

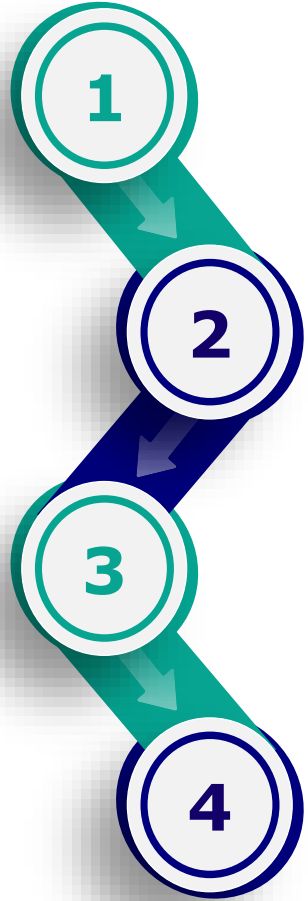


FutureScale^x

CASE STUDY

Driving raw material diversification through sustainable non-wood fibers

Executive summary: A global pulp producer advances feedstock diversification through strategic supply chain analysis



SITUATION

A global leader in sustainable packaging and paper production sought to diversify its raw material base by exploring non-wood fiber sources. The initiative focused on enhancing sustainability in key European markets.

CHALLENGE

The company needed to identify regional supply chains and feedstocks in target European countries that could deliver scalability, cost-effectiveness, and environmental benefits while minimizing Scope 3 emissions.

SOLUTION

FutureScaleX (FSX) developed a structured four-step framework to assess non-wood fiber sources. The approach included: creating a long list of options, analyzing upstream supply chains, evaluating country-specific insights, and prioritizing the most viable and sustainable sourcing strategies.

IMPACT

- Recommended country prioritization strategies for non-wood fiber sourcing.
- Identified 8 feedstocks with highest potential for scalability and sustainability.
- Proposed supply chain partners and engagement strategies to support diversification efforts.

Business context

Our client, a global leader in sustainable packaging and paper production, is advancing its raw material diversification strategy to reinforce its sustainability commitment. A key focus of this initiative is exploring non-wood fiber sources to improve environmental performance, reduce supply chain risks in key European markets, and meet growing regulatory and market demands for greener solutions.

FSX was engaged to evaluate the potential of non-wood fibers and deliver actionable recommendations aligned with the client's goal of cutting Scope 3 fossil CO₂e emissions by 50% from 2019 levels by 2030, while fostering long-term sustainable growth.

Business requirement

The client enlisted FSX's expertise to perform a comprehensive analysis of non-wood fiber streams across key European markets. The study focused on evaluating the availability, pricing, seasonality, quality, and fiber composition of these feedstocks. It also assessed supply chain viability and environmental impacts, including CO₂ emissions, water usage, land use, and soil remediation.

This in-depth analysis was designed to support strategic decision-making for prioritizing countries and feedstocks, enabling the client to achieve raw material diversification and ensure long-term sustainability.

The FSX solution framework

FSX utilizes a 4-step process to Enable efficient and sustainable non-wood fiber sourcing strategies

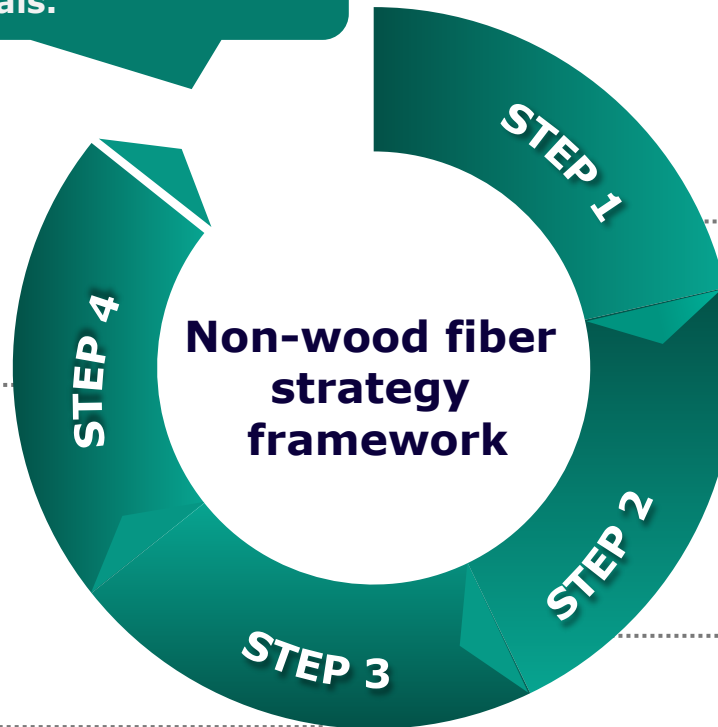
Clearly defined roadmap to optimize supply chains and diversify raw materials.

