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The new assets of landscape ecology in the face of global challenges

Marc Deconchat, Cécile H. Albert, Audrey Alignier, Stéphanie Aviron, Laurent Bergès, Sébastien Bonthoux, Solene Croci, Aude Ernoult, Cendrine Garbey, Clélia Sirami

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➤ *The new assets of landscape ecology in the face of global challenges*

Deconchat Marc INRAE-Dynafor, Albert Cécile CNRS-IMBE, Alignier Audrey INRAE-Bagap,
Aviron Stéphanie INRAE-Bagap, Berges Laurent INRAE-Lessem, Bonthoux Sébastien
INSA CVL-Citeres, Croci Solène Univ Rennes1-LETG, Ernout Aude Univ Rennes1-Ecobio., Mony
Cendrine Univ Rennes1-Ecobio, Sirami Clélia INRAE-Dynafor

➤ Global changes are getting out of control



UN chief says the world is in 'life-or-death struggle' for survival

World Oct 3, 2022 6:43 PM EDT

UNITED NATIONS (AP) — U.N. Secretary-General Antonio Guterres warned Monday that the world is in "a life-or-death struggle" for survival as "climate chaos gallops ahead" and accused the world's 20 wealthiest countries of failing to do enough to stop the planet from overheating.

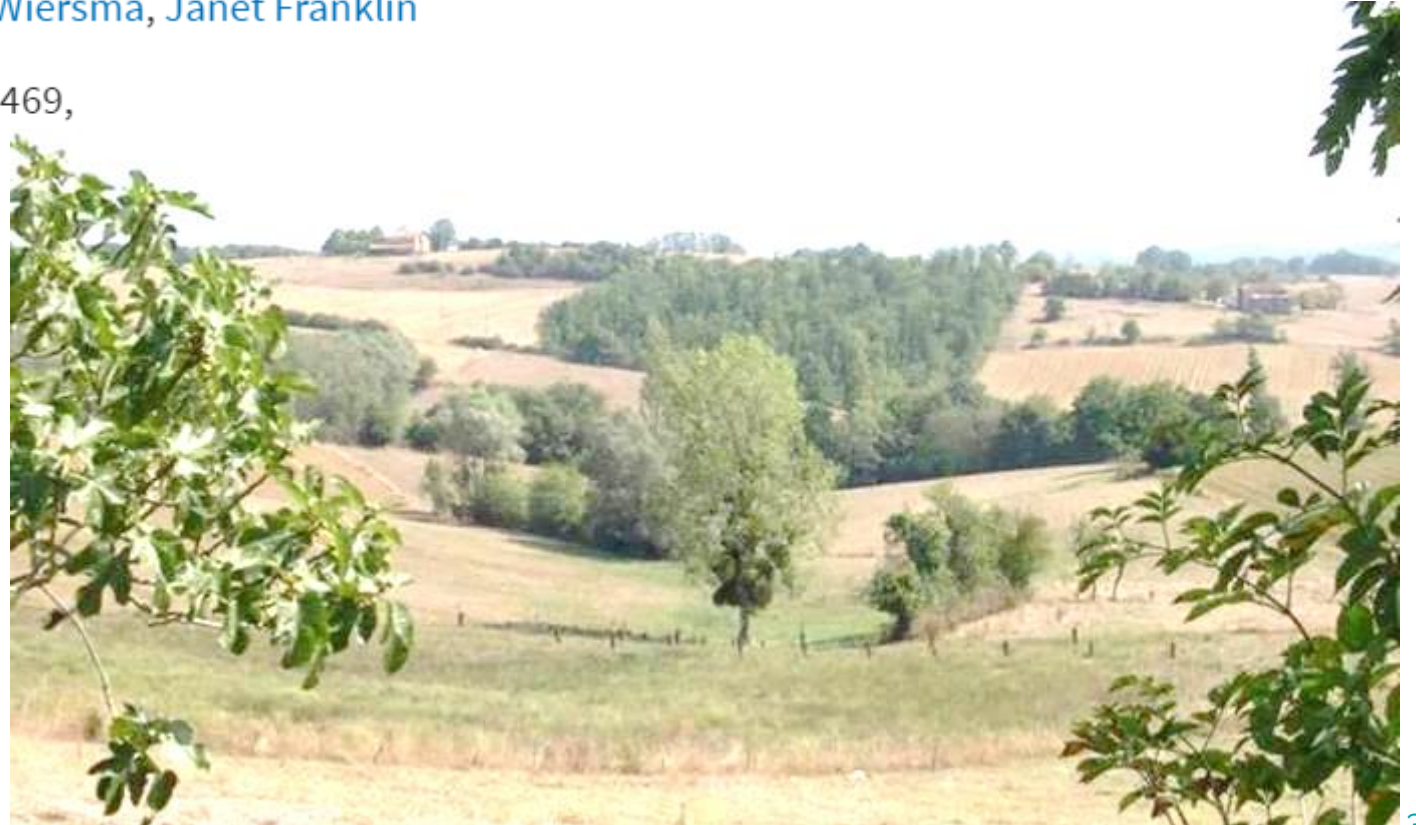
➤ Landscape scale is relevant

How Landscape Ecology Informs Global Land-Change Science and Policy FREE

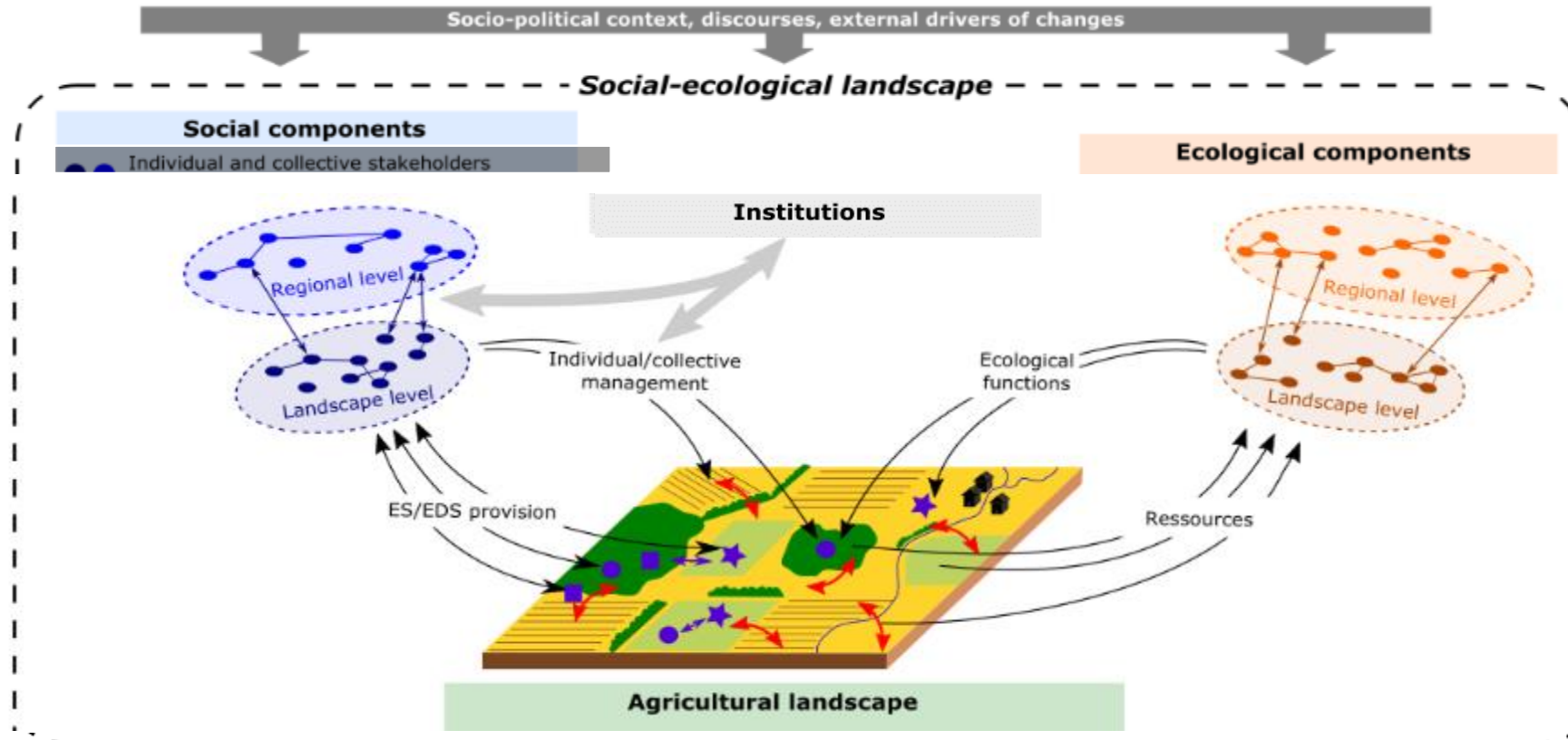
Audrey L. Mayer, Brian Buma, Amélie Davis, Sara A. Gagné, E. Louise Loudermilk, Robert M. Scheller, Fiona K.A. Schmiegelow, Yolanda F. Wiersma, Janet Franklin

