

Impact case study (REF3)

Institution: University of Leicester		
Unit of Assessment: 14		
Title of case study: Conservation, Livelihoods and Environmental Futures: Improving Policy and Practice in Mongolia		
Period when the underpinning research was undertaken: 2013–2020		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s): Professor Caroline Upton	Role(s) (e.g. job title): Professor of Human Geography	Period(s) employed by submitting HEI: 2006–Present
Period when the claimed impact occurred: 2014–2020		
Is this case study continued from a case study submitted in 2014? N		
1. Summary of the impact		
<p>Effective, equitable governance of natural resources is integral to realising global (e.g., Sustainable Development Goals) and national goals. In Mongolia, Professor Upton partnered with pastoralists to produce participatory ecosystem service-based approaches to livelihood and conservation challenges, resulting in Mongolia's first community-based rangelands 'payment for ecosystem services' (PES) scheme. She also collaborated with the government to build pastoralists' resilience through the application of new remote sensing datasets to critical environmental challenges (SIBELIUs project). The PES scheme generated direct financial benefits for pastoralists, incentivised protection of globally important biodiversity, and enhanced rangeland carbon sequestration. It is internationally recognised as an exemplar for community engagement in climate-change initiatives and contributes to national policymaking. SIBELIUs is reshaping government practice and capacities, in line with herders' needs.</p>		
2. Underpinning research		
<p>Upton's research on natural resource governance, conservation, environmental values and activism is addressing pastoralists' engagement with Mongolian policymakers on issues of biodiversity values and heritage, recognised by the Convention on Biological Diversity's country reports as key priorities. Her work also addresses issues of environmental sustainability, justice and livelihoods, for example through mitigating effects of extreme weather events (<i>dzuds</i>) exacerbated by climate change on Mongolia's herders (some 30% of the national population). Mongolia is experiencing one of the highest rates of global warming, whilst <i>dzuds</i> have led to the loss of 1,100,000 (2015–2016) and 10,000,000 livestock (2009–2010: 25% of the national herd), with devastating impacts on herders' livelihoods and resilience.</p> <p>The Darwin Initiative-funded 'Values and Valuation: New Approaches to Conservation in Mongolia' project [G1] brought together researchers, activists and practitioners from Mongolia and the UK. Led by Upton, it developed innovative approaches to conservation and livelihoods, through exploration, mapping and valuation of ecosystem services. This research project was the first to successfully complete Ecosystem Service (ES) based evaluation of herders' diverse values and priorities. Drawing on this research generated Mongolia's first community-based rangelands PES scheme, under the Plan Vivo (PV) standard, namely 'Pastures, Conservation and Climate Action, Mongolia' (PCCA), co-developed between the University of Leicester (UoL), local herders and the Mongolian Society for Range Management (MSRM). This constitutes an important innovation both for biodiversity conservation planning in Mongolia and for the Plan Vivo standard itself, which previously had only certified global forestry projects [R1, R2].</p> <p>Building on Upton's underpinning work on pastoral justice claims and identities [R4], this project utilised participatory development of locally appropriate approaches to ES evaluation, facilitating recognition of customary knowledge, values and practices in conservation planning, and reflecting local needs, priorities and justice issues, contra to critiques of ES-based evaluations elsewhere [R1, R2, R3]. In order to be verified by Plan Vivo, PCCA through Professor Upton,</p>		

developed a novel technical specification, linking herders' everyday practices to measurable rangeland carbon sequestration [R1]. PCCA has successfully completed its first phase (2015-2019), with all participating herder groups opting to progress to Phase 2, reflecting PCCA's significant, positive benefits on their livelihoods and landscapes [R1, R2].

Resilient Pastoralism: Towards Sustainable Futures in Rangelands [G2] (RP project) continued to engage with established pastoralist and policymaker partnerships to highlight the benefits of PCCA [R1]. In consultation with local stakeholders, Upton developed critical approaches to 'resilience' as a concept and to the ways in which new datasets (e.g., Copernicus Sentinel II satellite data) may support local livelihood values and priorities, both in Mongolia and Kenya [R5]. A linked AHRC-commissioned case study on best practice in indigenous partnerships, is being used to 'inform future funding calls and activities with GCRF and other International Development programmes' [R6].

The ongoing UK Space Agency funded **SIBELIUS project** (2018–2021) conducted in partnership with Mongolia's National Agency for Meteorology and Environmental Monitoring (NAMEM), builds on previous projects to apply new remote-sensing data and solutions to pastoral resilience challenges. SIBELIUS uses satellite data to provide more accurate and timely information on pasture and climate conditions, to facilitate herders' adaptive decision-making and thus reduce loss of livestock and pastoral poverty. Upton's research, methodologies and experience are central. By ensuring herders' voices and priorities are heard they enable in-depth understanding of herders' information requirements, resilience strategies and challenges which feed into the development and distribution of innovative satellite-based environmental products [G3].

3. References to the research

R1. Upton, C. (2020). Conserving Natures? PES as Innovation in Mongolian Rangelands. *Development and Change*, 51 (1): 224-252.

