Assessing the Wood Sourcing and Sustainability Practices of the U.S. Industrial Wood Pellet Sector

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Athens, GA - May 1, 2019

PINCHOT INSTITUTE FOR CONSERVATION

STUDY PURPOSE

- Feedstock sourcing strategies of the pellet industry.
- Approaches to demonstrating compliance with sustainability criteria.
- Drivers of companies' engagement with sustainability programs.
- Significant challenges to compliance with sustainability criteria.
- Opportunities for improved compliance with the criteria.

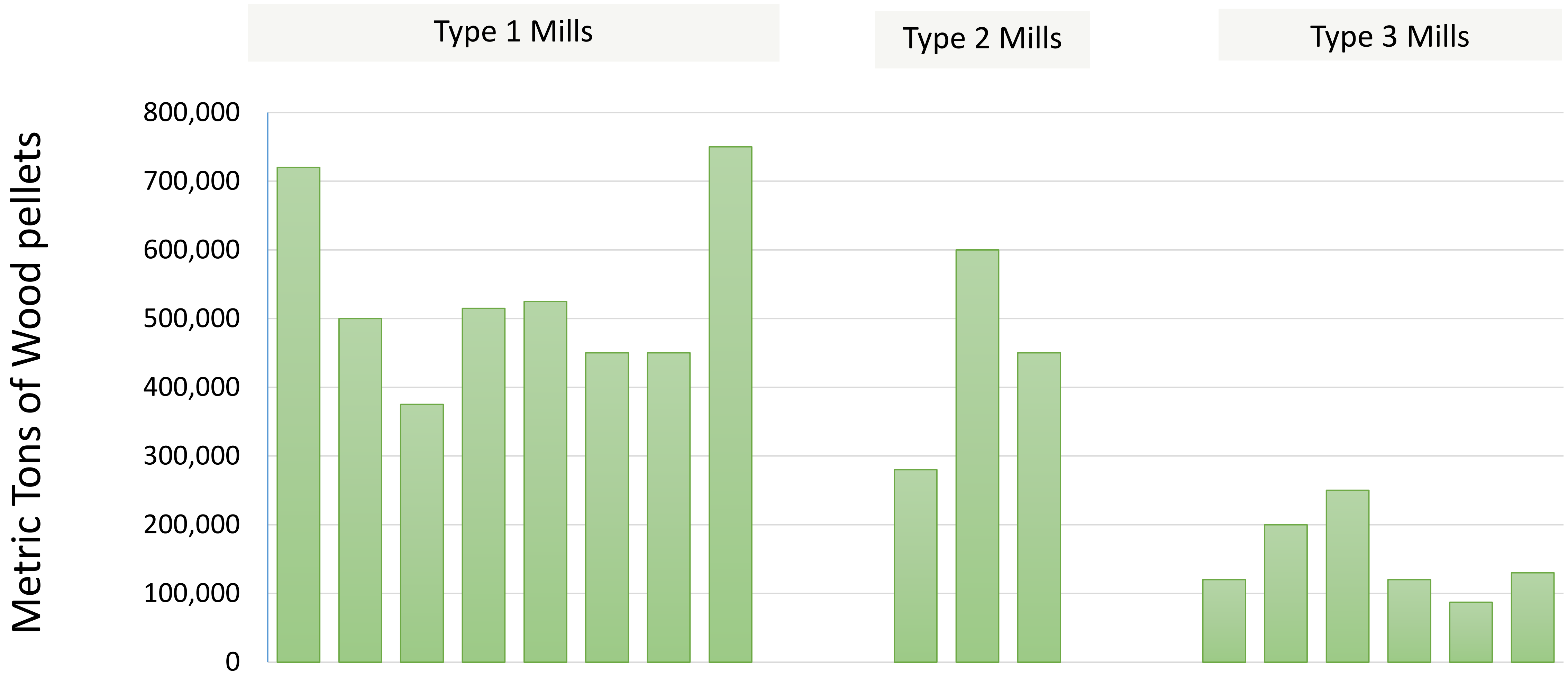
METHODS

- Structured interviews - 28 main questions. Schematic of supply chains. Feedstock definitions. Recorded, transcribed, and analyzed.
  - 15 individuals from 6 companies (sustainability managers & procurement staff).
  - Initial interviews conducted Spring 2017.
- Site visits with three pellet mills.
- 17 pellet mills included in this study.
- Sample represents 75% of U.S. export pellet capacity as of Spring 2017.