BioScience, Volume 66, Issue 6, 1 June 2016, Pages 458–469,

<https://doi.org/10.1093/biosci/biw035>



➤ Concepts of landscape ecology



Landscape Ecol
<https://doi.org/10.1007/s10980-019-00829-4>

RESEARCH ARTICLE

A conceptual framework for the governance of multiple ecosystem services in agricultural landscapes

Aude Vialatte · Cecile Barnaud · Julien Blanco · Annie Ouin · Jean-Philippe Choisis · Emilie Andrieu · David Sheeren · Sylvie Ladet · Marc Deconchat · Floriane Clément · Diane Esquerré · Clelia Sirami



Evaluating conceptual models of landscape change

Lars A. Brudvig, Shawn J. Leroux, Cécile H. Albert, Emilio M. Bruna, Kendi F. Davies, Robert M. Ewers, Douglas J. Levey, Renata Pardini and Julian Resasco

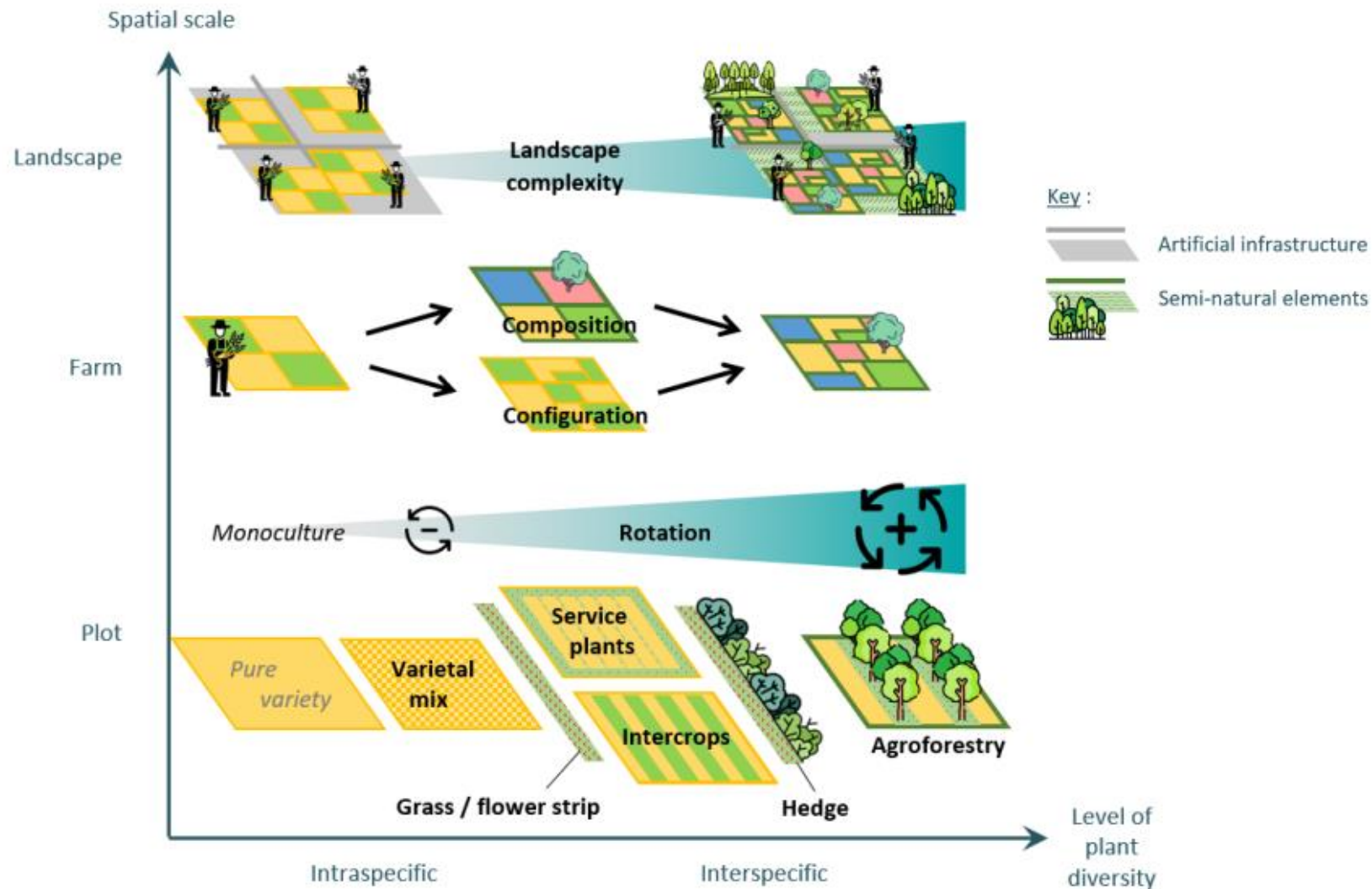
Ecography 40: 74–84, 2017

doi: 10.1111/ecog.02543

© 2016 The Authors. Ecography © 2016 Nordic Society Oikos

Subject Editor: Miguel Asuaje, Editor-in-Chief: Miguel Asuaje, Accepted: 17 October 2016

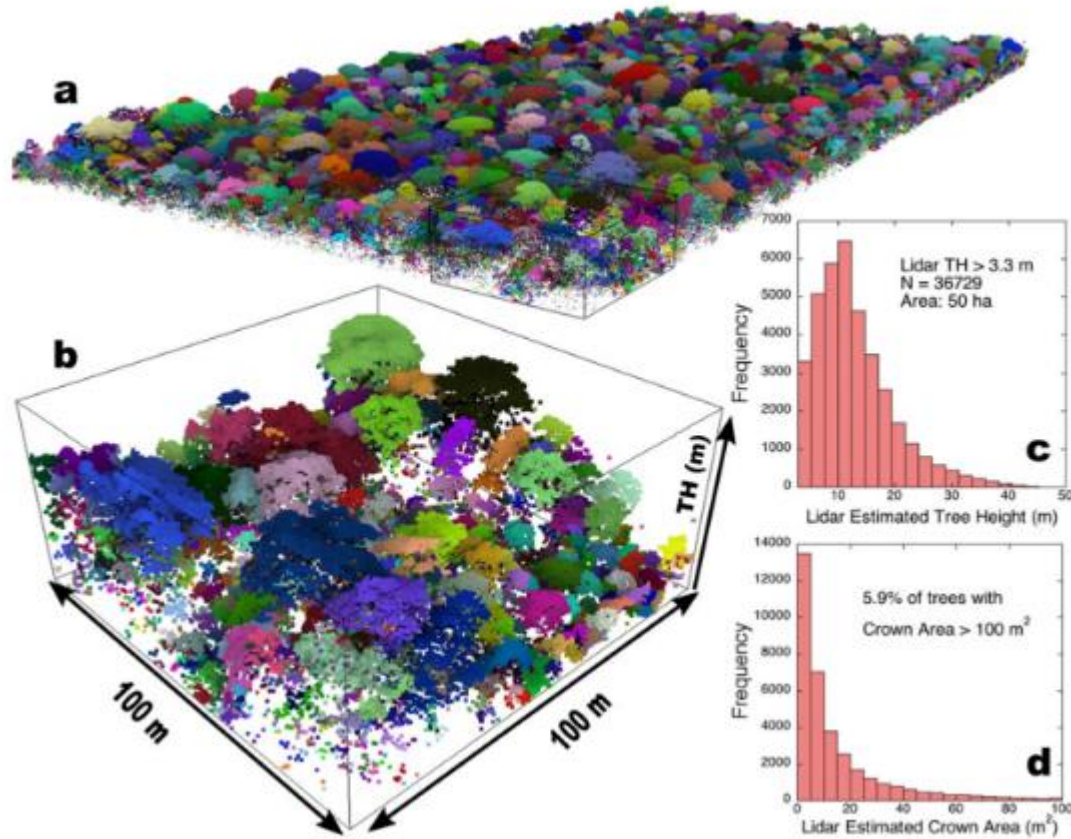
➤ Heterogeneity and diversity: ways to tackle global changes consequences