R2. Upton, C. (2020). 'Political Ecologies of Resource Governance: Ontologies, Agency and Practice'. In Nunan, F. (Ed). 2020. *Governing Renewable Resources: Theories and Frameworks*. London: Routledge, 145-162.

R3. Upton, C. (2014). Communities, culture and commodification: Mongolia's new resource politics. *Inner Asia*, 16 (2): 252-274.

R4. Upton, C. (2014). The new politics of pastoralism: identity, justice and global activism. *Geoforum* 54: 207-216.

R5. Upton, C. and Resilient Pastoralism team. (2017). 'Representing 'Resilience': Stories and Images from Kenya and Mongolia'. (Available online at <https://www2.le.ac.uk/departments/geography/research/projects/resilient-pastoralism/documents/pastoralism-photo-book>).

R6. Upton, C. and Kimaren, S. (2019). 'Resilient Pastoralism: Towards Sustainable Futures in Rangelands'. Report for ESRC/AHRC GRCF Indigenous Engagement Programme. <https://webarchive.nationalarchives.gov.uk/20200923113103/https://www.ukri.org/news/esrc-ahrc-grcf-indigenous-engagement-programme/>

Grants:

G1. Values and Valuation: New Approaches to Conservation in Mongolia (2012-2015), Darwin Initiative, project reference 19-021, PI: **Professor Caroline Upton**.

G2. Resilient Pastoralism: Towards Sustainable Futures in Rangelands; Global Challenges Research Fund (GCRF) Project no. NE/P01626X/1, 2016-2017, PI: **Professor Caroline Upton**.

G3. SIBELIUs: Supporting herding communities in Mongolia and Kyrgyzstan using satellite Earth Observation and Open Data Cube technology (2018-2021; ongoing), UK Space Agency IPP2, Co-I and academic lead: **Professor Caroline Upton**.

4. Details of the impact

Professor Upton's research has influenced development of conservation strategies in Mongolia and international policy and practice, linked particularly to PCCA. This has also yielded significant livelihood benefits for herders, as well as supporting national climate-change mitigation strategies. Impact has also arisen through her work on pastoral resilience, e.g., through 'Resilient Pastoralism' and developed through SIBELIUs. Here, research into herders' decision-making practices and information needs has enabled the development of targeted remote sensing products to facilitate resilience-building and risk management and has effected significant improvements in the ways in which in-country government partners Mongolia's National Agency for Meteorology and Environmental Monitoring (NAMEM) fulfil their statutory remit.

Changing Policy and Practice

The PCCA project, derived directly from Professor Upton's research, forms the basis of the Global Agenda for Sustainable Livestock (GASL) Good Practice Guideline within the '*Restoring Value to Grasslands: Linking Herders to Markets for Environmental Services*' theme. GASL, supported by international partners such as the World Bank and WWF, promotes sustainable practices within the global livestock sector [E1]. PCCA is highlighted in the European Commission response to the EU 'Biodiversity for Life' flagship initiative as an example of good practice and achievable benefits of financial incentives [E2]. PCCA, is identified as a best practice example by the international Consultative Group on International Agricultural Research (CGIAR) (2018). [E3].

Professor Upton's research has been integral to the development of the Sustainable Fibre Alliance's (SFA's) Sustainable Cashmere Standard, particularly in relation to the Grassland Stewardship Code of Practice. The Standard is being implemented amongst cashmere producers across Mongolia, providing herders with livelihood support through enhanced cashmere prices, linked to sustainable production and rangeland carbon sequestration. It has secured sustainable practice commitments from global brands such as H andM and M andS [E4].

SIBELIUs project outputs, namely more detailed, accurate and frequently updated satellite data products on weather and pasture conditions are described by NAMEM as "a real step change in the way in which they discharge . . . [their] remit". Professor Upton's research is integral to the development and dissemination of these products through analysis of herders' resilience challenges and the role of information provision therein, enabling targeted product development and uptake [E5]. SIBELIUs products are disseminated by Facebook in three test site regions and nationally through NAMEM webpages. They are due to go live on a national TV channel in early 2021.

Environmental impact

There are measured positive changes in herders' direct involvement in community-based conservation, as well as in habitats and species protection as a direct result of PCCA, and Professor Upton's research on ES-based values, practices and conservation [E6]. Incentivised activities include forest clean-ups, planting of seedlings (approximately 500 in one community) and protection of local wildlife such as argali, ibex, gazelle, marmot and red deer populations. Herders have collaborated with local administrations to take an active role in habitat management, in direct accordance with government strategies and priorities under Goals 7 and 8 of Mongolia's National Biodiversity Programme (NBP, 2015-2025) [E7]. End of PCCA Phase 1 surveys provide further tangible, numerical evidence of project impacts on species and habitats

[E6]. The project’s approaches feed directly into Goal 13 of the NBP [E7, p.34], which prioritises sustainable conservation and use of natural resources, based on their appropriate valuation. In addition, PCCA activities, underpinned by UoL’s novel research have enabled some 100,000 tonnes of CO₂ to be sequestered in rangelands. This is the first time that quantifiable rangeland contributions have been produced through a community-based project in Mongolia and as such, this is a key contribution to Mongolia’s climate mitigation goals and a global precedent for approaches to incentivising carbon storage in grasslands [E6].

