

Meeting on Integrated Transactional Environment Management Systems

16:00 on Tuesday 28 March 2023 at UK Centre for Ecology and Hydrology, Wallingford

Present:

Adrian Lombard (Chair in IUCN for Sustainable Use and Management of Ecosystems;

Teresa Dent CBE (CEO of Game and Wildlife Conservation Trust)

Naimh McHugh (Acting Head of Farmland Ecology for Game and Wildlife Conservation Trust)

Alan Jenkins (Deputy CEO of UKCEH)

Harry Dixon (UKCEH's Associate Director of International Research and Development)

Robert Kenward (representing ESUG & Anatrack Ltd, Fellow of UKCEH)

IUCN had asked for the meeting to address the issue of getting integrated environmental support available at local level, to improve indigenous and local knowledge and transfer such knowledge to inform policy, which required a multilingual approach. IUCN had developed such a multilingual approach at very low cost, run by volunteers in (currently) 43 languages.

The organisations present described capabilities not covered adequately in pre-meeting briefings (of which a 1-pager is appended).

The work in UKCEH not mentioned in pre-briefings, but very relevant to agri-environment integration, was Richard Pywell's visualisation tools to help farmers perceive the effects of agro-environment measures, which had been tested on study farms but not yet more widely.

GWCT had been aggregating farmers for a decade, which is the only way to give coverage to inform policy, at first in farmer clusters then in groups closer to catchment scale, and now also at European level in a new FRAMEWORK project led by Naimh McHugh.

There was general agreement on a need for delivery, both to policy and land-management levels of decision support based on integrated environmental modelling and that this would benefit from cooperation between a number of partners.

Any integration would have a considerable start up hump. UKCEH would like IUCN help to encourage governments to put money in to go over that hump.

Both GWCT and UKCEH have close connections with Rothamsted, who could also be a partner for inclusion of agricultural productivity data.

UKCEH did not see a need for any formal agreement at this stage, but would welcome further discussion, involving also PIs, in an online meeting to agree what to put together for potential sponsors.

Integrated Transactional Environmental Management Systems (ITEMS)

1. IUCN and CEH addressed the integration of environmental software for delivery to local level >20 years ago and have worked with GWCT and Anatrack Ltd on this since 2008.
2. The concept was attractive to state sector in UK but only for in-house development; research on a design for EU was praised but proposed implementation raised concern.
3. Concern about long-term control also deterred commercial development, which was deemed to require open-source software with open-data and lacked a business model.
4. Need for transparency-based trust, as well as durability also favoured retention in the civic sector. Many potential uses now badly need funds for development & scale-up.

After EU endorsed the book on the partners project to design a Transactional Environmental Support System (TESS), in 2013, but questioned practicality of delivery at the (large) scales foreseen, partners have continued in appropriate directions, as follows:

IUCN has built a 43-language network for global-with-local information exchange, with scientists & trained practitioner volunteers in 15 regional/language forums (for NbS etc).

UKCEH has improved its modelling (e.g. JULES¹), co-founded CEEDS¹, maintained BRC¹ and grown associated Citizen Science, joined the civic sector and gained UKRI funding;

GWCT has reached 50 years of farmland research, developed farmer clusters, joined them at catchment scale and built local training networks with suitable consultancies;

Anatrack (spun-out from NERC to build modelling tools) has developed network tools Morph, SYCL²) for European Sustainable Use Group³ and GWCT on a non-commercial basis.

In the meantime, IPBES has noted huge unmet potential in sustainable use of wild species for meeting UN-SDG⁴, and that a combination of top-down (policy) and well-monitored bottom-up (management) is needed to achieve this as part of a complex challenge based on the nexus of food, water, health, biodiversity & climate⁵. Trusted information and green actions are needed at local (whole-electorate) & policy levels.

Business models for (inter)national ITEMS have emerged, based on:

- Trading and quotas for C and N;
- Compliance with wider policies for use of land and water;
- Training (policy/governance management tools, land/species management tools);
- Education (state-required support for e-industry, policy, geopolitics).

All potential partners have skills to contribute, including for instance ecologist-modellers, social scientists for work on policy, and coding experts available to each partner. Each partner also has unique expertise developed for decades on:

- ✓ Gathering & integrating data beyond species, especially hydrological;
- ✓ Convening farmers and other managers of land and water for research & restoration;
- ✓ Convening international experts for translation and voluntary expert-based outreach;
- ✓ Full-stack coding for global with local knowledge transfer."

Proposal: *Agreement of IUCN, ESUG, UKCEH, GWCT (and others?) to partner to develop ITEMS for local practitioner level as well as policy level, convening where possible affiliated states and organisations (IUCN & PEER members) for funding approaches.*

¹ [JULES](#), [CEEDS](#), [Biological Records Centre](#)

² Multilingual Online Research/Restoration Project Hosting (e.g. [Naturalliance](#)) and [System for Community Liaison](#)

³ [Spun out to manage EU and UN projects \(& charters\) for two Sustainable Use groups](#)(which it initiated) in IUCN.

⁴ IPBES (2022). [The Assessment Report on the Sustainable Use of Wild Species](#).

⁵ " (in prep) Thematic Assessment of Interlinkages among Biodiversity, Water, Food and Health (Nexus Assessment)