COUNTRY PRIORITIZATION & ACTION PLAN

- Prioritize countries using an attractiveness matrix and provide strategic recommendations for next steps.

COUNTRY-SPECIFIC INSIGHTS

- Identify target feedstocks, available volumes, and define procurement strategies.
- Define the supply chain structure and highlight key sourcing hotspots.



NON-WOOD FIBERS LONG LIST

- Identify and compile non-wood fibers suitable for paper and pulp
- Pre-screen and select feedstocks based on relevance to paper applications and supply chain feasibility.

UPSTREAM SUPPLY CHAIN ANALYSIS

- Estimate feedstock availability, pricing, and demand across key suppliers and regions.
- Assess environmental impacts (water, CO2 footprint) and fiber quality (length, composition).

Impact

- Prioritized key countries for supply chain development by evaluating supply chain maturity, feedstock availability, and volume potential to optimize procurement strategies across European markets.
- Conducted a comprehensive upstream supply chain analysis, identifying the top eight feedstocks in target countries, based on market availability and environmental impact, to streamline procurement alignment across regions.
- Developed a strategic partner engagement plan, identifying critical supply chain partners in priority countries and outlining actionable steps to enable sustainable and efficient feedstock procurement.

Sample output

Prioritize Country #1, followed by Country #2; deprioritize Country #3 for feedstock #1 utilization

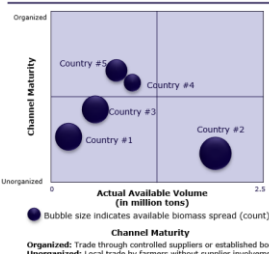
FSX RECOMMENDATION ON COUNTRY PRIORITIZATION AND NEXT STEPS

- ➔ Prioritize Country #1; focus on feedstock #1 and feedstock #2 through company A and XXXX (via association AAA)
- ➔ Next target Country #2 for feedstock #1 and feedstock #2 via XXXX connections through cooperatives & associations
- ➔ Deprioritize Country #3 and Country #4 for feedstock #1; focus on feedstock #2 via company A/ company B / company C

Critical considerations:

- Buy-sell mechanism is in near XXXX state for XX countries; >XX% of transactions happen directly with farmers
- Creating a XXXXX will be one of the key steps to tap the full potential of biomass volumes in the future
- XXXX education (direct or indirect) is critical to onboard them to the idea of selling to XXXXX vs. XXXXX

COUNTRY ATTRACTIVENESS MATRIX



● Bubble size indicates available biomass spread (count)
Channel Maturity
Organized: Trade through controlled suppliers or established bodies.
Unorganized: Local trade by farmers without supplier involvement.

Country #1 : Supply chain strategy

SUPPLY CHAIN STRUCTURE AND PROCUREMENT PROCESS

01 For Feedstock #1



The current trade is XXXX and XXXX, led by XXX at an average price of ~€XX/ton*. Engaging with cooperatives such as AAA and BBB enables a direct link to XXXX, as they possess the contact details of XXXX in country #1.

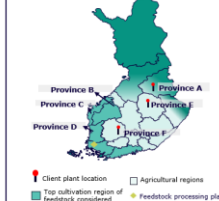
XXXX prefer one-year contracts due to weather risks. To secure long-term contracts, address XXXX concerns on ROI, strategic intent, purpose of use, and annual volume needs, considering weather risks.