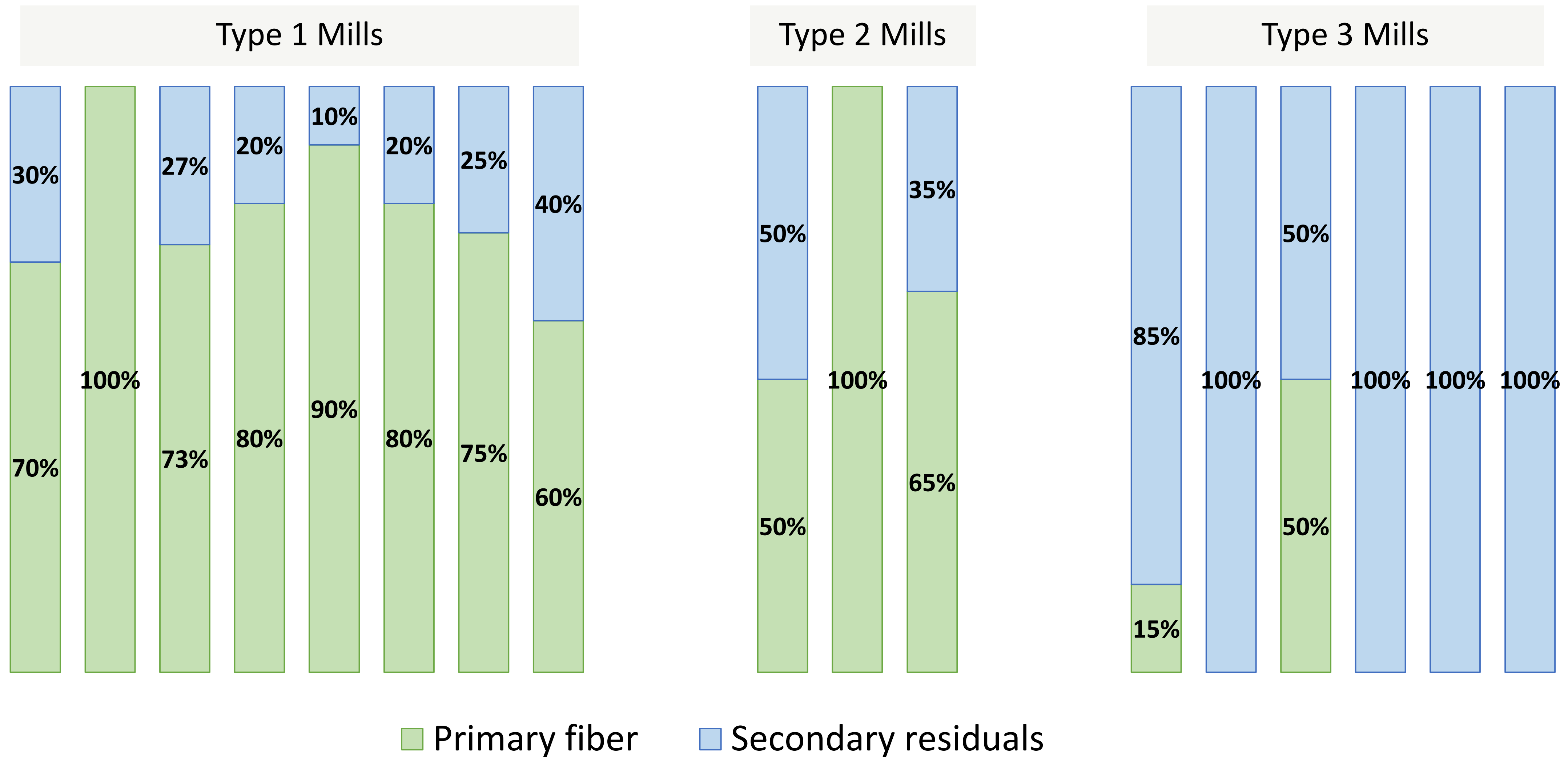
OBSERVATIONS

- Variations in supply chain linkages and players. Three types of supply chains identified.
- <10 – 80 wood dealers for mills that used wood dealers.
- All pellet mills sourced secondary residuals from sawmills; A few up to 60 sawmills provided residues.
- Some sourced secondary residuals from other wood product manufacturers (15 – 20 facilities).
- Primary fiber source - 75 miles, secondary fiber source - much larger geography.

