Documentation and measurement of sustainability in supply chains of the industrial wood pellet industry of the southeast U.S.

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STUDY PURPOSE

1. What is *driving engagement with sustainability initiatives*?

2. Which sustainability initiatives are *most common for demonstrating compliance* with sustainability criteria?

3. Where are the largest *challenges* to documenting *compliance with sustainability criteria*, and where is the largest potential for improvement?

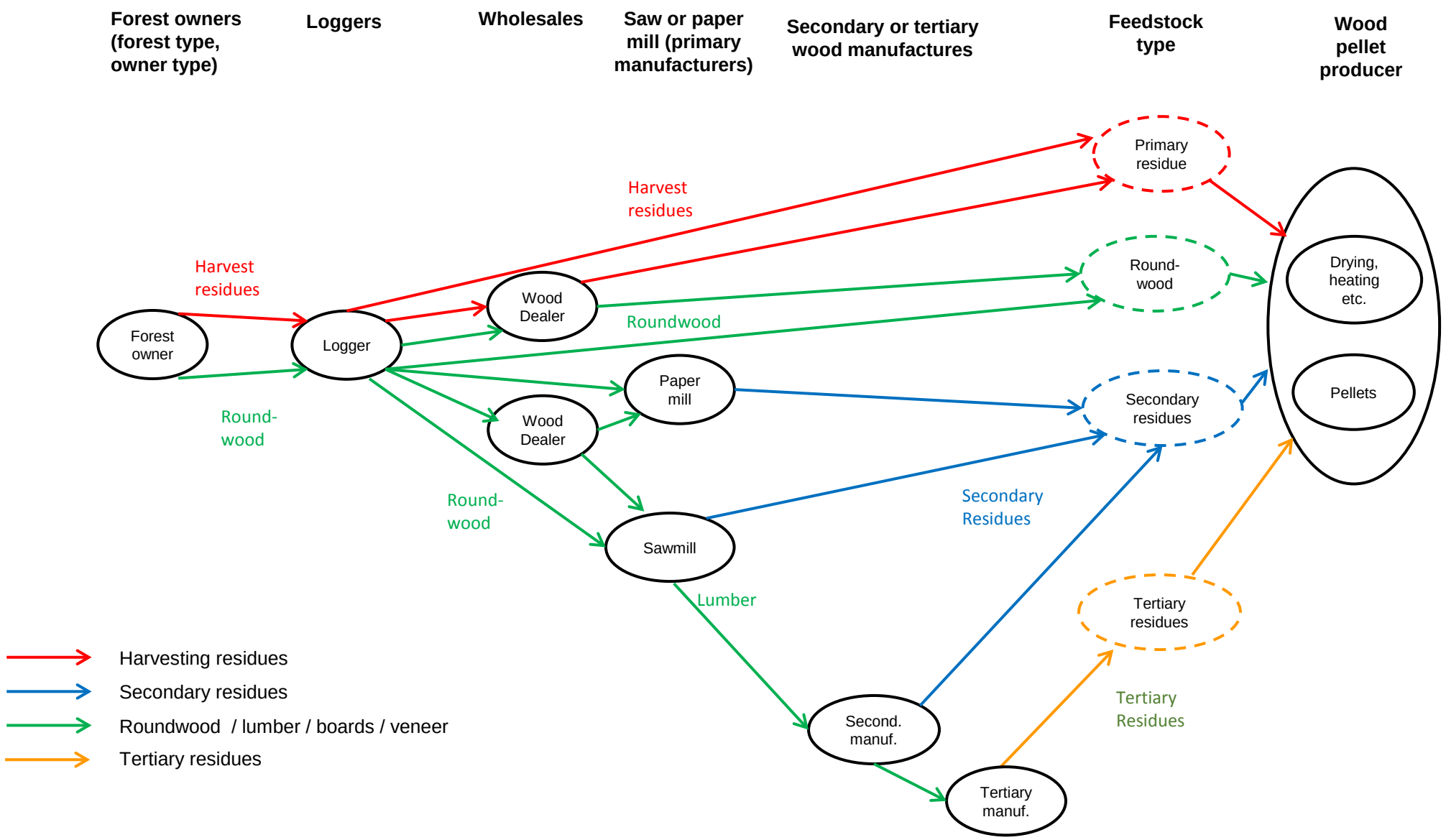
4. Where are the largest *challenges to tracking documentation*, and where is the largest potential for improvement?

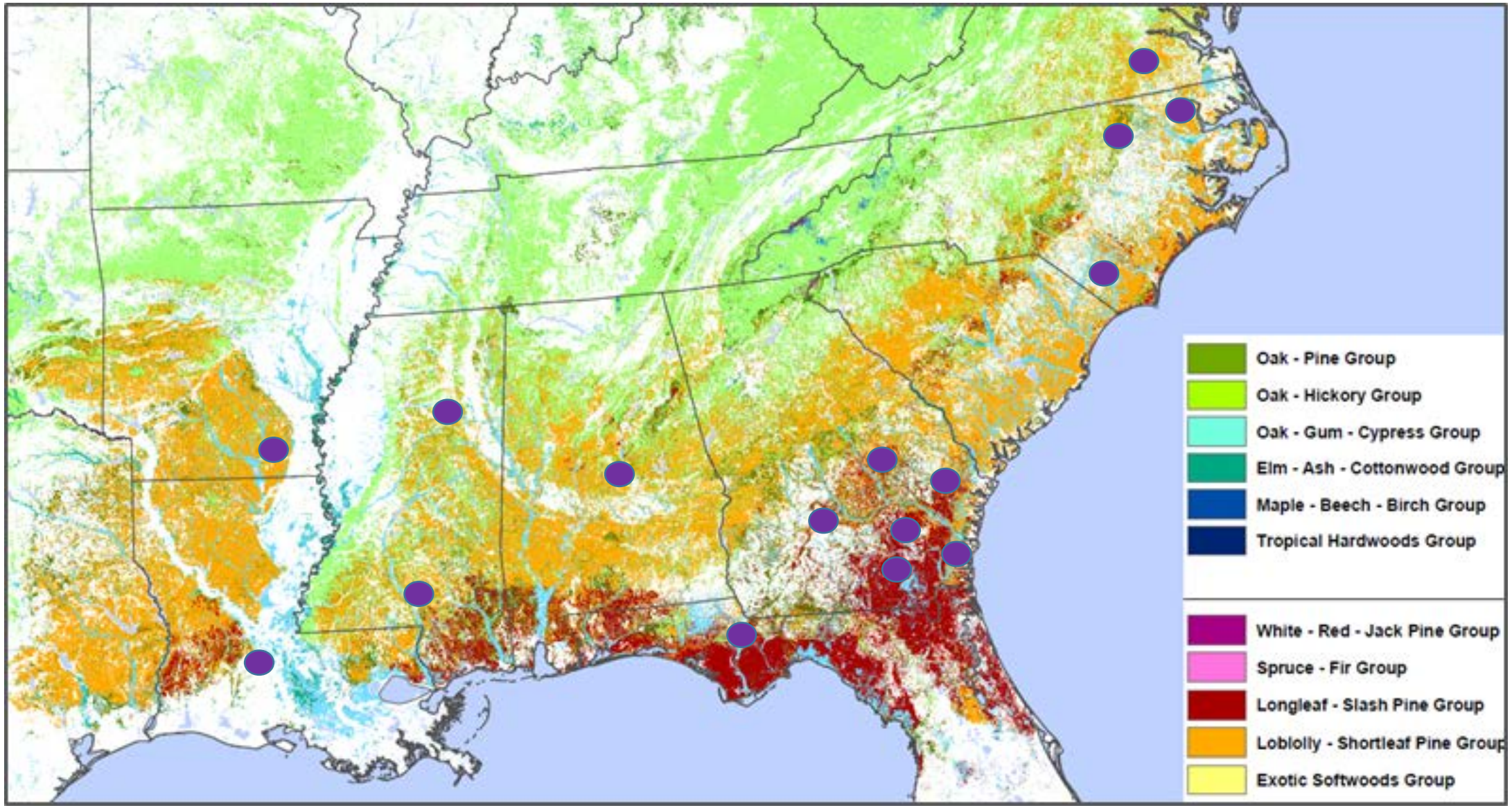
5. What are the largest *challenges in communications* with stakeholders?

