

Research on Socio-Technological System Planning for Enhanced Biomass Utilization

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[Abstract]

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This project has been successfully completed with providing a Socio-Technological System (STS) to realize the enhanced biomass resources utilization in Japan. By developing this system, many biomass utilization problems can be solved, especially those of biomass resources, logistics and conversion process technologies to final products.

Technological Information Infrastructure (TII) which enables us to evaluate different scenarios will make possible to utilize biomass resources in terms of cost, LCA and/or environmental accounting. Every scenario has to involve entire material flows from resources collection to final products and bi-products, and their operation.

A new planning scheme has been proposed for biomass resources utilization that fulfills the anxieties and requirements of many different stakeholders through a sociological analysis of existing policies, public-consensus and involved institutions based on the neutral standing point. By creating unique scenarios with applying above-mentioned methodologies to the Chunan region, Hirosaki City, Kuroishi City, and Middle and South Tsugaru, a new feasible biomass utilization network and its operation were proposed.

The main themes of the scenario described in this report are as follows.

- * How to realize the environmentally sustainable agriculture
- * Effective utilization of apple pruned off branches
- * Sustainable sewage and municipal garbage treatment system

As the result of above scenarios, we can understand that biomass supply chain would be the most critical in terms of cost and environmental impact rather than individual conversion technologies.