Impact on local herders, livelihoods and well-being

PCCA activities have yielded some USD250,000, shared amongst participating herding communities, based on links to voluntary carbon markets and measured volumes of carbon sequestration. PCCA is therefore innovative in providing financial incentives for herders to better manage pastures and biodiversity, linked to carbon storage. These financial benefits constitute significant sums for poor households, for whom annual incomes in 2015 were less than USD6,000. Recent choices by herding communities to set up micro loan funds with PCCA money have also enabled herders to spread risks throughout the year [E6].

Measured livelihood changes against PCCA 2015 baselines at the three project sites show improvements in livelihood diversification, collaborative action for fixing/ constructing shelters and wells, and added value to livestock products through local processing and collaborative marketing [E6]. Other significant PCCA-related changes are in herders’ evaluation of their own well-being, expenditure on non-food items and existence of household savings [Figure 1, E6].

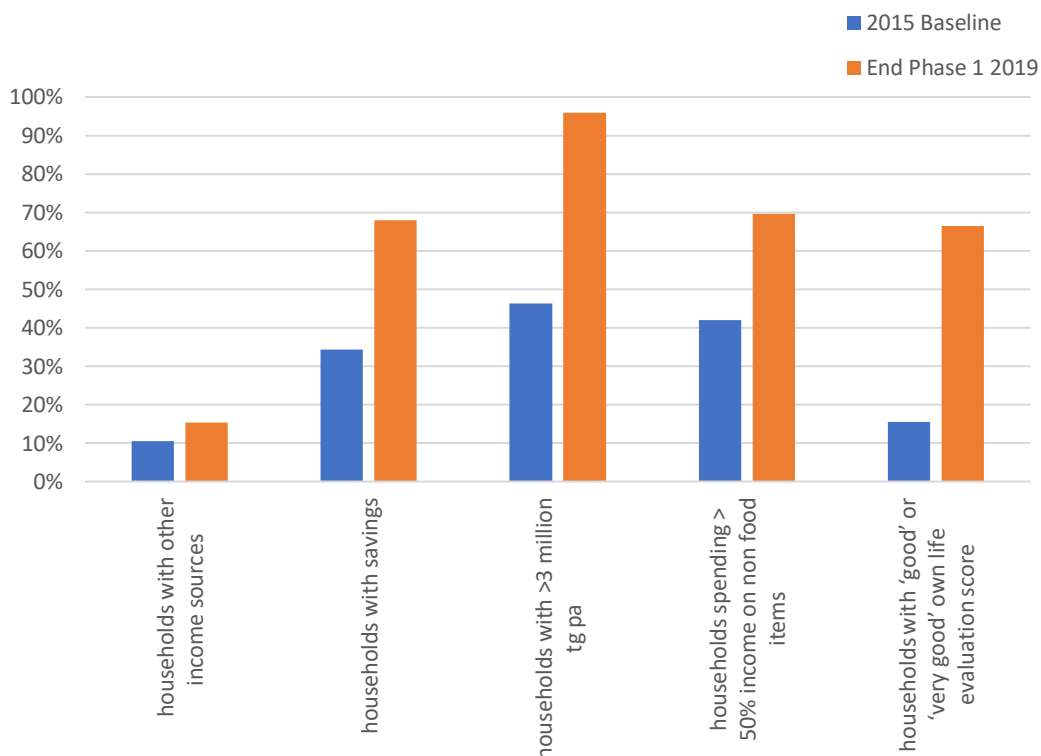


Figure 1: Average percentage of herder households across all three sites: improvements in financial and wellbeing indicators.

Herders’ own assessments from a PCCA workshop, Ulaanbaatar 2019, confirmed these positive impacts [E8]. The in-country partners MSRM, who have worked with many international researchers in the past, confirm that Professor Upton’s work and its application through PCCA, has proved particularly influential and innovative [E9].

5. Sources to corroborate the impact

E1. Global Agenda For Sustainable Agriculture. 2016. Good Practice Guidelines: Linking herders to markets for environmental services.

E2. Larger than tigers: Inputs for a strategic approach to biodiversity conservation in Asia: synthesis report by European Commission (2018), p65.

E3. Pappagallo, L. 2018. Operationalizing payments for ecosystem services for pastoralists in rangeland settings. Consultative Group on International Agricultural Research (CGIAR) Research Programme on Livestock, p70.

E4. Letter of Support: Sustainable Fibre Alliance.

E5. Letter of Support: National Agency for Meteorology and Environmental Monitoring (NAMEM)

E6. PCCA Annual Reports (Year 1, Years 2-3, Year 4).

E7. Mongolia Ministry of Environment, Green Development and Tourism 'National Biodiversity Program 2015–2025'.