METHODS

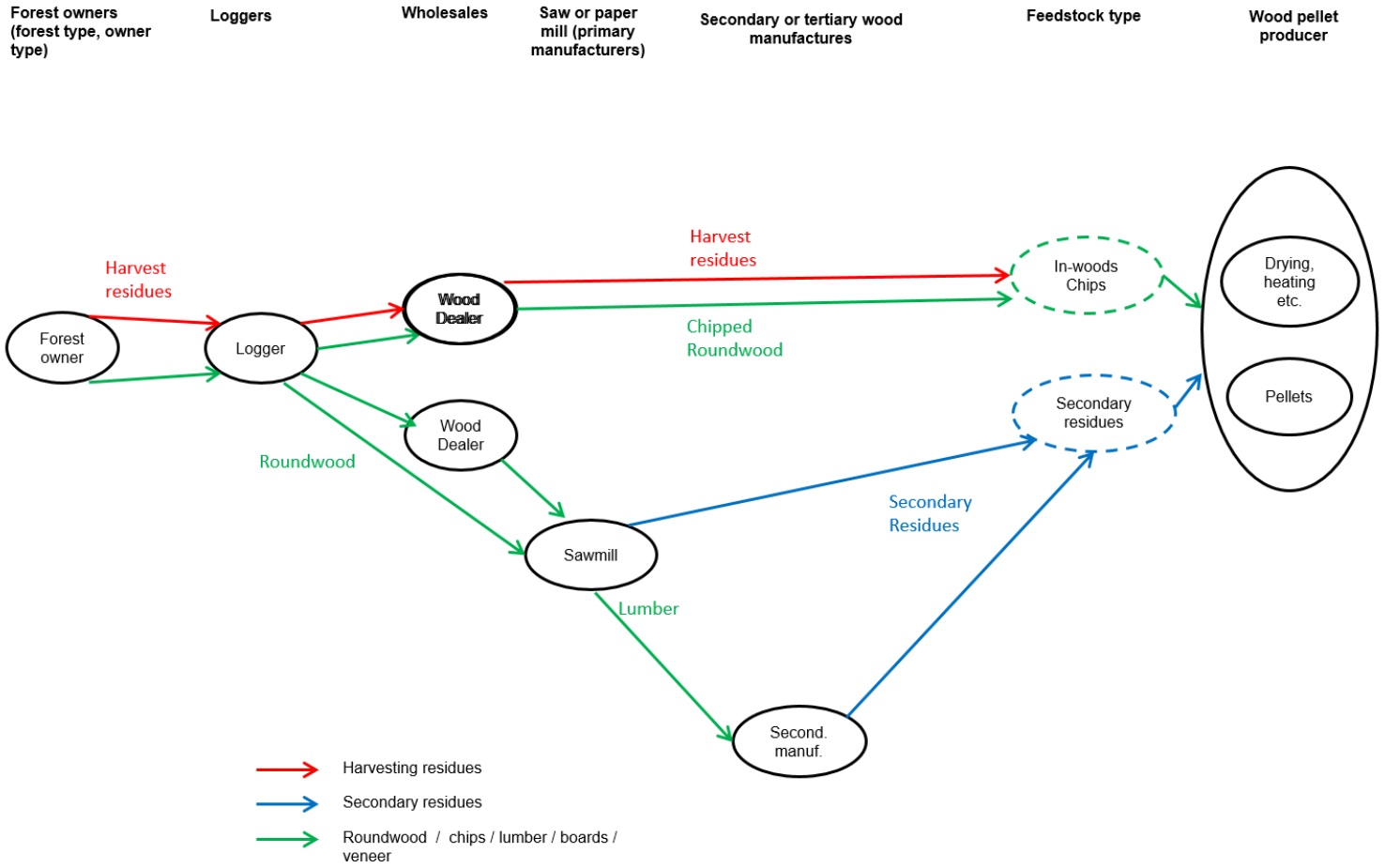
- Structured interviews
  - Recorded and transcribed. 28 questions plus sub-questions. Schematic of supply chains. Feedstock definitions.
  - 11 individuals from 6 companies (sustainability managers & procurement staff)
  - 16 mills total (2 aggregated) representing +6 million MT/yr production capacity (>50% of total export capacity of U.S.).

- Analysis
  - Content analysis of transcripts.


Forest owners (forest type, owner type)
Loggers
Wholesales
Saw or paper mill (primary manufacturers)
Secondary or tertiary wood manufactures
Feedstock type
Wood pellet producer
Forest owner
Harvest residues
Round-wood
Logger
Harvest residues
Wood Dealer
Roundwood
Wood Dealer
Paper mill
Round-wood
Sawmill
Lumber
Second. manuf.
Tertiary manuf.
Secondary Residues
Tertiary Residues
Primary residue
Round-wood
Secondary residues
Tertiary residues
Drying, heating etc.
Pellets
Harvesting residues
Secondary residues
Roundwood / lumber / boards / veneer
Tertiary residues


Oak - Pine Group
Oak - Hickory Group
Oak - Gum - Cypress Group
Elm - Ash - Cottonwood Group
Maple - Beech - Birch Group
Tropical Hardwoods Group
White - Red - Jack Pine Group
Spruce - Fir Group
Longleaf - Slash Pine Group
Loblolly - Shortleaf Pine Group
Exotic Softwoods Group

CASE I



- 120,000 MT/yr
- 75% residues ~40 sawmills; 10% is residuals ~15 secondary wood processing; 15% in-woods chips
- Pine and upland hardwood
- 80 km primary fiber; residuals 120 km
- 15% under long-term contract with one industrial landowner
- Long-term volume-based contracts with wood dealers