PRODUCTION CAPACITY

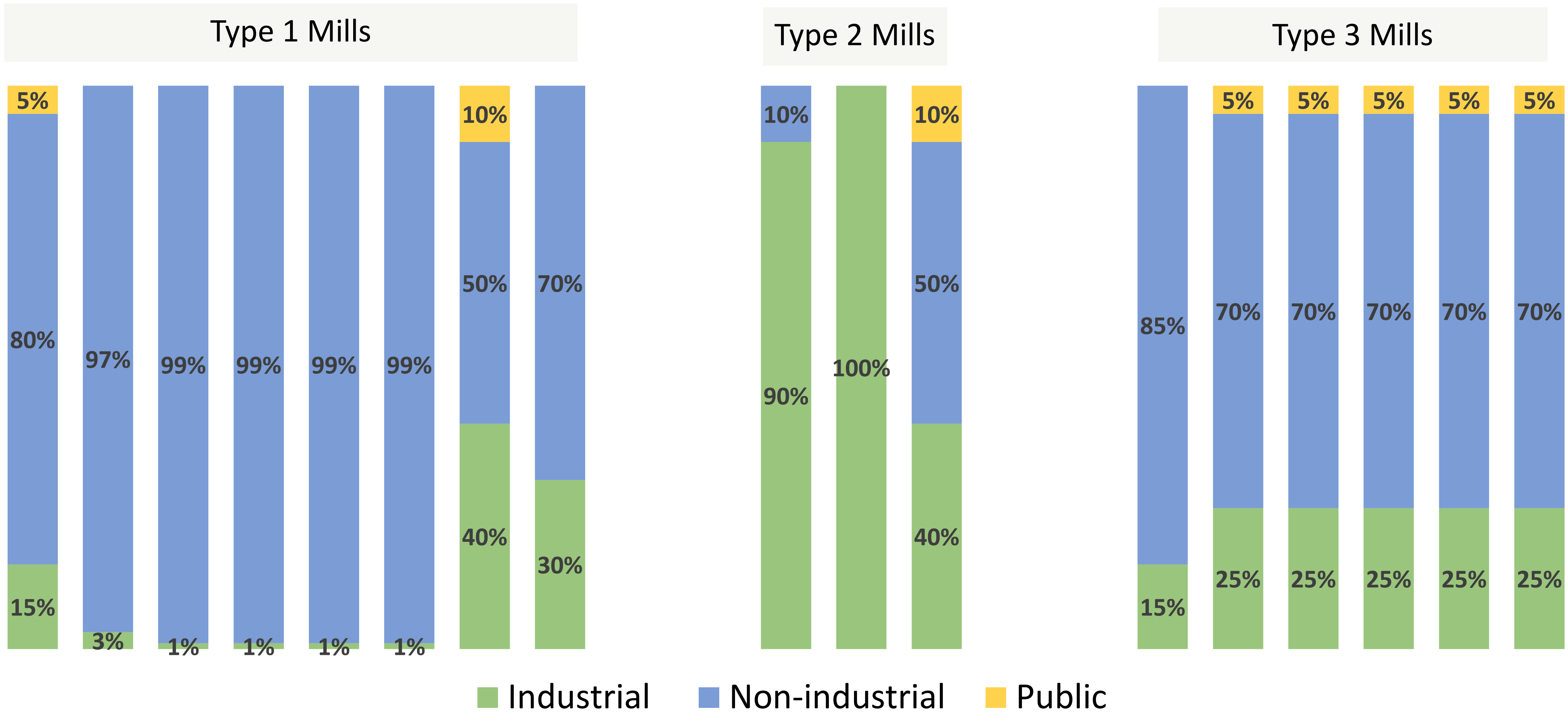


FEEDSTOCKS

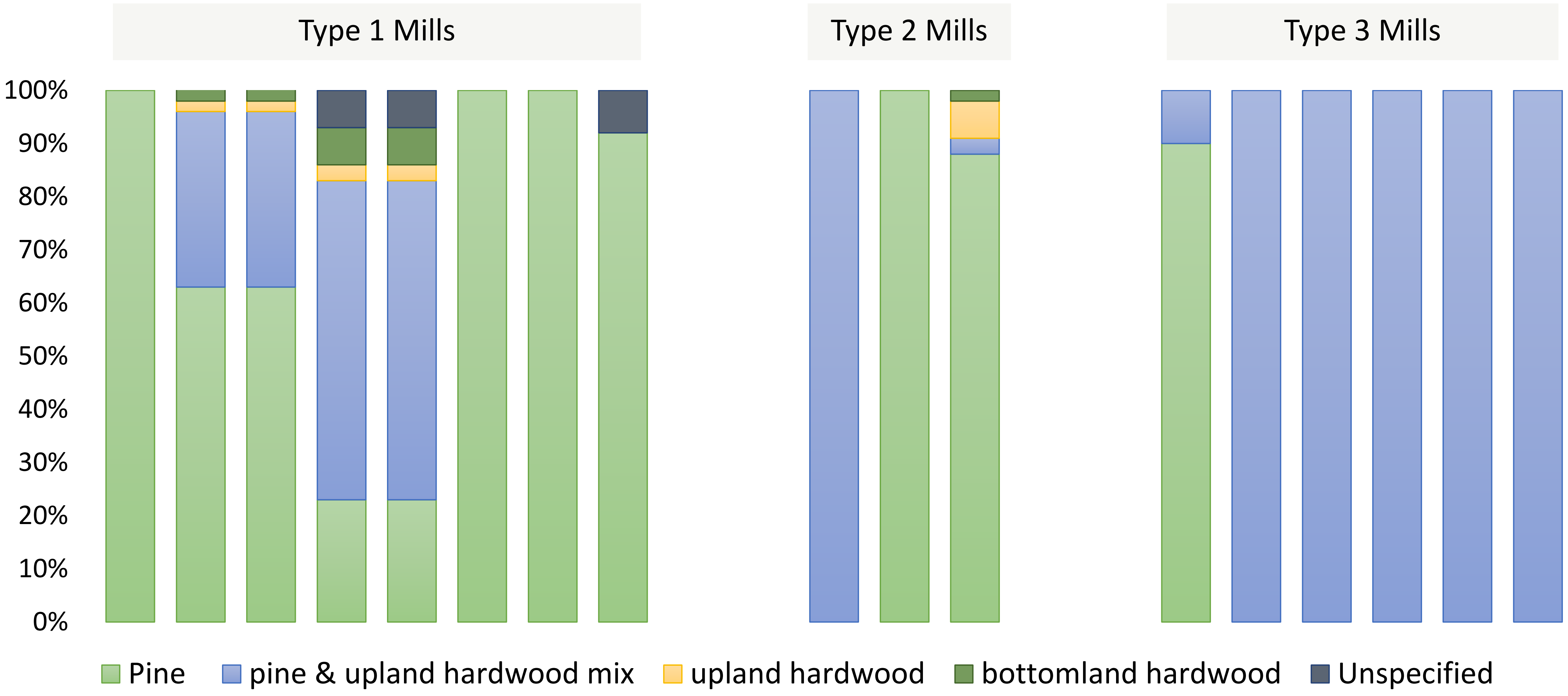


Type 1 Mills
Type 2 Mills
Type 3 Mills
30%
70%
100%
27%
73%
20%
80%
10%
90%
20%
80%
25%
75%
40%
60%
50%
50%
100%
35%
65%
85%
15%
100%
50%
50%
100%
100%
100%
Primary fiber
Secondary residuals

