

3rd ESP Asia Conference

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Eco-health and ecosystem services in Asia:
Bottom-up aspects for planetary health

ONLINE

SESSION DESCRIPTION

ID:

Governing Beyond Ecosystem Services: Institutional Approaches to Critical Zone Services

Hosts:

	Title	Name	Organisation	E-mail
Host:(1)	Associate Professor	Herlin Chien	Graduate Institute of Technological and Vocational Education, National Pingtung University of Science and Technology	hchien@mail.npust.edu.tw
Co-host(s):	Professor	Sue-Ching Jou	Department of Geography, National Taiwan University	

1) Preferably max 2 per session (1 host and 1 co-host). If necessary you can add more co-hosts but we will only send correspondence to the people listed as Host. Hosts are requested to forward relevant correspondence to the co-hosts, and other people involved in the organisation.

2) Other people involved in the organisation of the session can be listed here (you can add rows as needed);

Abstract:

In recent years, the concept of ecosystem services has been challenged to expand its scope to include “critical zone services” (Field et al., 2015; Banwart et al., 2013). Critical zone services not only contend that biosphere-based evaluation of service provision can benefit humans, but also that anthropogenic activities impact and are impacted by long-term flux exchanges in the geosphere. This scope extension is both temporal and spatial in that it accounts for annual to multi-decadal resource management both on and below the earth’s surface, especially ground-water, soil or regolith formation. Whereas conventional ecosystem services focus more on re-newable natural resources, critical zone services emphasize the importance of nonrenewable natural resource conservation.

Reflecting upon this scope extension of ecosystem services, while there is an increase in re-search examining governance of ecosystem services as an important part of environmental management, there remains a dearth of knowledge on how to manage services generated during critical zone processes in an integrative manner. Therefore, the purpose of this session proposal is to call for ESP members and non-members in Asia to join us in our collective exploration of an array of institutional analysis approaches to examining critical zone services, grounded preferably on empirical cases or critical zone sites in Asia. We also welcome stakeholders, especially a family of managers in geo-sites who can collaborate with scientists to integratively analyze vertical weathering profiles. Finally, we endeavor to compare diverse institutions, organizations, decision-making structures, and coordination mechanisms (Barton et al., 2017; Meyer et al.,

2018) that formally and informally determine and regulate resource use at different levels and scales of social–ecological systems.

Recommended Readings:

Banwart, S.A., J. Chorover, J. Gaillardet, D. Sparks, T. White, S. Anderson, A. Aufdenkampe, S. Bernasconi, S.L. Brantley, O. Chadwick, W.E. Dietrich, C. Duffy, M. Goldhaber, K. Lehnert, N.P. Nikolaidis, and K.V. Ragnarsdottir. 2013. Sustaining Earth's critical zone. Report of an International Workshop on Critical Zone Observatory Science. 9–11 Nov. University of Delaware, Newark. Available http://www.czen.org/files/czen/Sustaining-Earths-Critical-Zone_FINAL-290713.pdf.

Barton, D. N., Benavides, K., Chacon–Cascante, A., Le Coq, J. F., Quiros, M. M., Porras, I., Primmer, E., & Ring, I. (2017). Payments for Ecosystem Services as a Policy Mix: Demonstrating the institutional analysis and development framework on conservation policy instruments. *Environmental Policy and Governance*, 27(5), 404–421. <https://doi.org/10.1002/eet.1769>

Field, J. P., Breshears, D. D., Law, D. J., Villegas, J. C., López–Hoffman, L., Brooks, P. D., Chorover, J., Barron–Gafford, G. A., Gallery, R. E., Litvak, M. E., Lybrand, R. A., McIntosh, J. C., Meixner, T., Niu, G.–Y., Papuga, S. A., Pelletier, J. D., Rasmussen, C. R., & Troch, P. A. (2015). Critical Zone Services: Expanding Context, Constraints, and Currency beyond Ecosystem Services. *Vadose Zone Journal*, 14(1), vzj2014.10.0142. <https://doi.org/10.2136/vzj2014.10.0142>

Meyer, C., Chen, C., & Matzdorf, B. (2018). Qualitative comparative institutional analysis of environmental governance: Implications from research on payments for ecosystem services. *Ecosystem Services*, 34(October 2017), 169–180. <https://doi.org/10.1016/j.ecoser.2018.07.008>

Goals and objectives of the session:

To call for ESP members and non–members in Asia to join us in our collective exploration of an array of institutional analysis approaches to examining critical zone services, grounded preferably on empirical cases or critical zone sites in Asia.

Planned output / Deliverables:

- A reflection of moving beyond ecosystem services towards critical zone services
- Institutional approaches to study critical zone services
- Demonstration of empirical cases in Asia

Voluntary contributions accepted:

YES

Related to ESP Working Group/National Network:

TWG 18 – Governance & Institutional aspects