should be implemented for biodiversity projects. The findings of the evaluation – based on robust – evidence will shape this dialogue and provide critical evidence to inform the design of future World Bank projects….. I have used* [your] *data in the evaluation to get a better understanding of the complex farm realities of households that were eligible for compensation (or not). This is truly unique data that reviewers rarely have at their disposal*" **[5.13].**

Work laying out a vision for delivering global No Net Loss of biodiversity while ensuring social equity, is influencing international policy:

Global No Net Loss of ecosystems was included as a target in the draft text of the post-2020 framework to be agreed in 2021 by the Convention on Biological Diversity; **3.6** was referenced in the formal scientific advice on ensuring social equity **[5.14]**.

5. Sources to corroborate the impact

5.1 **Testimonial from Senior Manager for Sustainability at Ambatovy** (participant in the impact process) explaining Bangor research has resulted in changes to how Ambatovy (one of the largest nickel mines in the world) addresses the social impacts of their biodiversity conservation efforts.
5.2 **Ensuring No Net Loss for people as well as biodiversity: Good Practice Principles (2018)** industry guidelines co-developed by Bangor University (with Wild Business Ltd, Balfour Beatty and the University of Oxford's Interdisciplinary Centre for Conservation Science) are underpinned by

Bangor-research **[3.1, 3.2]**, represent an important **pathway to change** and are cited in subsequent Sources **[5.3, 5.4, 5.5]**.
Ensuring No Net Loss for people as well as biodiversity: Good Practice Principles
5.3 **National Biodiversity and Social Offset Strategy (2019) of the Ugandan Government** directly quotes Bangor-research and Bangor co-developed industry-focused guidelines **[5.2]**, ensuring good practice principles when development projects take place, on pages 5, 35 and 56.
5.4 **Testimonial from a Senior Environmental & Social Analyst with USAID's Multilateral Development Bank team** (participant in the impact process) details how Bangor research (and the good practice principles **[5.2]**) informed 'finding 5' in a USAID review about whether a USD110,000,000 (05-2019) cement mine and associated offset in Myanmar can go ahead.
5.5 **USAID Post-Approval Field Review Report, Myanmar mine report (2019)** cites the good practice principles **[5.2]** and **3.1** directly on page 23 to support finding 5 and the associated recommendations.
5.6 **Testimonial from lead consultant of Biotope** (participant in the impact process) who was closely involved in COMBO (COnservation, impact Mitigation and Biodiversity Offsets in Africa), a major French Development Agency-funded project supporting offset policies and implementation in 4 African counties. This project translated the good practice principles into French for use in Francophone Africa (and printed and distributed 200 hard copies). The testimonial lays out a range of ways in which the Bangor research was influential in demonstrating that biodiversity offsets can have costs to poor people and how the project has used these results in their work.
5.7 **Mitigating biodiversity impacts associated with solar and wind energy development: guidelines for project developers** (2021). This guidance, (originally due for publication in 2020 but was delayed due to COVID-19) lays out the steps developers should go through to mitigate biodiversity impacts. They use Bangor-led research to highlight the potential negative social impacts. Bangor University and the consultant employed via the Bangor ESRC IAA grant are acknowledged p.19 https://portals.iucn.org/library/sites/library/files/documents/2021-004-En.pdf
5.8 **The Biodiversity Consultancy Industry Briefing Note (2018)** outlines 'Social considerations when designing and implementing biodiversity offsets: opportunities and risks for business' and cites Bangor research and work with the Ambatovy nickel mine in the eastern rainforests of Madagascar on improving outcomes for people and biodiversity as an exemplar
Social considerations when designing and implementing biodiversity offsets: opportunities and risks for business
5.9 **Testimonial from the Technical Director of The Biodiversity Consultancy** (participant in the impact process) confirms how influential Bangor research has been on the way they address social impacts of offsets.
5.10 **Testimonial from Minister of Environment & Sustainable Development Madagascar** (participant in the impact process) confirming that their new policy on protected area management has been directly influenced by Bangor research. This testimonial is in French (English translation available on request).
5.11 **Testimonial from British Ambassador to Madagascar** (reporter on the impact process) confirming how Bangor research has influenced UK government funding to support conservation in Madagascar.
5.12 **Testimonial from director of FAPBM** (Fondation pour les Aires protégées et la biodiversité de Madagascar) (participant in the impact process) describing the USD74,900,000 (12-2019) endowment and how Bangor's research has heavily influenced the development their new social safeguard policy which will apply to all protected areas, receiving funds from FAPBM in future. This testimonial is in French.
5.13 **Testimonial from the Independent Evaluation Group of the World Bank** (reporter in the impact process) who reports on how useful Bangor research, publicly archived data sets from our research, and interviews with our researchers have been in their recent evaluation of spending in Madagascar.
5.14 **Convention on Biological Diversity (2020)** Synthesizing the scientific evidence to inform the development of the post-2020 Global Framework for Biodiversity. This formal synthesis of the underlying science informing the post-2020 framework on the Convention of Biological Diversity cites Bangor work on Global No Net Loss of Ecosystems on page 9.
https://www.cbd.int/doc/c/f06d/33a3/66a053f9d850143056c9a7b8/sbstta-24-inf-09-en.pdf