



# Cooperación entre la política y la academia para el desarrollo sustentable

Policy making and academia cooperation for sustainable development

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## *Talleres de capacitación sobre conflictos socio ambientales*





# Programa de publicaciones



## Panorama del nivel municipal en Uruguay

- Patula Ferla
- Julián González
- Leticia Silva
- Ignacio Zuasnabar







# *Servicios ecosistémicos*

## *SUMINISTRO*



## *REGULACIÓN*



## *DE BASE O SUSTENTO DE LA VIDA*



## *ESPIRITUALES Y CULTURALES*





## *Impactos de origen antrópico sobre el medio*





# Eventos extremos



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Homer-Dixon, T. F., Walker, R., Rigg, A.-S., Crispin, C., Folke, T. F., Lantieri, G. D., Peterson, J., Rockström, M., Scheffer, W., Steffen, M., & Todd, M. 2015. Synchronous failure: the emerging causal architecture of global crisis. *Ecology and Society* 20(3): 6. <http://dx.doi.org/10.7554/ES-02101-20150306>



## Synopsis

### Synchronous failure: the emerging causal architecture of global crisis

Thomas Homer-Dixon<sup>1</sup>, Brian Walker<sup>2</sup>, Rebecca Rigg<sup>3,4</sup>, Anne-Sophie Crispin<sup>5,1</sup>, Carl Folke<sup>3,1</sup>, Erik F. Lambin<sup>6,1</sup>, Gary D. Peterson<sup>7</sup>, Johan Rockström<sup>8</sup>, Martin Scheffer<sup>9</sup>, Will Steffen<sup>10</sup> and Max Trebilcock<sup>11</sup>

**ABSTRACT.** Recent global crises reveal an emerging pattern of causation that could increasingly characterize the birth and progress of future global crisis. A conceptual framework identifies this pattern's deep causes, intermediate processes, and ultimate outcomes. The framework shows how multiple stresses can interact within a single social-ecological system to cause a shift in that system's behavior, how simultaneous shifts of this kind in several largely discrete social-ecological systems can interact to cause a far larger intersystemic crisis, and how such a larger crisis can then rapidly propagate across multiple system boundaries to the global scale. Case studies of the 2008-2009 financial-energy and food-energy crises illustrate the framework. Suggestions are offered for future research to explore further the framework's propositions.

**Key Words:** climate change, conventional oil, financial system, global crisis, grain supply, social-ecological system

## INTRODUCTION

It has recently been proposed that identifiable boundaries mark the safe limits of human alteration of planetary biophysical systems such as nitrogen and carbon cycles (Rockström, et al. 2009a, A. Steffen et al. 2015). By this view, exceeding specific levels of key variables in these systems significantly raises the likelihood of a regime shift, which would be a sharp, nonlinear jump or "critical transition" to an alternative state (Scheffer 2009, Barabási et al. 2012). Should such a transition occur at an Earth-system level, it could affect vital social and economic systems and quickly

financial instability, an increasing global systemic risk (Rockström 2009, OECD 2011, WEF 2012, Halberg 2013, Pimm and Armstrong 2015). They often describe the situation that humanity faces now and in coming decades as a "perfect storm" of simultaneous crises (Stampe 2008, Alford 2011, Ehrlich and Ehrlich 2013, Morgan 2013). Although evocative, this phrase implies that the crises align solely by chance. We argue rather that their simultaneity is a manifestation of an underlying causal pattern that is becoming more prevalent, and we elaborate a conceptual framework that provisionally describes this pattern.

