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**DEVELOPMENT OF INNOVATIVE
ALTERNATIVE CROPS
FOR THE PRODUCTION OF NATURAL
RUBBER**



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Guayule (*Parthenium argentatum*): Towards a model of sustainable bio-sourced value chains that contribute to the agro-ecological transition

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Agriculture is often pointed out as a contributor to environmental disruption. However, it offers the means to mitigate climate change and build innovative, resilient and productive agro-ecosystems. These multifunctional ecosystems would enable diversified and sustainable exploitation of natural resources, while preserving and restoring ecosystem services. The condition would be the design of an innovative alternative model of sustainable and restorative multifunctional agriculture. The French economic social and environmental council (the consultative assembly « CESE ») calls for the integration of sustainability goals to those of added value to achieve a sustainable bioeconomy. A bioeconomy which implements agronomic practices that preserve and maintain soil fertility while respecting biodiversity¹ A paradigmatic innovation is therefore necessary for the emergence of a new model of a so-called sustainable and responsible bioeconomy.

1 Vers une bioéconomie durable Jean-David Abel et Marc Blanc, Avis du CESE(Conseil économique, social et environnemental) Mars 2017

https://www.lecese.fr/sites/default/files/pdf/Avis/2017/2017_08_bioeconomie_durable.pdf

2 FAO 2018. 10 elements of agroecology that can guide us toward sustainable food systems

3 HLPE. 2019. Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome 2019. Full report forthcoming at www.fao.org/cfs/cfs-hlpe.

This communication is the result of a reflexive approach to a cluster of projects aiming at the construction of a guayule production and processing sector in the South of France. This exercise offers an opportunity to draw from research projects finished or under way, a generic methodology to develop innovative agricultural value chains that are part of a performing, shared (multi- stakeholders) and sustainable bioeconomy. Sobriety and effectiveness will aim at the recyclability and the optimization of the use of resources at the level of the territory with, ideally, a multi-valuation of the products and by-products, according to the principles of circular economy and biorefinery. We hypothesize that the principles of agroecology as defined by FAO² and HLPE³ are building blocks for a sustainable transition bioeconomy. We mobilize them to identify sustainability components using a systemic approach that brings together production, supply and processing of bioresources, product valuation and ecosystem maintenance activities within the territories. The creation of a network of stakeholders for the co-construction of the sector on the territory is highlighted as well as the circular economy features. Through this analysis of creation of an innovative sector of production and valuation of Guayule, we demonstrate (evidence base) the possibility of building a sector according to agroecological principles. The approach is based on systemic integration of the different modules of the value chain to satisfy, in fine and jointly, the very often opposed objectives of productivity, profitability, sustainability, health, equity.

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