CASE 1

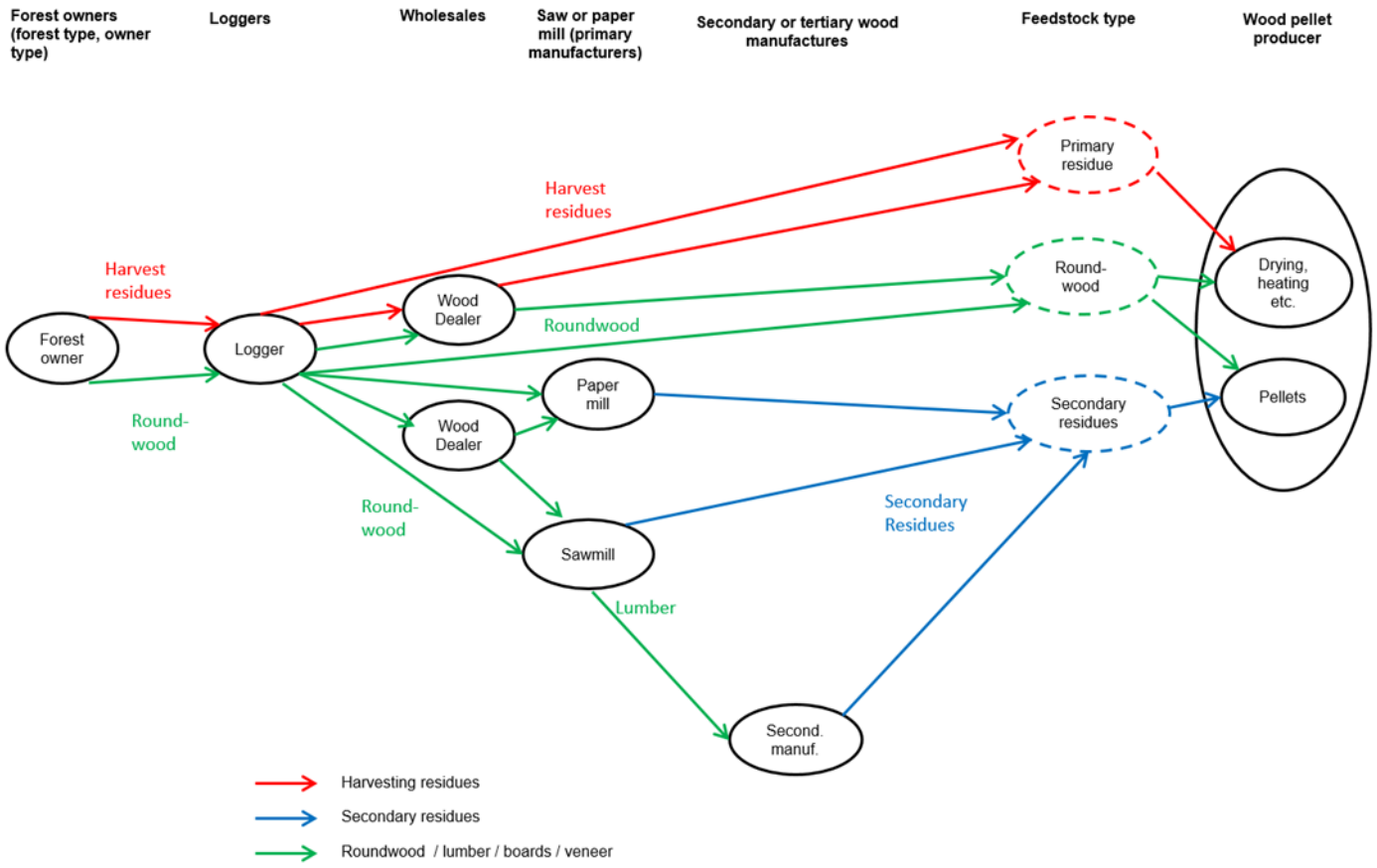
SUSTAINABILITY GOVERNANCE

- Percentage from certified lands: 15% SFI-1 industrial landowner primary fiber; 5% of sawmill residues FSC; 30 - 35% sawmill residues SFI.
- Systems used: FSC Controlled Wood & COC; PEFC Controlled Sources; going through SBP certification

VERIFYING COMPLIANCE

- Long-term volume-based contracts with wood dealers are a key part of risk mitigation as these are linked to risk assessments, analysis of district of origin of secondary residuals, and a track & trace program for primary fiber.
- Quota system on suppliers may influence certified content.

CASE 2



- 450,000 MT/Yr
- 60 – 70% pulpwood (roundwood and in-woods chips); 10 – 20% harvest residues-tops; 20% sawmill residuals
- 20 - 30% from wood dealers
- Numerous short-term contracts with landowners. One longer contractPine; upland hardwood
- 120 km primary fiber and mill residuals
- 30 – 40% NIPF (will grow to 60%); 25 - 30% industrial; 5 – 10% public

CASE 2

SUSTAINABILITY GOVERNANCE

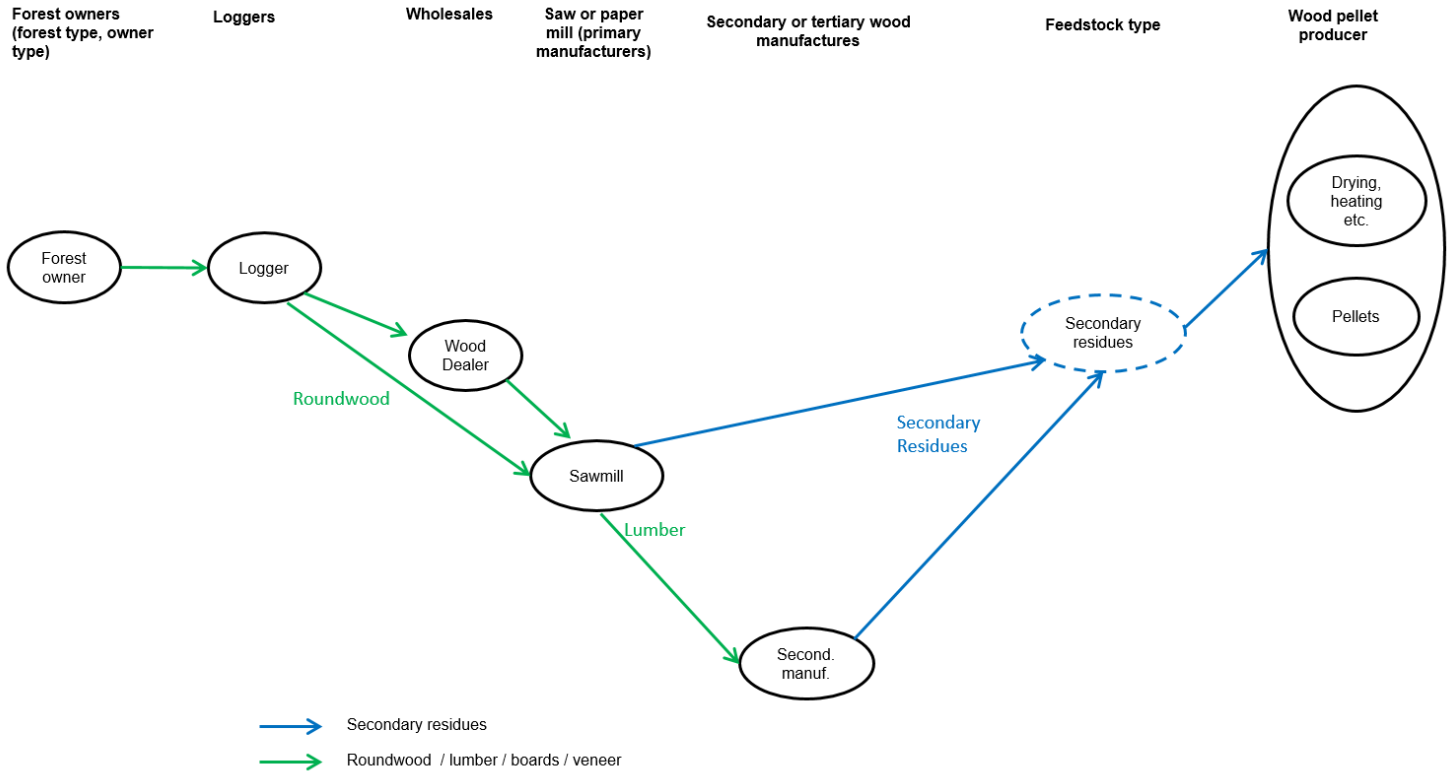
- Percentage from certified lands: 40 – 50% SFI; 5% ATFS
- Systems used: SBP; FSC Controlled Wood & COC; PEFC Controlled Sources & COC; SFI COC; SFI Fiber Sourcing.
- Customer requires COC certification and SBP and procurement staff integrate this into short-term contracts with wood dealers.
- MOU with local stakeholders regarding sourcing from sensitive areas and type conversion.
- Partnership to encourage ATFS certification with non-industrial private forest owners.