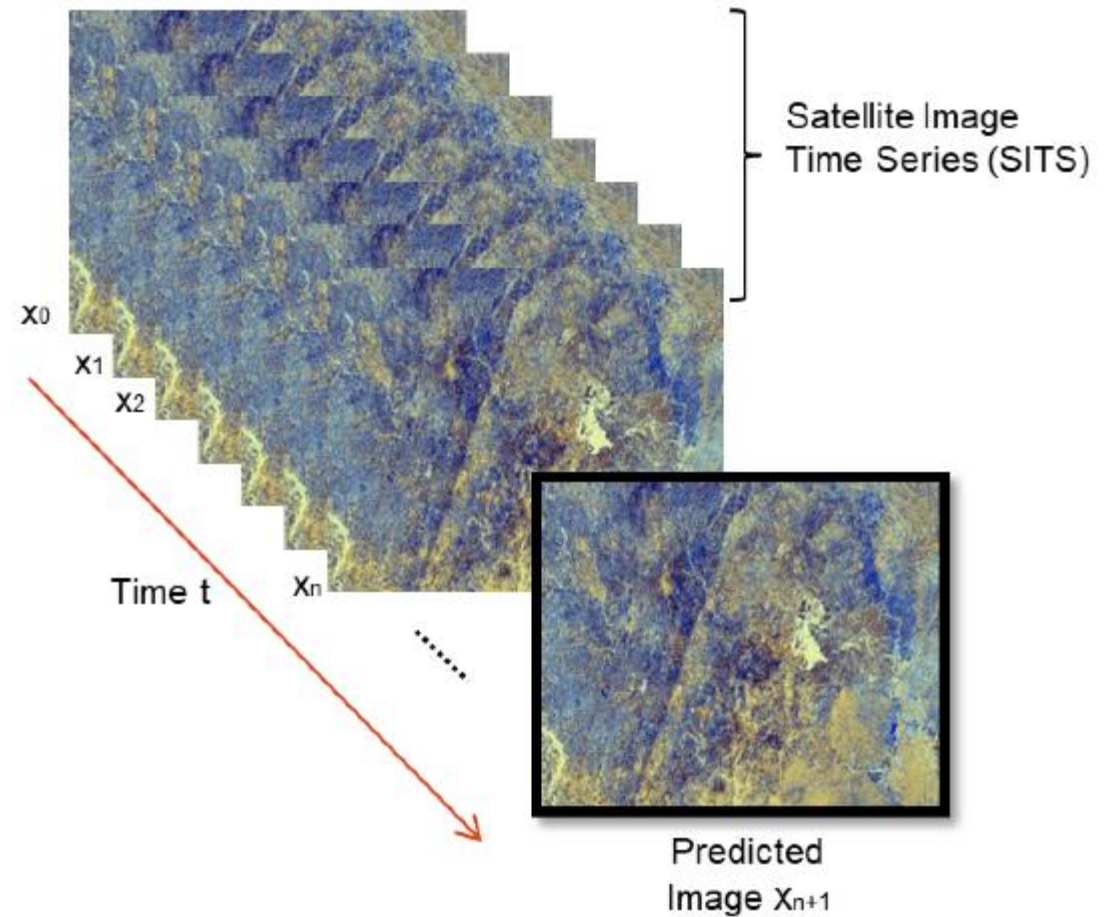
➤ Green and blue ecological infrastructures: connectivity



➤ Remote sensing for a fine scale monitoring of global changes



Ferraz et al., 2016



Moskolaï et al., 2021

➤ Dealing with risks and uncertainties



➤ From model to scenario



Building a shared vision of the future for multifunctional agricultural landscapes. Lessons from a long term socio-ecological research site in south-western France

Ouin Annie ^{a,*}, Andrieu Emilie ^a, Vialatte Aude ^a, Balent Gérard ^a, Barbaro Luc ^a, Blanco Julien ^a, Ceschia Eric ^b, Clement Floriane ^a, Fauvel Mathieu ^a, Gallai Nicola ^c, Hewison A.J. Mark ^d, Jean-François Dejoux ^b, Kephallacos Charilaos ^e, Marary Francis ^a, Probst Anne ^f, Probst Jean-Luc ^f, Ryschawy Julie ^b, Sheeren David ^g ... Sirami Clelia ^h


