

# An ecosystem services economy can build a Forever Economy with and for Martuwarra Living Waters



Natural Hazards Research Australia

Oscar Metcalfe,<sup>1</sup> A/Prof Kamal Sangha,<sup>1</sup> Prof Jeremy Russell-Smith,<sup>1</sup> Prof Anne Poelina,<sup>1,2</sup> Lachie Carracher,<sup>2</sup> and Prof Robert Costanza<sup>3</sup>

<sup>1</sup> Research Institute for the Environment and Livelihoods, Charles Darwin University, NT

<sup>2</sup> Martuwarra Fitzroy River Council, WA

<sup>3</sup> Institute for Global Prosperity, University College London, UK

## Weaving a Forever Economy with and for Martuwarra Living Waters

Aim: to promote a (re)indigenised, circular Forever Economy for market and non-market benefits that operates holistically for the wellbeing of people and Country. An ecosystem services approach reinternalises externalities in valuations, building capability and an economy through, with and for people, culture and Country.

### Martuwarra Living Waters / Fitzroy River WA

**Martuwarra Living Waters is an entity of Country that relates in ecokincentric, mutually-reciprocal, *owneship* with its people.**

The present economy of the Fitzroy River (Martuwarra) watershed in the Kimberley, WA, is predominantly extractive and exclusory of Indigenous people; it values nature as an extractable resource with costs externalised accrued locally while benefits flow from the region.<sup>1</sup> An ecosystem services (ES)-based economy grounded in Indigenous worldview, knowledge and values would be holistic, circular, inclusive and embrace complexity for the long-term wellbeing of both people and nature/Country,<sup>2</sup> hence a Forever Economy.<sup>3</sup>

### Economic situational analysis, current and potential futures

An economic situational analysis will illuminate the economies current and potential market and non-market costs and benefits. For example, pastoralism (beef cattle grazing) is the main land use across the region, with negative externalities such as soil erosion and greenhouse gas emissions not valued in prices and thus weaken governing market signals.<sup>4</sup>

Negative and positive externalities are omitted for other land uses:

- mining and unconventional/fracked gas (long-term impacts)
- cropping agriculture, e.g. cotton (extensive water use)
- hydrogen production (extensive water use)
- conservation (parks, modified pastoralism, savannah burning) and
- tourism (intra and inter-generational knowledge transfer).

Re-internalising externalities supports economic development and long-term wellbeing of people and Country,<sup>1</sup> existential and fundamental to Indigenous identity, wellbeing and rights.<sup>5</sup>

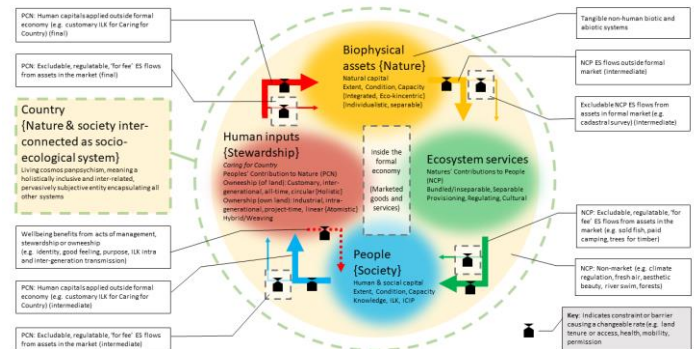


Figure: Conceptual model of Indigenous perspective of socio-ecological system showing multidirectional benefit ES flows, from Jarvis et al. (2022), Larson et al. (2023), Normyle, Doran et al. (2022); Normyle, Vardon & Doran (2022), Stoeckl et al. (2022), Wooltorton et al. (2022) and colleagues' publications. 1<sup>st</sup> author's diagram.

### Exploring Martuwarra with weaving and systems dynamics

Exploration of economic system dynamics is proposed with and through Martuwarra Fitzroy River Council via a co-produced case study using weaving, where diverse knowledges are cautiously and respectfully brought together for new insights.<sup>6</sup> Systems dynamics modelling can support discussion and help explore complex socio-ecological systems and benefit flows (see figure)<sup>7</sup> for leverage points<sup>8</sup> toward place-specific ecosystem service-based economies.<sup>9</sup>

1. Russell-Smith, J. et al. (eds), 2019, Sustainable land sector development in northern Australia: Indigenous rights, aspirations, and cultural responsibilities.
2. Poelina, A. et al., 2023. Learning to care for Dangaba. Aust. J. Environ. Educ. 39, 375–389.
3. Australian Conservation Foundation, 2021. Forging the Forever Industries—How ancient wisdom can guide the transition to new economies.
4. Russell-Smith, J., Sangha, K.K., 2018. Emerging opportunities for developing a diversified land sector economy in Australia's northern savannas. Rangel. J. 40, 315.
5. RiverOfLife, et al., 2023. Martuwarra Fitzroy River watershed: One society, one river law. PLOS Water.
6. Hill, R., et al., 2022. Learning together for and with the Martuwarra Fitzroy River. Sustain. Sci. 17.
7. Stoeckl, N. et al., 2016. Integrated models, frameworks and decision support tools to guide management and planning in Northern Australia. Northern Australia Environmental Resources Hub.
8. Meadows, D.H., 1999. Leverage points—Places to intervene in a system.
9. Sangha, K.K. et al. 2022. Ecosystem services and human wellbeing-based approaches can help transform our economies. Front. Ecol. Evol., Conservation and Restoration Ecology 10.



### Further information

For additional information scan the QR code or contact:

Oscar Metcalfe, PhD Researcher, Research Institute for the Environment and Livelihoods, Charles Darwin University  
[oscar.metcalfe@students.cdu.edu.au](mailto:oscar.metcalfe@students.cdu.edu.au)



RIEL  
 Research Institute for the Environment and Livelihoods