CASE 2

VERIFYING COMPLIANCE

- SBP, FSC CW, PEFC CS risk assessments/due diligence completed with help from a consultant.
- Data used: FSC draft national risk assessment; NatureServe to identify known occurrence of T&E species; spatial data to ID rare ecological communities. For primary fiber they cross check every tract against these data.
- Use state logger training. Redrafted training program with SFI state implementation committee.
- Use general SFI outreach material and targeted outreach material regarding ATFS certification.
- Participate in state level BMP monitoring via SFI state implementation committee and inspect ~10% of primary harvest.

CASE 3



- 200,000 MT/Yr
- Upland hardwood & pine residuals
- ~60 sawmills and ~10 secondary manufacturing facilities from 6 states
- 70% NIPF; 25% industrual; 5% state
- Short-term contracts with dealers

CASE 3

SUSTAINABILITY GOVERNANCE

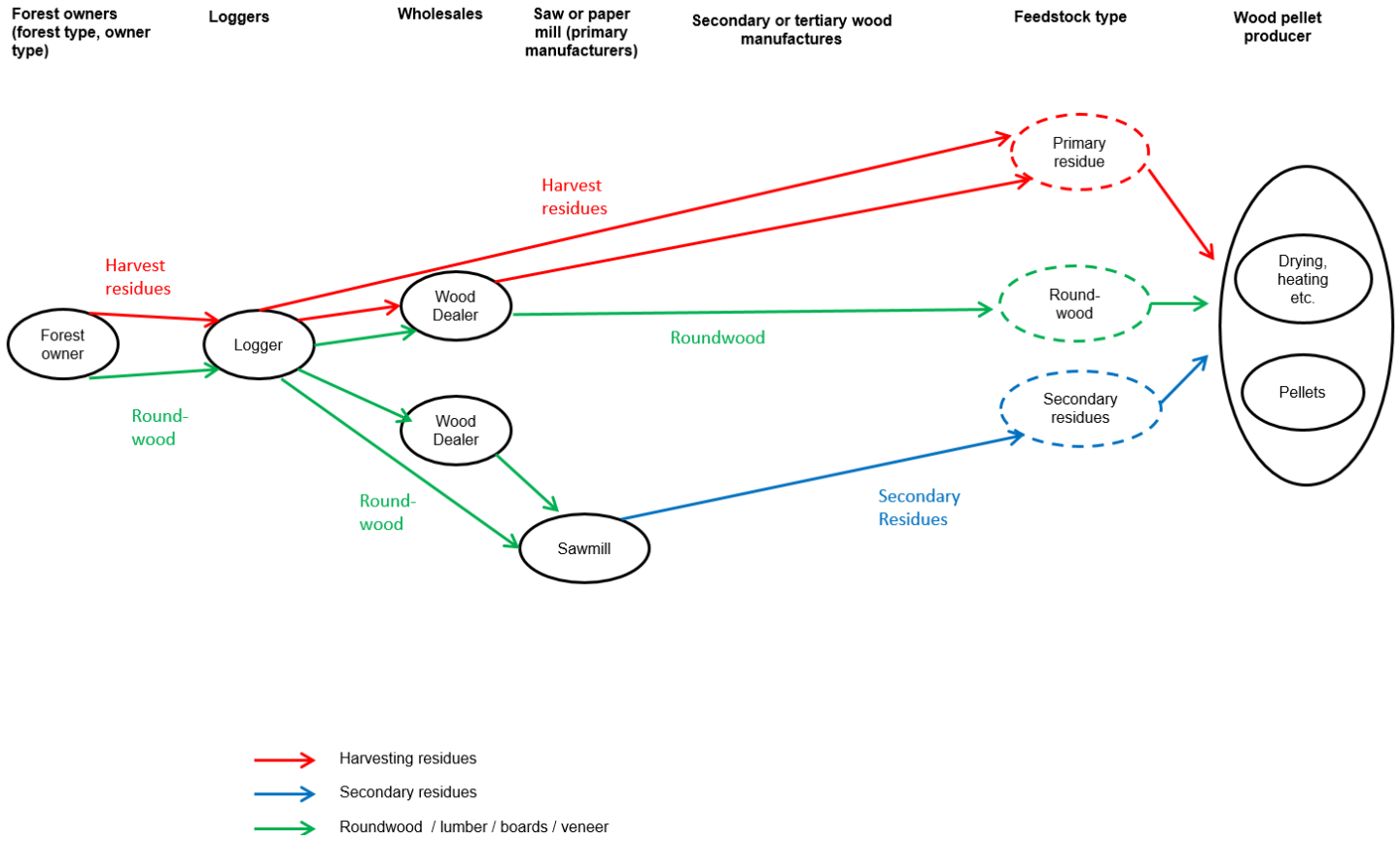
- Percentage from certified lands: 12% SFI “certified content.”
- Systems used: SBP; FSC controlled wood & COC; PEFC controlled sources & COC; GGL.
- Customer requires: GGL, SBP.
- Procurement staff establish short-term contracts with wood dealers that specifies requirements for BMPs and only PEFC Controlled Sources and FSC Controlled Wood (i.e. “SBP compliant feedstocks.”

CASE 3

VERIFYING COMPLIANCE

- SBP and FSC Controlled Wood risk assessments completed by a consultant using numerous external datasets to determine risks to biodiversity and conversion.
- 5 unspecified risks identified through FSC Controlled wood in the 6 states sourcing area. SBP SVP has been undertaken.
- Risk mitigation through: **supplier contracts** specify only PEFC Controlled Sources and FSC Controlled Wood; **logger training** and **BMP compliance** included in contracts; **annual internal audits** on supplier district of origin on primary, secondary, and tertiary feedstocks→ at least 10 of ~70 suppliers annually.