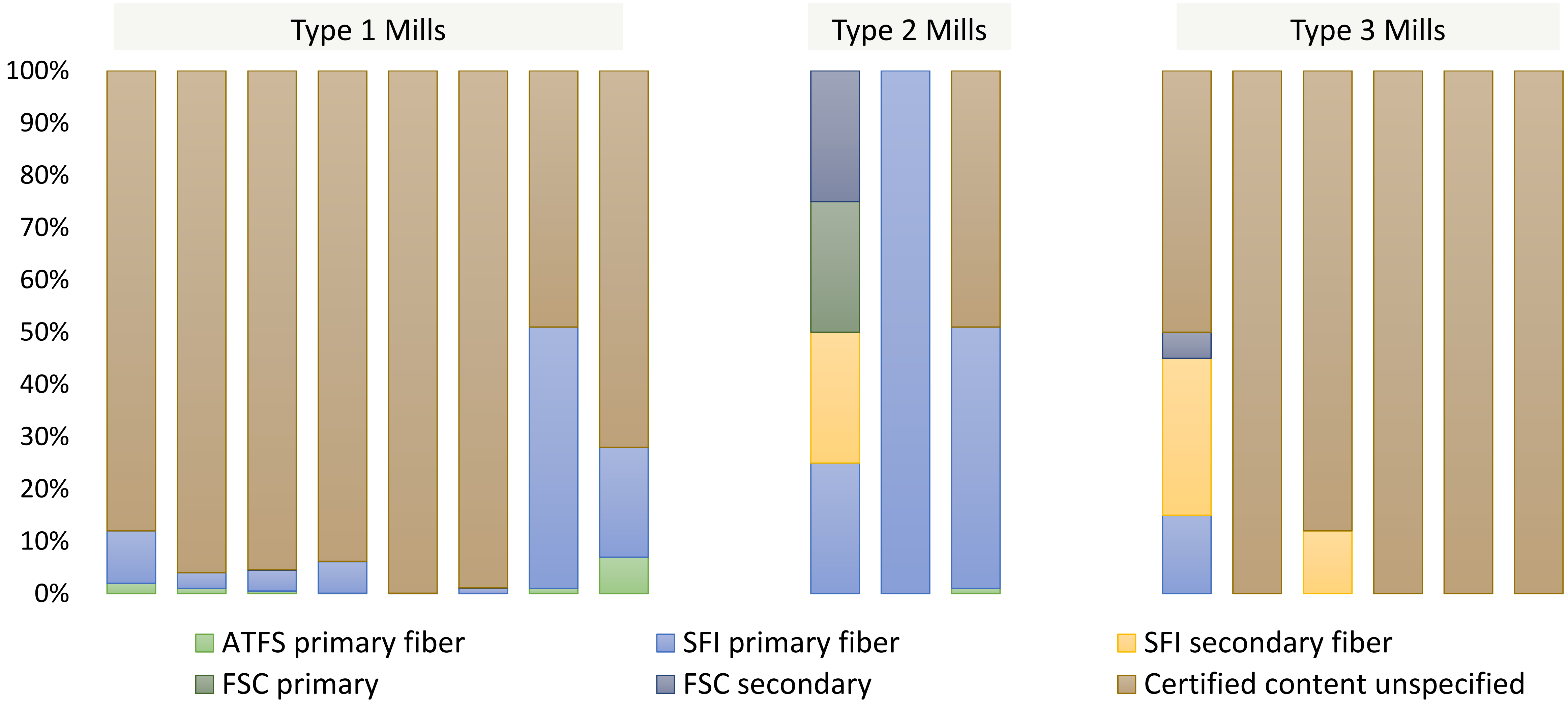
FOREST OWNERSHIPS SOURCED FROM



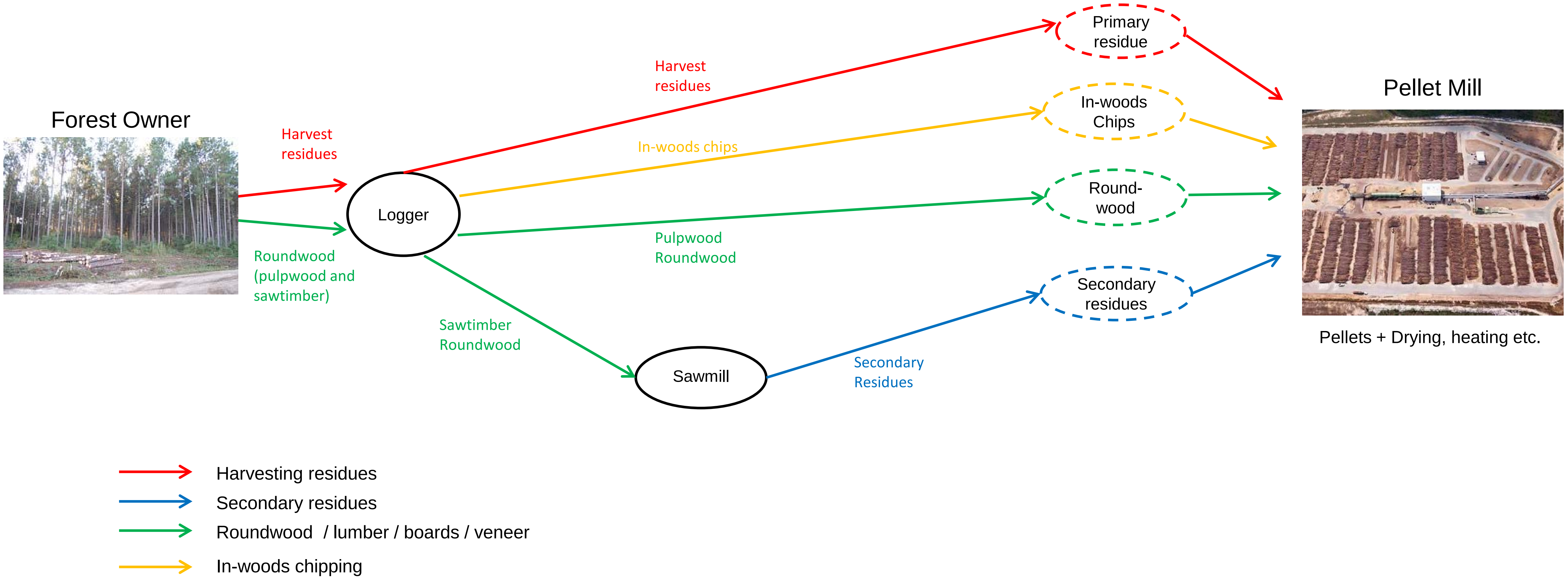
FOREST TYPES USED



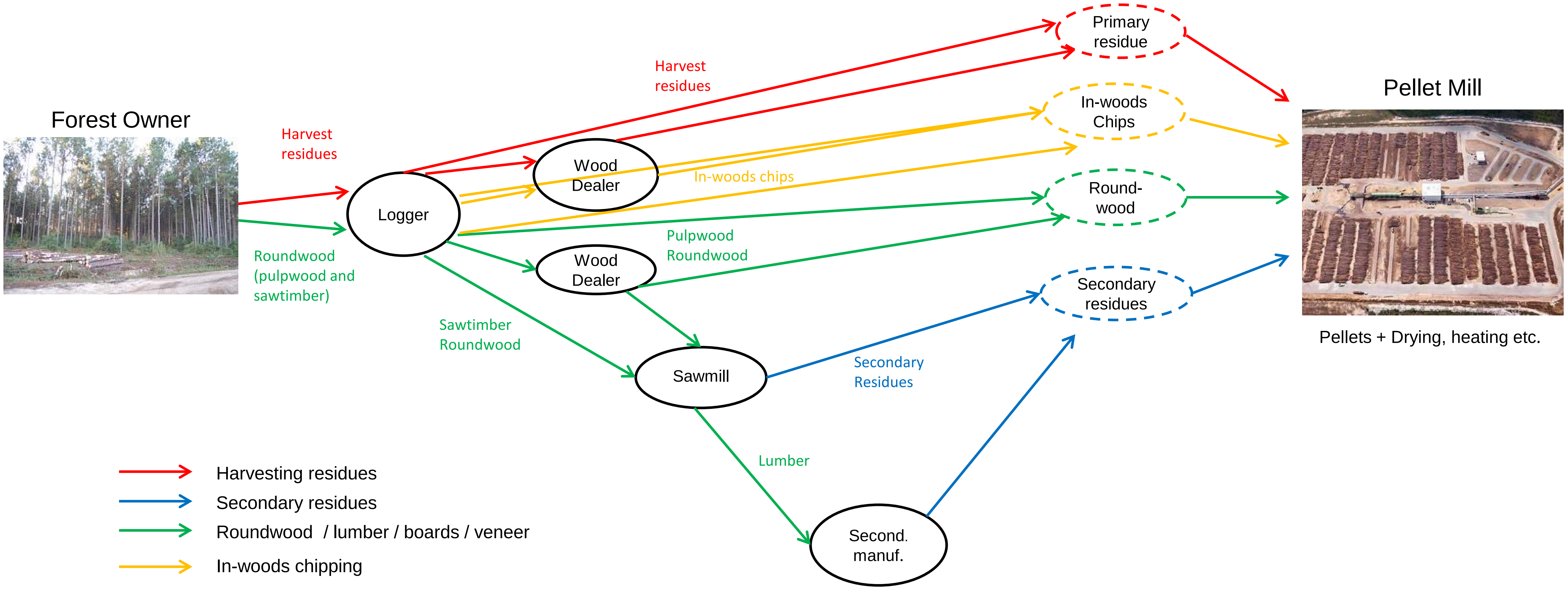
PERCENTAGE OF FEEDSTOCK CERTIFIED TO A FOREST MANAGEMENT STANDARD



TYPE I – SUPPLY CHAIN



