Structural Analysis of Cultural Systems
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Highly efficient carbon storage with Paulownia tomentosa

Structural Analysis of Cultural Systems (S.A.C.S.) is a research institution in Special Consultative Status with the United Nations Economic and Social Council. We have been giving recommendations to previous climate related UN sessions (COP 8; COP 25), as well as to UN Water, regarding the properties and capabilities of particular trees that are efficient in counteracting climate-related problems[1].

Here, we would like to turn your attention to Paulownia tomentosa, a deciduous tree which stores about ten times as much carbon as ordinary trees.[2] P. tomentosa is tolerant to many climates, from temporary frost to warm climates, and it is an ideal tree for plantations to participate in carbon trade. As a C4 plant, it does not only have a high potential to absorb carbon, but is also grows quickly and produces high quality wood that can e.g. be used for building music instruments. Since this tree is frost resistant, it can even play a vital role in the reforestation of Iceland. If Iceland would demand from every tourist to bring along tree seeds equivalent to one litre – which could be of various species –, that island could be reforested within a couple of decades. Iceland once was forest-covered up to the mountains; the trees were cut down by settlers within 40 years, and up to now, it still looks like the moon in many places.

Regarding other places like Australia, it would be helpful if strict policies of not allowing non-native trees would be given up, and if the classification of invasive species would be reconsidered; due to the pressing needs of mitigating climate change, we cannot afford to get tangled up in dogmatism. Instead, we should not miss any opportunity of slowing down the global warming. Sequoia sempervirens is already under discussion as a commercial crop in Australia;[3] yet, planting Paulownia tomentosa would be a much more efficient measure against climate change. At the same time, it would attenuate the dominance of Eucalyptus in today's Australia, which is very problematic due to the release of volatile oils that can cause fire storms. In previous eras, Australia was much greener, with a more mixed vegetation of diverse plants. It would be good for the planet and for the climate if this desert continent would be converted back into a land with lush green forests.

For Sub-Saharan regions, Paulownia tomentosa plantations could be run as carbon trade projects. It is well suited for semi-arid regions, near the lakes, where the groundwater is not too far from the surface. But it could also be planted in higher altitudes like in the Altiplano of the Andes in South America. This year, our organisation has donated approx. 1 million Paulownia tomentosa seeds to representatives at UN sessions and academic events, and we would like to encourage other institutions to do the same. And of course, laypersons, too, can contribute to the reforestation of the planet if they bring along tree seeds whenever they come to a deforested area, and disseminate the seeds.

Prof. Dr. Arnold Groh

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[1] Papers downloadable at https://s-a-c-s.net/uno/papers-and-reports-to-the-un/ .
[2] Pros and cons regarding this tree are discussed e.g. at https://thundersaidenergy.com/2020/11/05/paulownia-tomentosa-the-miracle-tree/ (13 Nov. 2022).
[3] https://agrifutures.com.au/farm-diversity/californian-redwood/ 13 Nov. 2022