CASE 4



- 720,000 MT/Yr.
- 60 - 80% is primary fiber (even split residues, i.e. tops and pulpwood); 23% is secondary residues
- 15 – 20 sawmills; 15 – 20 wood dealers
- Mostly pine
- 120 km primary fiber and mill residuals
- Long-term volume-based contracts with wood dealers
- Primary fiber 80% NIPF; 15% industrial; 5% state or federal

CASE 4

SUSTAINABILITY GOVERNANCE

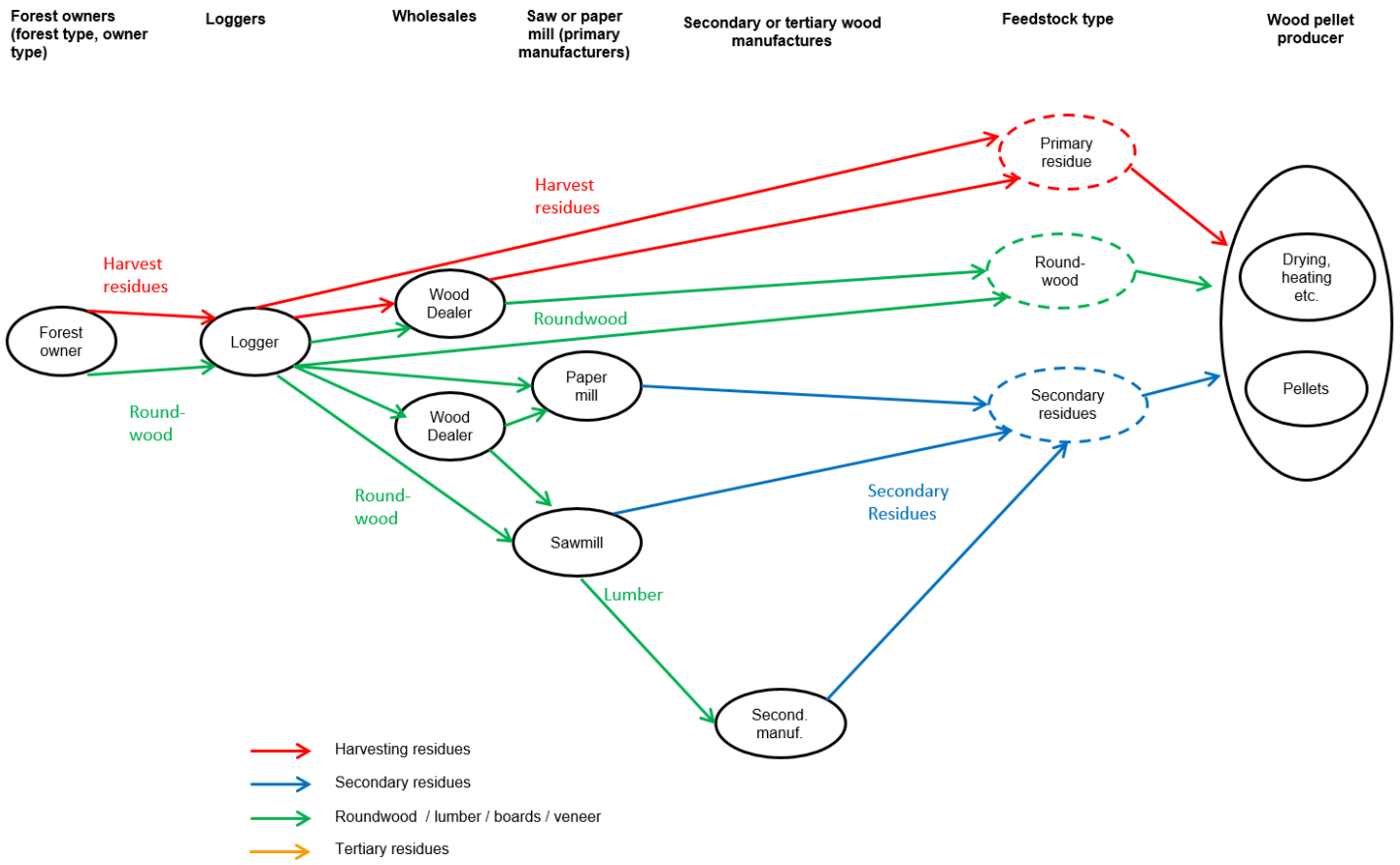
- Percentage from certified lands: 7% SFI; 2% ATFS.
- Systems used: FSC Controlled Wood & COC; PEFC Controlled Sources; going through SBP certification; ATFS group certification.
- Interplay between sustainability staff and procurement foresters to implement track & trace system for primary fiber and district of origin for secondary residuals.

CASE 4

VERIFYING COMPLIANCE

- Long-term volume-based contracts with wood dealers are a key part of risk mitigation as these are linked to risk assessments and analysis of district of origin for secondary residuals and track & trace with primary fiber, both of which are the central elements of COC.
- Quota system on suppliers may influence certified content.

CASE 5



- 750,000 MT/yr
- 75% Roundwood, 10% in-woods chips, 15% sawmill residues
- 32 sawmills; 45 wood dealers working with ~400 landowners
- Sources from three states
- 92% pine; 8% hardwood
- 30% industrial; 70% NIPF
- 10% is under long-term contract with landowners; no long-term contracts with wood dealers