TYPE I – SUPPLY CHAIN



FEEDSTOCK PROCUREMENT: TYPE I SUPPLY CHAINS

CHARACTERISTIC	DESCRIPTION
1. Contracts with large industrial forest ownerships for primary sourcing	A small portion (10 – 20%) of the supply.
2. Reliance on wood dealers	Significant reliance on wood dealers to provide primary and secondary fiber.
3. Sourcing of secondary residues	Sourcing secondary fiber from multiple sawmills and re-manufacturing facilities.

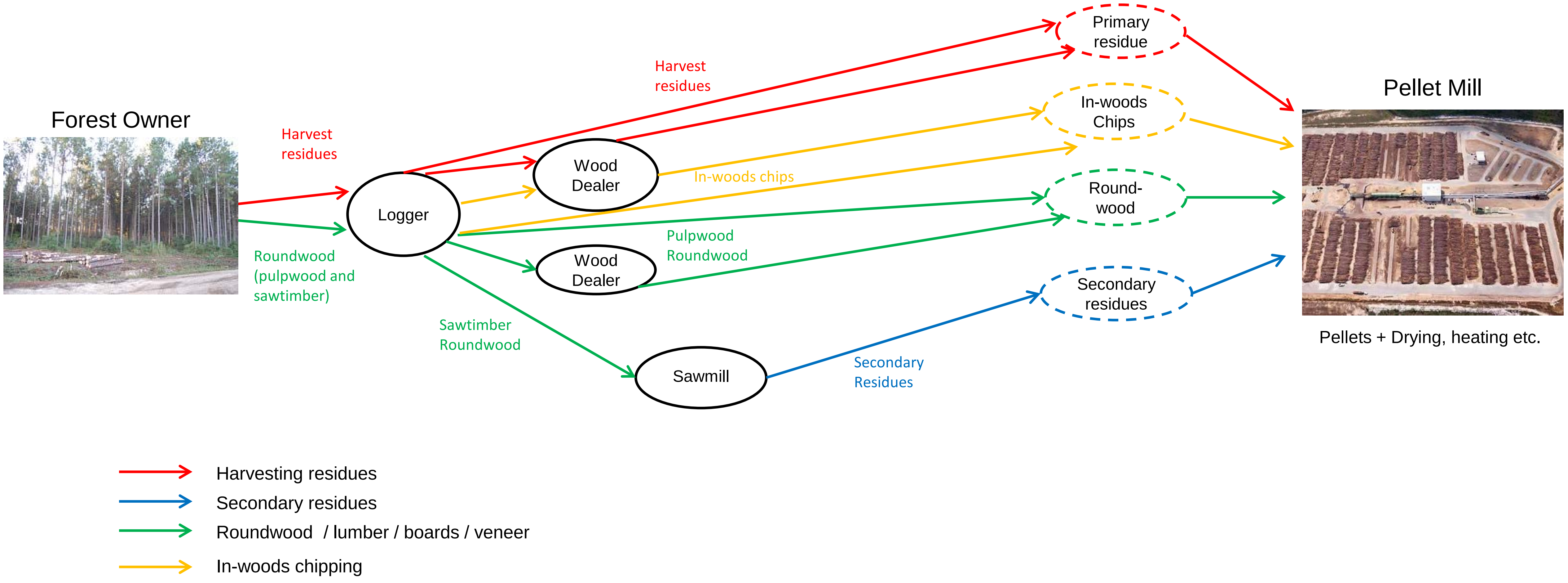
RISK ASSESSMENT FEATURES: TYPE I SUPPLY CHAINS

