



Botanical aspects of eco-civilisation construction



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ABSTRACT

The concept of eco-civilisation refers to the need for human affairs to be contained within the limits set by nature. Plants play such fundamental roles in the functioning of ecosystems and economies that due attention must be given to them for eco-civilisation to be achieved. Species are the basic functional units of the plant world and, taking a long term perspective, their conservation with their genetic diversity should be a primary objective in eco-civilisation construction. However, standard procedures used for plant conservation have met with only limited success. Therefore, plant conservationists need social allies to boost their efforts – referring to elements of society whose primary interests in eco-civilisation construction are different, but whose efforts, if successful, will bring benefits to plant conservation too. Potential allies can be identified using an ecosystem system services framework showing how benefits received from the delivery of ecosystem services overlap with those that favour conservation of plant diversity. The concept of eco-civilisation was adopted officially in China in 2014 as a principle guiding its future development. A project at Ludian, Yunnan Province, is used to show the relationships between an ecosystem services framework and a conservation initiative.

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1. Eco-civilisation

The world considered as an ecosystem is becoming destabilised by human activities, as demonstrated by climate change and ocean acidification (Stocker et al., 2014). A sixth great mass extinction event may have begun (McCallum, 2015). Tropical forests are being reduced (Baccini et al., 2012), deserts are spreading, large quantities of soil are being eroded, oceanic ecosystems are being polluted by industrially-generated iron fertilisation (Lin et al., 2015) and the lives of many people are being blighted by problematic access to food, water or fuel. Armed conflicts and cases of unsolicited or forced migration can often be interpreted as due, at least in part, to conflicts over scarce resources or triggered by environmental degradation (Kelley et al., 2015; Wendle, 2016). The scale of human impact on biogeochemical systems has become so great that some geologists propose recognition of a new geological period to cover this modern time of great human influence, the Anthropocene (Smith and Zeder, 2013).

The concept of eco-civilisation provides a vision of a future state of harmony between people and nature – a target for attainment. It

was incorporated into the Charter of the Communist Party of China (CPC) at its 18th National Congress in 2012, moving it to the forefront of China's national development strategy. Hu Jintao, then leader of China, explained: "... the essence of the construction of ecological civilisation is building a resource-saving and environmentally friendly society based on the environmental carrying capacity of resources, the laws of nature and sustainable development ...". (The Climate Group, 2014). For the environmentalist, the concept of eco-civilisation is one relevant to everywhere, not just China.¹ Its adoption by China is especially welcome, given the country's large size and global influence, and because China has an exceptional record of turning radical policies into practice (for example the One

¹ The word 'civilisation' is derived from Latin *civis*, originally referring to an inhabitant of a town, but nowadays it has modified meanings. One, according to Wikipedia, is: "any complex society characterized by urban development, social stratification, symbolic communication forms (typically, writing systems), and a perceived separation from and domination over the natural environment by a cultural elite." It is possible to regard virtually all humanity today as belonging to a single global civilization, given the large number of urban dwellers (more than 50% of the global population since 2008), the high degree of connectedness of town and country, the large scale movements of people within and between countries, and the increasing globalisation of economies and cultures. This means that no one country, especially one as internationally influential as China, will be able to achieve the end point of eco-civilisation, unless other countries do so too.

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