
Plantaclim, an interdisciplinary project to study the ecosystem services provided by forest plantations

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Résumé

The area of forest plantations is increasing around the world. This is particularly evident in the case of fast-growing plantations, which are helping Asian countries such as Vietnam to accelerate their forest transition. Of course, these artificial stands, often planted with exotic species, must be treated with caution. Yet they are particularly encouraged in the current context of accelerating climate change. They appear to be a means of mitigation, through the sequestration and storage of carbon and/or the avoidance of CO₂ emissions through the production of local bio-sourced materials, replacing other more energy-intensive materials (concrete, etc.). They are also a way of adaptation, by allowing the introduction of species from regions with a climate similar to that expected in the region where they are introduced. Thus, forest plantations will play an increasingly role and we consider that it is important to study them, to know better the services (and disservices) they provide. It is the objective of Plantaclim, an interdisciplinary research project funded by the Centre-Val de Loire region and led by UMR CITERES (2021-2024). Alongside UMR CITERES, 14 partners (4 academic and 10 socio-economic) took part.

The team focused on forest plantations of the Centre-Val de Loire region, using the example of maritime pine and poplar plantations. Both are expected to remain in place despite climate change, and the area of maritime pine is even growing, mainly replacing dying Scots pine. To study these plantations and their (dis)services, the project comprised 4 main tasks.

We began by making an inventory of these plantations and the services they provide (Task 1), and selected 6 study sites. Within these, we selected 56 pairs of plots, combining poplar plantations and subnatural woodlands or pine and oak stands of different ages, for the surveys. The particularity of the project was indeed to compare native stands and plantations (for soil and plant biodiversity).

We then studied the environmental (Task 2) and socio-economic (Task 3) characteristics of the studied plantations, in order to gain a better understanding of the support, provisioning

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and cultural services associated with these plantations. We thus analyzed the characteristics of their soils, the associated plant and entomological biodiversity, the advantages and obstacles for the entire forest-wood sector (from tree planting to wood processing), leisure activities and the representations of these plantations by stakeholders, local residents and users.

In the task 4, the results were crossed on a spatial basis. This task was also an opportunity for researchers and local stakeholders involved in the project to discuss ways of improving these plantations, taking into account climate and socio-economic changes, while ensuring that they meet society's expectations, limit negative impacts on the environment and landscapes, and promote the use of local bio-sourced materials, in order to help secure the future of the industry in the region, by making it part of a sustainable approach.

Mots-Clés: Forest plantations, ecosystem services, biodiversity, representations, forest wood sector