➤ *But more knowledge is not enough to initiate the transformations required to cope with global change*

One Earth

Volume 1, Issue 1, 20 September 2019, Pages 21-23

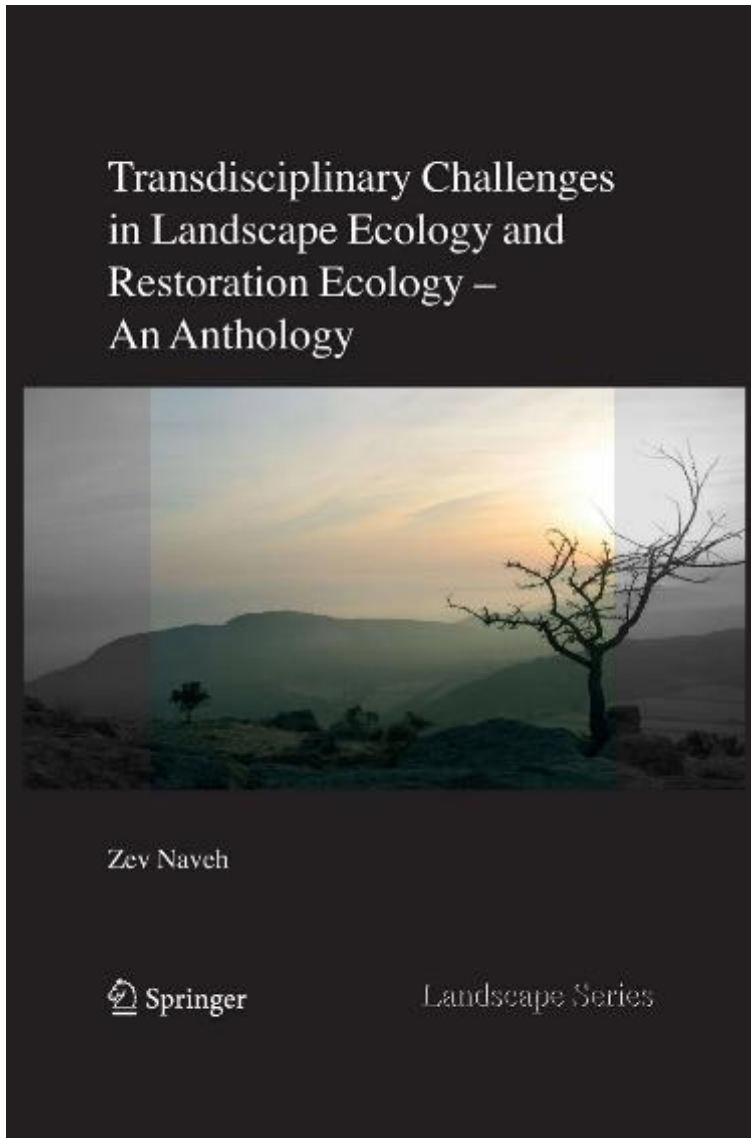
Commentary

Closing the Knowledge-Action Gap in Climate Change

Reto Knutti ¹  

*“Scientific understanding of climate change has accelerated in recent decades, but climate action has not kept pace. As the impacts of climate change become increasingly evident and public concern gains momentum, it is a **pivotal time to consider the role of science in closing the gap between knowledge and action.**”*

➤ Transdisciplinarity: designing research with and for the stakeholders



From the structure
of the landscape to
the landscape
experienced by its
inhabitants

