

Niklas Werner Weins (weinsniklas@gmail.com) & Leila da Costa Ferreira (leilacf@unicamp.br), University of Campinas / São Paulo Research Foundation

## **Title**

Beyond the compensation of ecological risk - is an urban Ecological Civilization possible?

## **Abstract** (250 words)

In an increasingly urbanized world oriented by profit, our relation with nature is at a pivotal point to act. As environmental risks manifest themselves ever more clearly in ecological and cultural consequences, the benefits produced by industrial development are outweighed by the damage produced. Especially in the Global South, where the trend of urbanization continues, a different approach to our relation with nature is necessary. Ecosystem services and their payments have become a prominent solution to some of those issues. China, while struggling with widespread environmental degradation, has invested massively in local and national compensation mechanisms to reverse some of the damage. While in some regions the results are already becoming visible, inland urban agglomerations have to deal with the dilemma of responding to urban or industrial development demands while also complying with ever stricter environmental regulations. We intend to map the knowledge that informs eco-compensation policies in Chongqing to find out in how far the frame of the Ecological Civilization is changing the preponderance of utilitarian economic reasoning towards cultural and ecological policy-making.

## **Key Words**

Environmental sociology; Ecological Civilization; Ecological compensation; China; risk society.

Climate change and the multi-dimensional risks associated with it, are fundamentally changing how our world is socially and economically organized (Beck, 2016). All around the world, but especially in the Global South, the direction of our understanding of modernity and progress have been called into question. However, within the different capacities and needs of different contexts, the ways in which the urging responses are developed, have started to show an incredible diversity between cultures and within them. This short reflection builds on the results of a project in Environmental Sociology investigating the social and political dimensions of Climate Change in Brazil, China and Mozambique (Ferreira, Barbi & Barbieri, 2021) and looks at rural-urban relations and compensation mechanisms in China to discuss the opportunity of building something like an Ecological Civilization.

In China, the biggest greenhouse gas emitter in absolute terms since 2007, huge efforts have been made to counter the effects of global climate change and environmental degradation caused by the industrial mode of production demanded by global markets. Ecological compensation (eco-compensation) mechanisms have played an important role in this strategy since the early 2000s with central government spending increasing from CNY 2.3 bn in 2001 to CYN 250 bn in 2012 (ADB, 2016). Ecosystem services have come to play a major role in describing the benefits humans obtain from nature. The different approaches to compensating their producers or managers (commonly discussed as "Payments for Ecosystem Services" in the West), are not uncontroversial, but have attracted the interest of states, companies and economics (Schomers & Matzdorf, 2013; Pan et al, 2017; Delang, 2019; Yu et al., 2020).

The way ecosystem services have been calculated, integrated and mainstreamed into various policy fields in China (Wang et al., 2017), in combination with the institutional restructuring at the national level that has put ecological issues at the center of political debate, is certainly a driving force of this development (Hart, 2019). One main reason for this integration is the overarching Ecological Civilization framework that has made sustainable development not only an issue of greening the economy, but taking a wider cultural and political (re)construction approach to the environment (Pan, 2016; Tsui & Wong, 2013).

Cities are the primary demanders for ecosystem services and in the context of continued urbanization projections, expected to reach up to 70% until 2035 (China Daily, 2019) cities are the main drivers of change in this topic. The growth in area of the six major urban regions of China (Beijing–Tianjin–Hebei, Yangtze River Delta, Pearl River Delta, Wuhan, Chengdu-Chongqing, Changsha–Zhuzhou–Xiangtan) was from 23,500 km<sup>2</sup> in 1980 to 62,400 km<sup>2</sup> in 2010. This caused a loss in natural ecosystems of 40,600km<sup>2</sup> only between 2000-2010 (Gao et al., 2020). Growing inland agglomerations like Chongqing play a major role in national development, such as the Western Development strategy and the Belt and Road Initiative, which will further exacerbate conflicts over land use, while facing many challenges related to urban-rural integration. The directly-administered municipality is the only inland city of its kind and holds closer political ties with Beijing, but also functions as a national experimental zone for rural-urban integration.

In our research we focus on how those different factors (urban pressures, nature conservation pressures and [inter]national economic pressures) manifest themselves in the local case of Chongqing in research and policy documents to identify "cosmopolitan communities of risk" (Beck, 2016). Similar to findings by Li & Yarime (2017) about grasslands, we defend the hypothesis that economic reasoning and the continuing need for urban and industrial growth still trump ecological or cultural arguments in eco-compensation mechanisms.

Certainly, compensation strategies are a great first step towards incorporating environmental externalities. However, when commoditizing our relation with the environment in a utilitarian way, it is of utmost importance not to stop here and understand this simple solution as having resolved the problem. Compensation schemes that connect urbanized with rural districts through payment relations have to be accompanied by environmental education to have the necessary social and cultural effects. Recent data from the local initiative of an agricultural park in Chongqing's periphery has shown how school childrens' regular interaction with agriculture raises their appreciation for nature (Wang & Yanai, 2020). This is especially interesting in the Chinese context is that great parts of its population are first or second generation urbanites, many of whom had close connections to "the soil" as farmers or rural communities living in closer connection to natural cycles (Fei, 1992). As such it also turns this topic into an intergenerational discussion.