CASE 5

SUSTAINABILITY GOVERNANCE

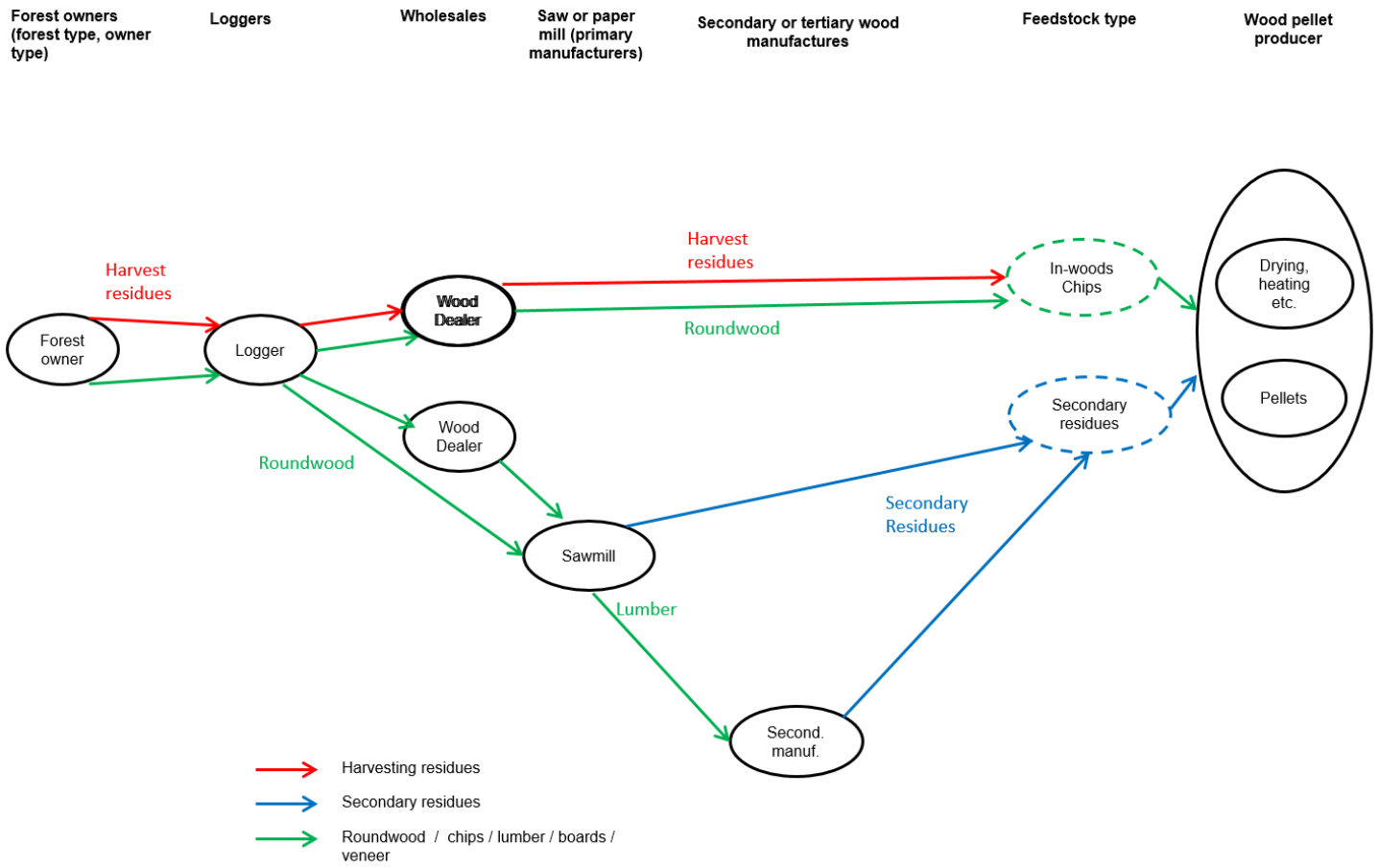
- Percentage from certified lands: 21% SFI; 7% ATFS.
- Systems used: FSC Controlled Wood & COC; PEFC Controlled Sources; SBP; SFI Fiber Sourcing.
- Interplay between sustainability staff and procurement foresters to implement track & trace system for primary fiber and district of origin for secondary residuals.

CASE 5

VERIFYING COMPLIANCE

- Information packets (60 annually), logger training, and BMP compliance monitoring (state-level and 20% of landowners supplying roundwood). Risk of conversion is monitored too.
- Inspect 100% of secondary feedstock suppliers to verify their sourcing area is covered by the risk assessment.
- Risk assessments written by a consultant using external datasets (e.g. NatureServe).
- Contracts with wood dealers specifies how to address conversion and high conservation values.

CASE 6



- 250,000 MT/Yr
- 50:50 roundwood and residues
- Source residues from 6 states. (60 sawmills, 10 secondary processing)
- Pine primary and pine/hardwood residues
- 70% NIPF; 25% industrual; 5% state
- No long-term contracts

CASE 6

SUSTAINABILITY GOVERNANCE

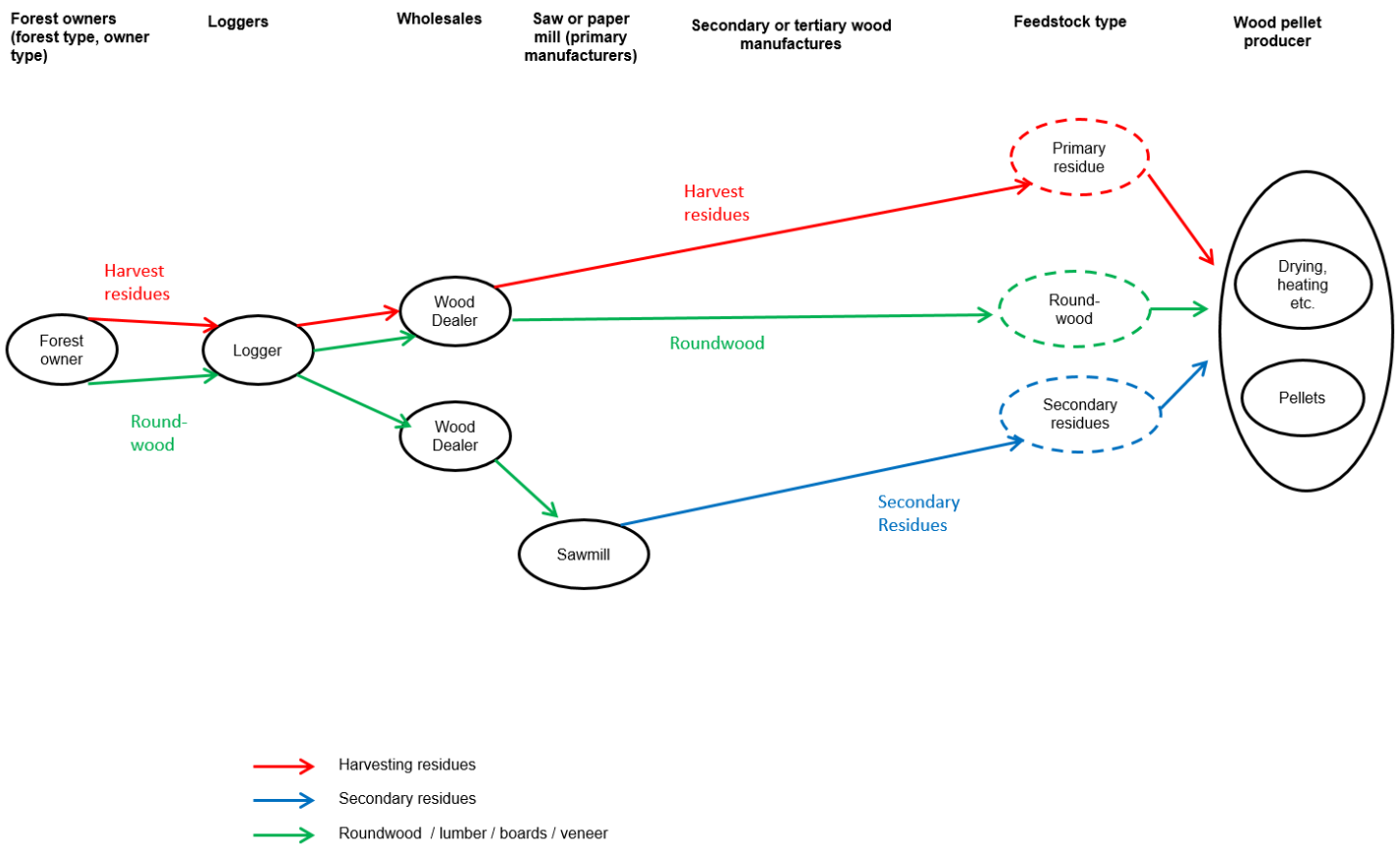
- Percentage from certified lands: 12% SFI.
- Systems used: FSC Controlled Wood & COC; PEFC Controlled Sources; SBP; SFI Fiber Sourcing, GGL
- Customer requires: SBP, GGL
- Interplay between sustainability staff and procurement foresters to implement track & trace system for primary fiber and district of origin for secondary residuals.

