

Woody pellets & Sustainable Development Goals

Southeast United States supply chain case study

Summary

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Summary

Wood-based pellets are shipped from the Southeast US (SE US) to Europe to displace coal for generation of heat and power. Effects of the supply chain are evaluated using industry information, available energy consumption data, and published research findings. Challenges associated with identifying relevant SDG goals and targets for this bioenergy supply chain and potential deleterious impacts are discussed. Strengths of the SE US pellet supply chain include provision of employment in economically depressed rural areas and the displacement of fossil fuels. Weaknesses include potential impacts on air, water, and biodiversity if the resource base and harvest activities are improperly managed. The SE US pellet supply chain provides an opportunity for transition to low-carbon industries while incentivizing better resource management. The full report is [Kline et al. \(2021\)](#).



Figure 1. The SE US pellet supply chain generates positive effects on several SDGs including affordable and clean energy (7), decent work and economic growth (8), industry innovation and infrastructure (9), responsible consumption and production (12), and life on land (15).

OBJECTIVES AND APPROACH

Evaluating how production of wood pellets in the SE US affects the SDGs provides insights about opportunities and constraints for similar supply chains to contribute to social, environmental, and economic improvements. The analysis was based on a review of literature and supply chain data. Challenges are discussed and major lessons are presented.

EVALUATION OF THE SE US PELLET SUPPLY CHAIN

Strengths	Opportunities	Weaknesses	Threats
• Displacement of fossil coal • Reduced risks from wildfire, disease, & pests • Increased forest values & incentives to retain private land in forests • Conservation of forests through green economy jobs & more efficient use of residues	• Dispatchable power that complements intermittent renewable energy sources • Help transition to low-carbon economy • More efficient, decentralized, & affordable energy • Rural jobs, investments, & innovations • Benefits to water quality and wildlife	• Prolongs use of inefficient, centralized power plants • Combustion emissions & variable time for carbon payback • No current domestic US policies to support use • Negative impacts on SDGs & environment if improperly implemented	• Exclusion of wood-based bioenergy in climate programs • Lack of awareness of local context & outcomes if biomass markets are eliminated • Inadequate understanding of role for improved management to conserve SE US forest ecosystems

NEED FOR COOPERATION

Close cooperation between regional and local stakeholders—including small forest landowners, forest sector industries and service providers, forest inventory and monitoring, and local communities—are critical for building the trust required to reap social, economic, and environmental benefits from the pellet supply chain. Reliable and timely data on forest conditions, including how pellet supply chains can be managed to increasingly support healthy and resilient forest ecosystems, are also important for making progress toward the SDGs and local development priorities.

Conclusions

The SE US pellet supply chain is important for forestry activities and investments in communities and ports servicing pellet processing mills. While the pellet supply chain is a tiny share of total biomass processed by SE US forest industries, sustainability requirements for pellets influence wider forestry practices and increase investments in conservation. While SDGs indicators provide common national targets, context-specific goals and indicators are recommended to assess effects of specific industries. The SE US pellet supply chain must adapt to site-specific social and environmental sensitivities as it responds to opportunities presented by high volumes of low-value forest resources lacking other markets. Continued monitoring, adaptive management, and stakeholder engagement are recommended.