CHARACTERISTIC	DESCRIPTION
1. Use of external consultants and publicly available data	Yes, RA usually completed by external consultants using publicly available data.
2. Level of integration with sourcing practices and risk mitigation	Commonly feature RAs directly integrated into procedures of primary fiber procurement and indirectly integrated into secondary fiber procurement.
3. Standards used for RA	RA is done to standards of PEFC CS, FSC CW, and SBP.
4. Coverage	RAs cover area from where primary fiber is sourced and attempt to cover sourcing area for suppliers (i.e. sawmills providing secondary fiber).

RISK MITIGATION: TYPE I SUPPLY CHAINS

CHARACTERISTIC	DESCRIPTION
1. Avoidance of risks Identified	Yes, for primary fiber.
2. Sourcing from FM certified forests	Yes, for primary fiber, but a small portion. Sourcing mainly from certified industrial forests vs. uncertified non-industrial forests.
3. 1st party inspection of sample of harvests.	Yes, for primary fiber.
4. Inspecting via questionnaires and/or site visits from a portion (10 – 100%) of residual suppliers.	Yes
5. Use of quota systems limiting the amount of non FM certified fiber.	Yes, for primary fiber. Use of quota system to encourage fiber from certified forests.
6. Use of group certification programs.	Yes. Including offering to certify the landowners supplying roundwood to sawmills providing pellet mills residuals.
7. Use of supply volume-based agreements that include feedstock sourcing specifications.	Yes, for primary fiber. Some instances where contracts with sawmills are cited as evidence of risk mitigation.
8. CoC, including PEFC CS and FSC CW	Yes, for primary fiber.
9. RA with suppliers	Yes, for primary fiber. RAs with suppliers (e.g. wood dealers).
10. Use of trained loggers	Yes, for primary fiber

TYPE 2 – SUPPLY CHAIN



FEEDSTOCK PROCUREMENT: TYPE 2 SUPPLY CHAINS

CHARACTERISTIC	DESCRIPTION
1. Contracts with large industrial forest ownerships for primary sourcing	Contracts with large industrial forest ownerships for a significant (50 – 100%) portion of the supply of primary fiber.
2. Reliance on wood dealers	Insignificant reliance on wood dealers.
3. Sourcing of secondary residues	Direct sourcing of secondary residues from a sawmill either owned by the same company or by a partner in joint venture.

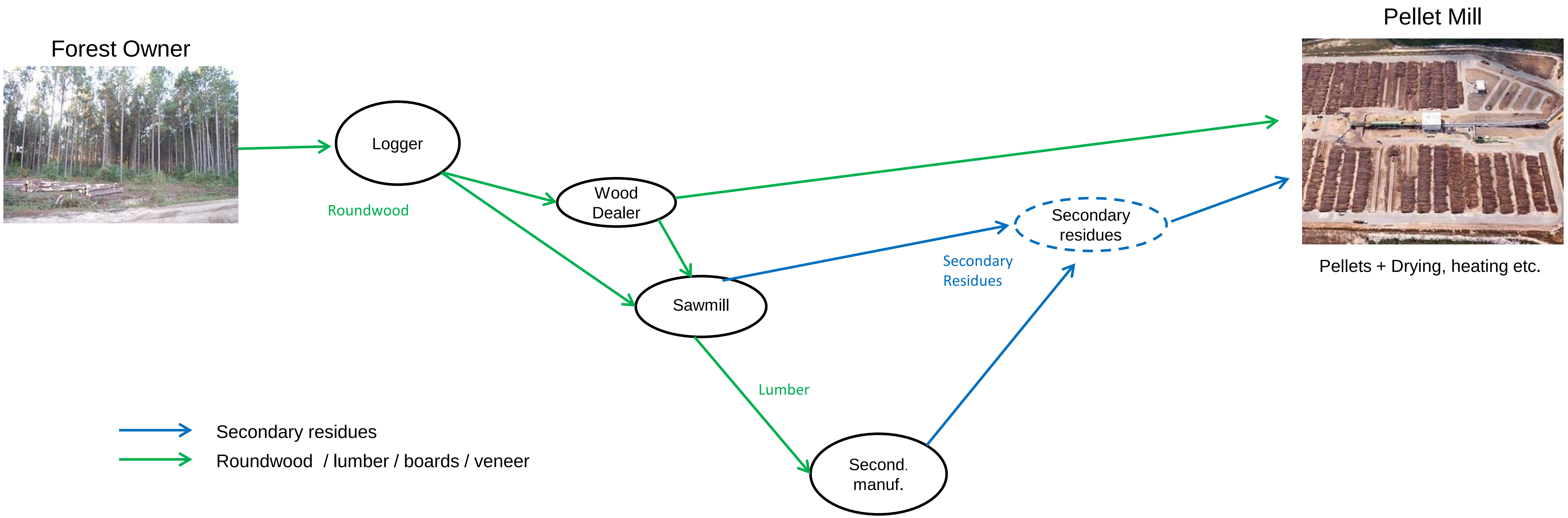
RISK ASSESSMENT FEATURES: TYPE 2 SUPPLY CHAINS