The current global manifestation of environmental risks can be seen as a pivotal moment for such discussions that we are engaging in today. Policies that integrate approaches to both biodiversity and climate issues are more urgently needed than ever before and the upcoming Conferences of the Parties in Kunming and Glasgow will have to show clear directions in a broader cultural change (Schmidt-Traub et al., 2020). Cities play an ambivalent role in this, both as drivers but also as fora for negotiation of solutions. A "metamorphosis" of our world towards a more Ecological Civilization still seems possible, but

will have to be made up of many types of ecological and cultural knowledge and relations with nature, not to fall into a compensating utilitarian "monoculture".

## References

- ADB - Asian Development Bank. (2016). *Toward a national eco-compensation regulation in the People's Republic of China*. Manila. Retrieved from <https://www.adb.org/sites/default/files/publication/212726/eco-compensation-regulation-prc.pdf>.
- Beck, U. (2016). *The metamorphosis of the world: How climate change is transforming our concept of the world*. John Wiley & Sons.
- China Daily. (2020). Urbanization rate to reach 70 % by 2035: Study. *China Daily*, pp. 12–14. Retrieved from <http://www.chinadaily.com.cn/a/201906/24/WS5d1089b0a3103dbf14329ea7.html>
- Delang, C. O. (2019). The Second Phase of the Grain for Green Program: Adapting the Largest Reforestation Program in the World to the New Conditions in Rural China. *Environmental Management*, 64(3), 303–312. <https://doi.org/10.1007/s00267-019-01185-4>.
- Fei, X. (1992). *From the soil - the Foundations of Chinese Society: A Translation of Fei Xiaotong's Xiangtu Zhongguo*, With an Introduction and Epilogue. University of California Press.
- Ferreira, L. da C., Barbi, F., & Barbieri, M. D. (2021). What Do We Want to Be When We Grow Up? The Political Dimensions of Climate Change in Brazil, China and Mozambique. In *Environment and Development* (pp. 175-199). Palgrave Macmillan, Cham.
- Gao, J., Wang, Y., Zou, C., Xu, D., Lin, N., Wang, L., & Zhang, K. (2020). China's ecological conservation redline: A solution for future nature conservation. *Ambio*, 1-11.
- Hart, C. A. (2019). *From Paris to Beijing: Implementing the Paris Agreement in the People's Republic of China*. Washington D.C. Retrieved from <https://www.atlanticcouncil.org/in-depth-research-reports/report/from-paris-to-beijing-implementing-the-paris-agreement-in-the-people-s-republic-of-china/>.
- Li, A., & Yarime, M. (2017). Polarization and clustering in scientific debates and problem framing: network analysis of the science-policy interface for grassland management in China. *Ecology and Society*, 22(3), art8. <https://doi.org/10.5751/ES-09321-220308>.
- Pan, J. (2016). *China's Environmental Governing and Ecological Civilization*. (X. Bu, F. Cai, P. Gao, S. Hao, P. Huang, Y. Ma, ... X. Zhuo, Eds.). Beijing: China Social Sciences Press / Springer.
- Pan, X., Xu, L., Yang, Z., & Yu, B. (2017). Payments for ecosystem services in China: Policy, practice, and progress. *Journal of Cleaner Production*, 158, 200-208.
- Schmidt-Traub, G., Locke, H., Gao, J., Ouyang, Z., Adams, J., Li, L., ... Wei, F. (2020). Integrating climate, biodiversity, and sustainable land-use strategies: innovations from China. *National Science Review*, (June 2020), 1–5. <https://doi.org/10.1093/nsr/nwaa139>
- Schomers, S., & Matzdorf, B. (2013). Payments for ecosystem services: A review and comparison of developing and industrialized countries. *Ecosystem Services*, 6, 16–30. <https://doi.org/10.1016/j.ecoser.2013.01.002>
- Tsui, S. I. T., & Wong, T. H. (2013). Rural China: from modernization to reconstruction. *Asian Studies: Journal of Critical Perspectives on Asia*, 49(1).

Wang, B., Gao, P., Niu, X., & Sun, J. (2017). Policy-driven China's Grain to Green Program: Implications for ecosystem services. *Ecosystem services*, 27, 38-47.

Wang, R., & Yanai, S. (2020). The Awareness of the Food and Agriculture Experience Program for Primary School Students in Urban Agriculture Park in Chongqing, China. *Papers on Environmental Information Science*, Vol. 34 (pp. 37-42). Center for Environmental Information Science.

Yu, H., Xie, W., Yang, L., Du, A., Almeida, C. M. V. B., & Wang, Y. (2020). From payments for ecosystem services to eco-compensation: Conceptual change or paradigm shift? *Science of the Total Environment*, 700, 134627. <https://doi.org/10.1016/j.scitotenv.2019.134627>