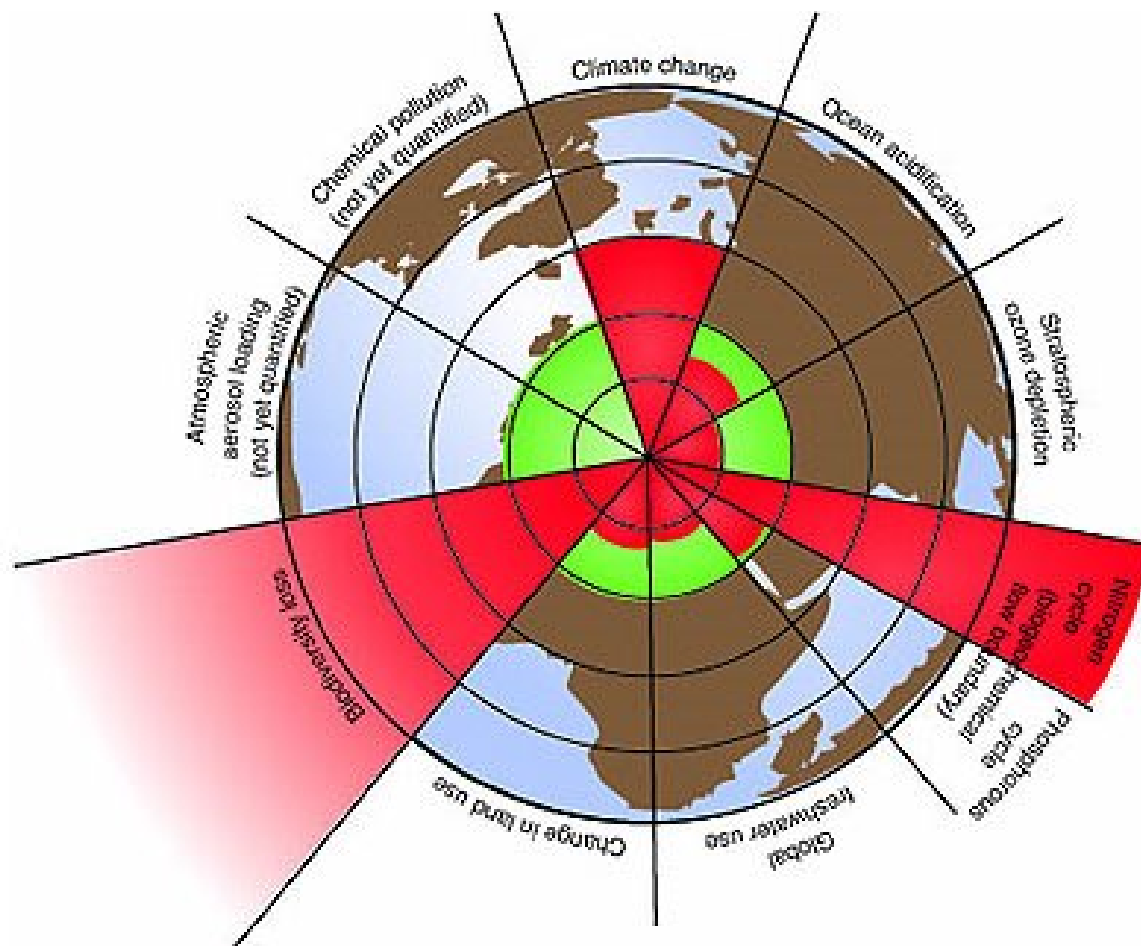


La **gestión ambiental** es un proceso que procura resolver, mitigar y/o prevenir los problemas de carácter ambiental, con el propósito de lograr un desarrollo sostenible, entendido éste como aquel que le permite al hombre asegurar su bienestar y conservar el patrimonio natural y cultural, garantizando su permanencia en el tiempo y en el espacio.





# ¿Nos exralimitamos?



Fuente: Stockholm Resilience Centre



# ***Sistemas socio económicos y naturales acoplados*** ***Sistemas socio ambientales***

*Complejidad*

*Cambios no lineales*

*Umbrales*

*Diferentes escalas temporales*

*Irreversibilidad*

*Incertidumbre*



# Desafíos a la política

***Conocer***

***Aprender – comprender***

***Incluir en la toma de decisiones***

***Comunicar***



# *Muchas gracias*



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