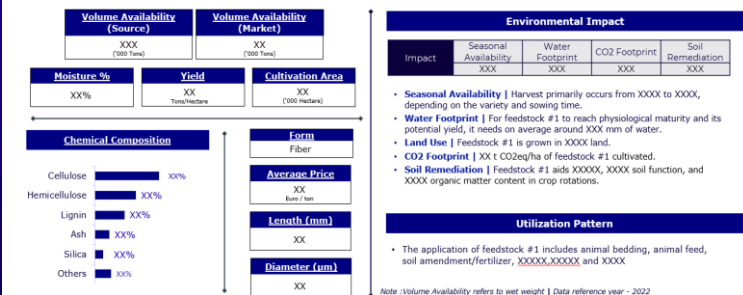
Sources: FSX analysis, Primary interviews with industry experts.

AGRICULTURAL HOTSPOTS

Feedstock #1: Province A (XX%), Province B (XX%), Province C (XX%)
Feedstock #2: Province D (XX%), Province E (XX%), Province A (XX%)
Feedstock #3: Province F (XX%), Province B (XX%)
Feedstock #4: Province A (XX%), Province B (XX%)



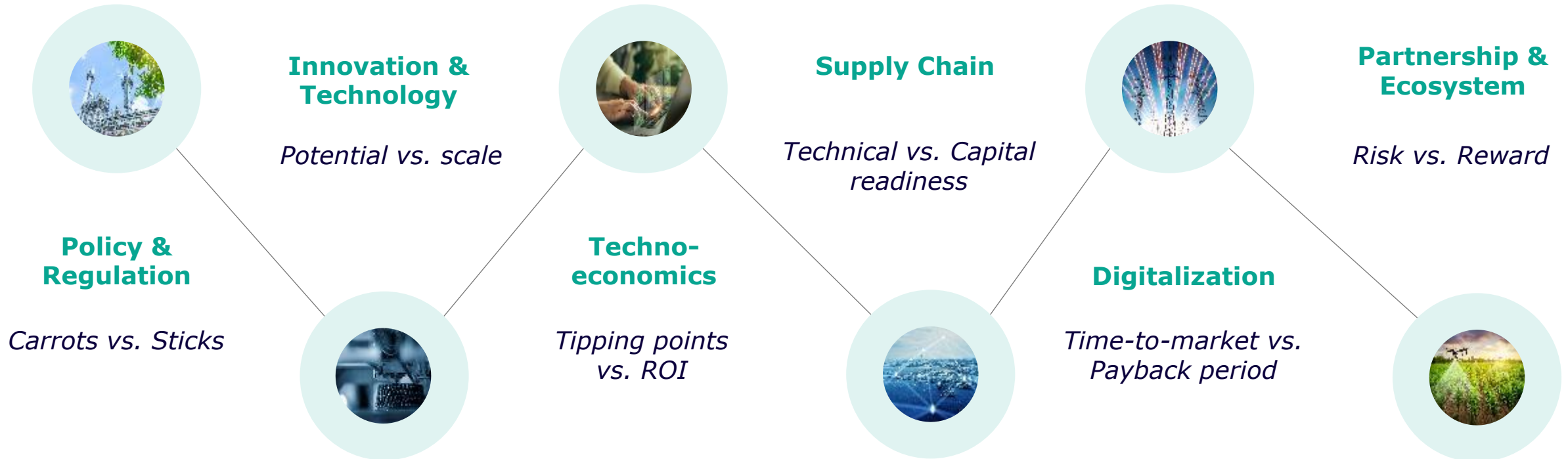
Country #1 : Feedstock #1 profile



Sources: BioScaleX, secondary sources including FAO, scientific journals, and primary interviews.

Methodology

The FSX Sustainable-Growth-as-a-Service™ Methodology



Connected, systems-level thinking to identify the tipping points and solutions that matter.



Are you ready to grow sustainably?

At FutureScaleX, we believe that the future of business lies in sustainable growth. Our six-lens methodology is more than just an approach—it's a movement towards a more resilient and sustainable future.

FutureScale^X

Connect with us.

To request more information such as a meeting, demo, trial, or referral, please visit our website:

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