CASE 6

VERIFYING COMPLIANCE

- SBP and FSC Controlled Wood risk assessments completed by a consultant.
- Numerous external datasets used to assess risk to biodiversity. USDA FIA data used to assess risk of conversion.
- 5 unspecified risks identified through FSC Controlled wood in the 6 states sourcing area. SBP SVP has been undertaken.
- Annual audits of district of origin of primary, secondary, and the tertiary feedstocks.
- Contracts with sawmills specify: adherence to BMPs, use of trained loggers, only PEFC Controlled Sources and FSC Controlled Wood.

CASE 7



- 600,000 MT/Yr
- Currently 100% pulpwood from one landowner
- Will be 20% residues from 6 sawmills; industrial owner to coordinate fiber from other ownerships
- Sourcing from two states

CASE 7

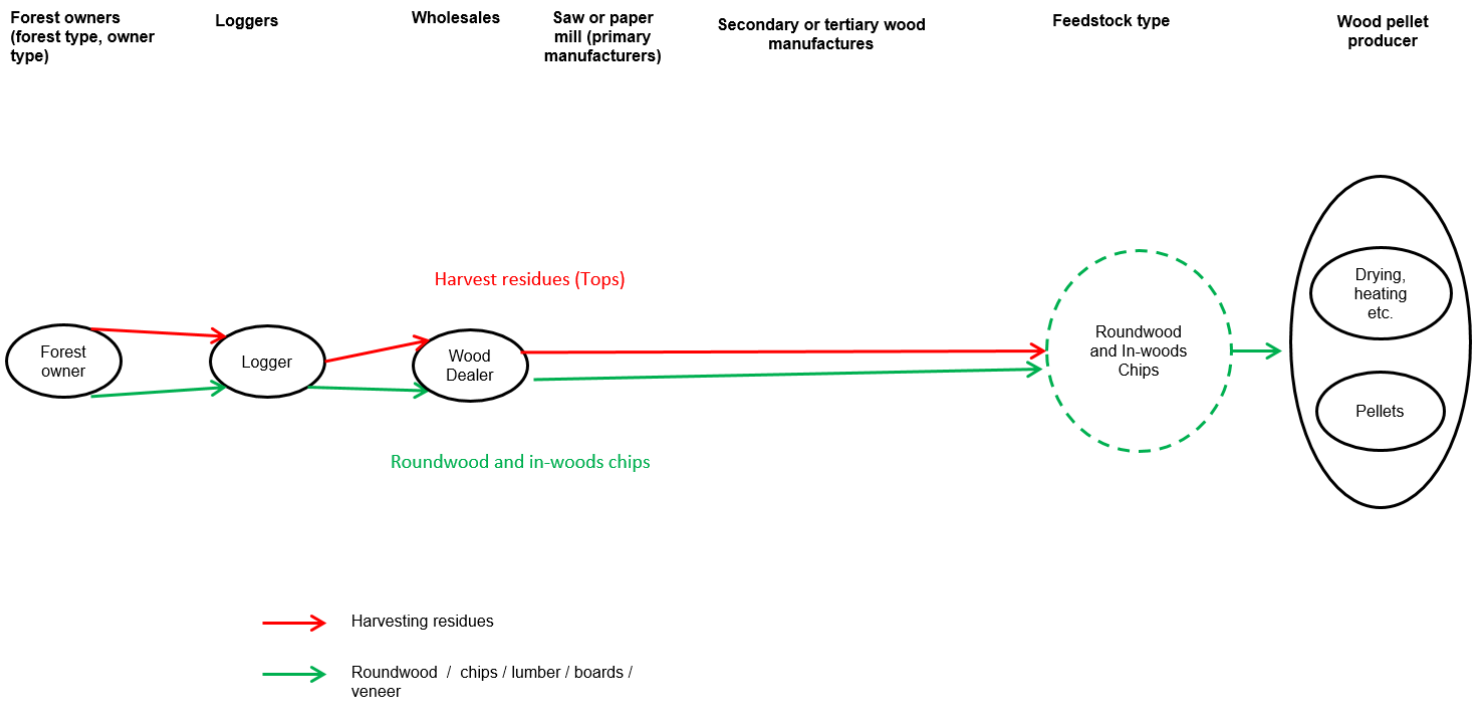
SUSTAINABILITY GOVERNANCE

- Percent from certified lands: 100% SFI
- Systems used: FSC Controlled Wood & COC; PEFC Controlled Sources & COC; SBP (applied); SFI Fiber Sourcing
- Customer requires: SBP

VERIFYING COMPLIANCE

- SBP and FSC Controlled Wood risk assessments completed by a consultant using numerous external datasets to focus on the potential sourcing of residuals from sawmills.
- Contracts with sawmills specify: adherence to BMPs, use of trained loggers, only PEFC Controlled Sources and FSC Controlled Wood.
- Standard landowner outreach, logger training, and other elements of SFI Fiber Sourcing.

CASE 8



- Sourcing from 2 states
- 60% pulpwood; 40% in-woods chips
- 10% thinnings; 90% final harvests
- 63% pine; 33% pine/hardwood; 3% bottomland hardwood; 1% upland hardwood
- 97% NIPF; 3% industrial
- 10 wood dealers with long-term volume-based contracts

