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Optimization of sustainable forest-based biomass supply chains

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There has been an increased interest in using forest-based biomass as the feedstock in bioconversion facilities to produce bioenergy, biofuels and biomaterials in forest rich countries such as Canada. This renewable source has the potential to reduce dependency on fossil fuels, decrease emissions, and create jobs in rural communities which are important factors in sustainable development. Therefore, in addition to economic feasibility, the environmental and social impacts of this renewable source are other key factors in sustainable planning. Proper planning and decision making related to sourcing of biomass, its transportation and logistics, and production and distribution of bioproducts affect the cost competitiveness of bioproducts and the sustainability of its supply chain. Optimization and simulation models have been developed to support biomass supply chain planning. This talk highlights the complexities and issues related to forest-based biomass supply chains and the recent trends in modelling those supply chains. It focuses on the optimization models that we developed to incorporate uncertainty and variability, especially those related to the quality and quantity of biomass, into the modelling as well as those models to integrate economic, environmental and social impacts of forest-based biomass supply chains. The results of models applied to real case studies in Canada will also be presented.

Biography

Taraneh Sowlati is a Professor at Department of Wood Science, The University of British Columbia, Canada. She is involved with many projects. She has done many publications in National and International journals.

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