➤ Towards resilient landscapes able to provide needed resources

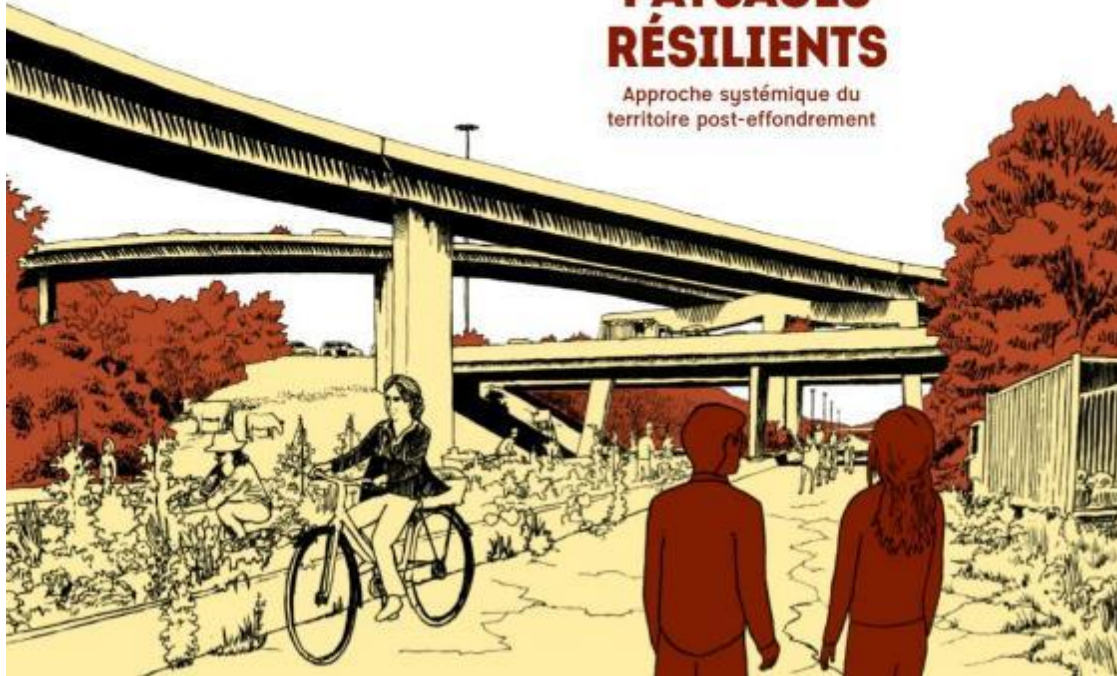
Operationalizing Ecological Resilience Concepts for Managing Species and Ecosystems at Risk

Jeanne C. Chambers^{1*}, Craig R. Allen² and Samuel A. Cushman²

Mémoire de fin d'études
de Pierre Lacroix

PAYSAGES RÉSILIENTS

Approche systémique du
territoire post-effondrement



<https://matheo.uliege.be/bitstream/2268.2/3104/3/Pierre%20Lacroix%20PAYSAGES%20RÉSILIENTS%202017.pdf>



➤ Towards Integrated Landscape Management



Food and Agriculture Organization
of the United Nations

LANDSCAPES FOR LIFE

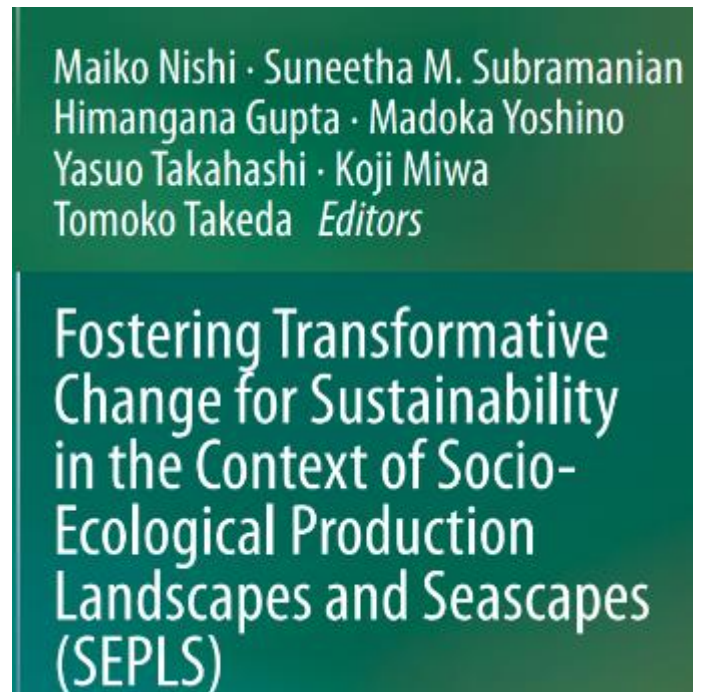
Approaches to landscape management
for sustainable food and agriculture



➤ Landscape ecologists must be involved in providing responses to global change

Be involved in policy making and implementation
Provide tools and models to manage sustainably
natural resources

If we want the world to change,
we have to change too



From pattern to process, for transformation