CASE 8

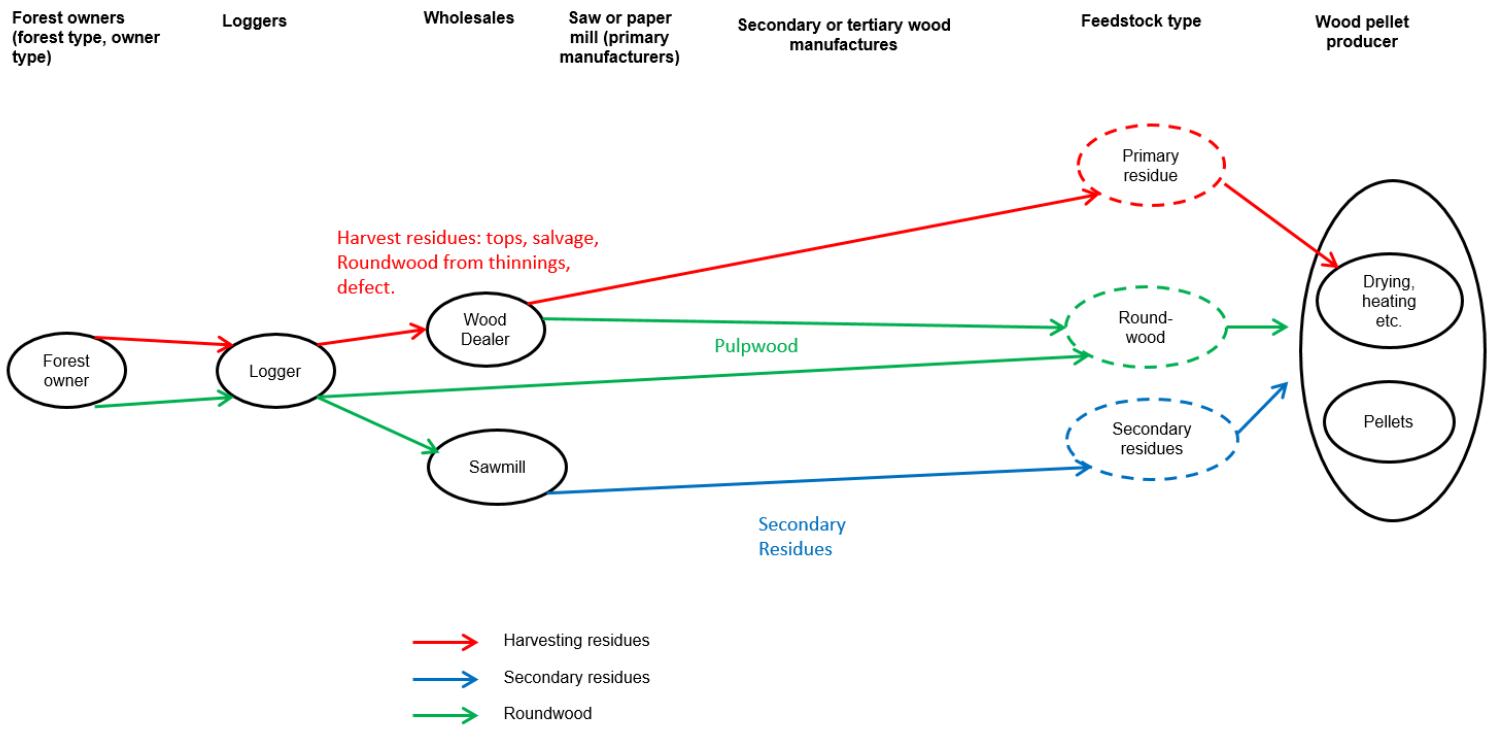
SUSTAINABILITY GOVERNANCE

- Percent from certified lands: 3% SFI; 1% ATFS
- Systems used: FSC Controlled Wood & COC; PEFC Controlled Sources; SBP; ATFS group certification.
- Customer requires: SBP
- Interplay between sustainability staff and procurement foresters to implement track & trace system for primary fiber and district of origin for secondary residuals.

VERIFYING COMPLIANCE

- Long-term volume-based contracts with wood dealers are a key part of risk mitigation as these are linked to risk assessments and analysis of district of origin for secondary residuals and track & trace with primary fiber, both of which are the central elements of COC.
- Quota system on suppliers may influence certified content.

CASE 9



- 280,000 MT/Yr.
- Roundwood and sawmill residuals
- Mostly pine; some upland hardwood
- Vertically integrated
- Do not work with wood dealers
- Company lands; private lands; public

CASE 9

SUSTAINABILITY GOVERNANCE

- SFI/FSC certified land + sawmill + pellet mill.
- Systems used: FSC FM; SFI FM; FSC Controlled Wood & COC; PEFC Controlled Sources & COC; SBP
- Customer requires: SBP
- Utilize a track & trace system on lands not from the company and assess risks to HCVs.

VERIFYING COMPLIANCE

- Audit a minimum of 10% of non-company lands where harvests occur.
- Contracts require FSC Controlled Wood.

PRELIMINARY CONCLUSIONS

1. What is ***driving engagement with sustainability initiatives***?

- Local, state, federal, and international policies all “govern” these supply chains.
- These policies influence sourcing strategies and corporate structure (e.g. track & trace, application of risk assessments, some commonality in risk mitigation tactics). Some feel they are going above and beyond requirements (e.g. stakeholder agreements).
- External pressure is playing a role in sustainability initiatives.
- Corporate culture and professionalism.

PRELIMINARY CONCLUSIONS

2. Which sustainability initiatives are most common for demonstrating compliance with sustainability criteria?

- Requirements vary by customer (and country) most common programs: SBP, FSC CW & COC, PEFC CS & COC, GGL a requirement in a couple cases.
- Hiring consultants to complete risk assessments.
- Supplier contracts vary in length but typically contain requirements for BMP compliance, auditing, FSC CW & COC and PEFC CS & COC.
- Auditing district of origin with residual suppliers.
- Track & trace with primary feedstock linked to risk assessments and inspections.
- ATFS group certification in 7 cases.
- Volumes sourced from certified forest management is limited but significant in a few cases.

PRELIMINARY CONCLUSIONS

3. Where are the largest *challenges* to documentation of *compliance with sustainability criteria*, and where is the largest potential for improvement?

- Wood dealers and mill residuals.
  - Demanding a higher degree of due diligence for a lower value product.
  - Significant time required to ensure data quality and educate them about importance.

- Nature of NIPF owners.

- Some pellet mills are moving toward sourcing more residuals to improve GHG performance and production, but this presents challenges for COC.

- Respondents overwhelmingly claim that pulpwood is a harvest residual.

PRELIMINARY CONCLUSIONS

4. Where are the largest *challenges to tracking documentation*, and where is the largest potential for improvement?

- There is a need for increased acceptance and active participation by residual suppliers.
- As sourcing strategies vary, methods to constrain risk also vary. In some instances practices to control risks are more extensive than in other segments of the U.S. southeast wood products industry.
- Divergent opinions on mapping risk.

PRELIMINARY CONCLUSIONS

5. What are the largest ***challenges in communications*** with stakeholders?

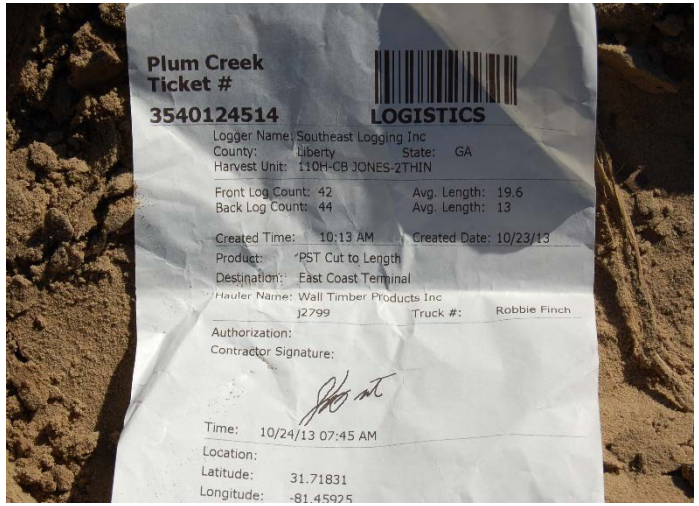
- *"The forest industry is complicated and our place within it is poorly understood."*
- Industry recognizes it lacks expertise in communication and doesn't know what to do.
- Some express that campaigners and the press are not looking for good news.
- Some in industry are perpetually *"setting the record straight"* which is resource intensive.
- Heavy reliance on trade associations which are less credible to some.
- Some are investing in transparency and commit themselves to open processes.
- Duplicative and/or poorly implemented public consultation processes.

NEXT PHASE

1. ***Review audits.***

2. ***Site visits.*** **Meet with procurement staff & sustainability managers about sourcing, risk mitigation measures, time requirements, etc.**

3. ***Supply chain categorization and analysis of governance complex*****.**



Thank You

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