

Whereas the new stakes on lignocellulosic biomass are often demand-oriented (heat, electricity, biofuels,...) mainly through public policies, the new equilibriums will depend also on the supply-side. This supply has to be understood as socio-economic and environmental targets combining many topics: multi-resources (agriculture, forest, “dedicated coppices”), available/potential quantities and costs, localisation, replacement/substitution effects (lands, activities), and supply-side stakeholders’ behaviours. ECOBIOM aims to propose different tools to assess the appropriate and perennial procurement conditions to feed the bioenergy units. Those tools have been declined in several complementary parts.

The first part deals with the development of a generic methodology allowing a multicriteria optimisation of the biomass supply from the agriculture and the forest at a local geographic unit (district). This unit is particularly accurate in comparison with existing studies (Guindé et al., 2007¹) and does not need to use a “top-down” approach demanding by the uses of more aggregating models (Cantelaube et Jayet, 2008 ; Hellmann et Verburg, 2008²). The model is based on different methodologies developed within the project: a district typology combining district and soil categories, an ‘easy-to-do’ estimation of the straw potential, information on the farmers’ willingness to sell straw, costs and technical operations, by pedoclimatic contexts, for crops dedicated to food or energy, an assessment of the wood quantities available for cuttings by district and associated costs, an evaluation of the areas and potential quantities of Poplar short rotation coppices on agricultural lands, an estimation of the impacts using the LCA methodology (ANABIO 2008³), transport and storage costs. This model has been tested on a French region, Champagne-Ardenne, and can be used for other regions and territorial areas.

The second part focuses on the forest/wood questions due to specific and recurrent questions raised on mobilising this resource (Barkaoui A., 2005⁴ ; CEMAGREF 2008⁵) in private forest in particular (CGAAER, 2007⁶) and the expectations made on the new biomass resource that short rotation coppices (SRC) are (a mix of agricultural and forest) (Ach F., Valenzisi, 1997⁷). A theoretical model of the wood market at the national level has been developed taking into account the competition on the available resources from different sectors, the heterogeneous needs concerning the quality requirement of those sectors, the by-products dimension of the forest harvesting. The private owners behaviours have been analysed through surveys (private and public forest) and audit (private forest). If there is not a reluctance to feed the forest chips market, it has not been possible to quantify their willingness to supply more (whatever the outlet was). Institutional or organisational systems exist for gathering private forest properties (for the management and the sales). Some can be one way to increase the wood mobilisation. For SRC, if they are not economically attractive by now, they have a potential on territorial development projects.

¹ Guindé L., Jacquet F., Millet G. (2007), « Impact du développement des biocarburants sur la production française de grandes cultures », Papier présenté aux « Journées INRA-SFER », Décembre, Lille.

² Cantelaube P., Jayet P.A. (2008), “Geographical downscaling of outputs provided by the AROPAj economic farming model”, Congress of the European Agricultural Economists Association, August 2008, Ghent, Belgium. 12; Hellmann F., Verburg P.H. (2008), “Spatially explicit modelling of biofuel crops in Europe”, *Biomass and Bioenergy* (in press).

³ IFP (coordinateur) (2008), *ANABIO – Analyse environnementale et socio-économique des filières de production d’énergie ex-biomasse*, Projet ANR-PNRB 2005.

⁴ Barkaoui A. (2005), « An econometric modelling of domestic French wood supply/demande », *mimeo*, ENGREF-LEF.

⁵ CEMAGREF (2007), *Biomasse forestière disponible pour de nouveaux débouchés énergétiques et industriels*, Rapport pour le Ministère de l’Agriculture.

⁶ CGAAER (2007), *Audit de la forêt privée sur la première mise en marché des bois*, Mars, Rapport pour le Ministère de l’Agriculture, Conseil Général de l’Agriculture, de l’alimentation et des espaces ruraux, n° 1217.

⁷ Ach, F., Valenzisi M. (1997), Perspectives de développement des TCR d’eucalyptus dans le Sud-Ouest - Rapport d’audit patrimonial, Afocel.

The third part, closely linked with part 1 in terms of methodology, aims to give more direct answers to a broad audience concerning the agricultural and forest biomass. Some dynamic maps found on the [Ecobiom website](#)) allows the user to choose one/several resource(s) and to select one/several geographical departments (medium geographic unit between the above district and an administrative region) in order to simulate a biomass procurement area. The available information (quantities, costs, competition index) needs to be carefully interpreted and do not pretend to give precise data for a specific unit.

Finally, ECOBIOM has led to an improvement of the combining approach of topics and provides original tools. While trying to get a generic way to work, most of the data are from expertise. This is one of the conclusions of the work done to develop the district multicriteria model and tested on Champagne-Ardenne. However, using expertise data are not possible for calibrating a theoretical model such as the one done on wood market. More thorough and systematic developments (regular surveys for instance, improvements of the public statistical system, observatories) and/or specific work at local level could improve the work done in the project.