CHARACTERISTIC	DESCRIPTION
1. Use of external consultants and publicly available data	RA usually completed by external consultants using publicly available data.
2. Level of integration with souring practices and risk mitigation	Commonly feature RAs directly integrated into procedures of primary fiber procurement.
3. Standards used for RA	RA is done to standards of PEFC CS, FSC CW, and SBP.
4. Coverage	RAs cover area from where primary fiber is sourced and attempt to cover sourcing area for suppliers (i.e. sawmills providing secondary fiber).

RISK MITIGATION: TYPE 2 SUPPLY CHAINS

CHARACTERISTIC	DESCRIPTION
1. Avoidance of risks Identified	Yes, for primary fiber.
2. Sourcing from FM certified forests	Yes, for primary fiber. Sourcing mainly from certified industrial forests vs. uncertified non-industrial forests.
3. 1st party inspection of sample of harvests.	Yes, for primary fiber.
4. Inspecting via questionnaires and/or site visits from a portion (10 – 100%) of residual suppliers.	Yes
5. Use of group certification.	Yes. Including offering to certify the landowners supplying roundwood to sawmills providing pellet mills residuals.
6. Use of supply volume-based agreements that include feedstock sourcing specifications.	Yes, for primary fiber. Some instances where contracts with sawmills are cited as evidence of risk mitigation.
7. CoC, including PEFC CS and FSC CW	Yes, for primary fiber.
8. RA with suppliers	Yes, for primary fiber. RAs with suppliers (e.g. wood dealers).
9. Use of trained loggers	Yes, for primary fiber

TYPE 3 – SUPPLY CHAIN



FEEDSTOCK PROCUREMENT: TYPE 3 SUPPLY CHAINS

CHARACTERISTIC	DESCRIPTION
1. Contracts with large industrial forest ownerships for primary sourcing	No contracts with large industrial forest ownerships.
2. Reliance on wood dealers	Significant reliance on wood dealers.
3. Sourcing of secondary residues	Supply chain is nearly entirely built around secondary fiber, sourcing from several sawmills and other wood product facilities.

RISK ASSESSMENT: TYPE 3 SUPPLY CHAINS

CHARACTERISTIC	DESCRIPTION
1. Use of external consultants and publicly available data for risk assessment (RA)	RA usually completed by external consultants using publicly available data.
2. Standards used for RA	RA is done to standards of PEFC CS, FSC CW, and SBP.
3. Coverage	RAs attempt to cover sourcing area for suppliers (i.e. sawmills providing secondary fiber).

RISK MITIGATION: TYPE 3 SUPPLY CHAINS

CHARACTERISTIC	DESCRIPTION
1. Avoidance of risks Identified	Sourcing from suppliers to which RAs were extended or COC certificates were available.
2. Inspecting via questionnaires and/or site visits from a portion (10 – 100%) of residual suppliers.	Yes
3. CoC, including PEFC CS and FSC CW	Sometimes. One company requires suppliers of secondary fiber use PEFC CS and FSC CW certifications.
4. RA with suppliers	Yes, some companies extends their RAs to the supply-base of all residual suppliers.

CONCLUSIONS

- The structure of supply chains may alleviate or elevate risks.
- Common certifications - SBP, PEFC COC/CS, SFI COC, SFI FS, and FSC COC/CW.
- Certified FM content is small, save for type 2. ATFS group certification in 7 cases.
- RA frameworks of PEFC CS and FSC CW used as evidence in SBP certification.
- RAs use geospatial datasets to ID risks (e.g. known occurrences of RT&E species and communities).
  - NatureServe, state Natural Heritage datasets, FSC US's draft national risk assessment, vegetation cover types, proprietary datasets, etc.

CONCLUSIONS

- RAs most often completed by consultants at the regional or state level (i.e. an area larger than a facility's supply area), encompassing where the pellet mill might source primary and secondary fiber.
- Companies in type 1 and 2 supply chains adapted or developed data management and tracking systems integrated with wood procurement and reporting.

CONCLUSIONS

- The strength of RAs across all supply chain types depended on:
  (1) data quality (do they adequately represent the known and unknown risks?),
  (2) appropriateness of the scale and scope of analysis, and
  (3) the successful integration of risk assessments and especially mitigation measures into procurement practices.

- As sourcing strategies vary, methods to contain risk also vary. In some instances practices to control risks are more extensive than other segments of the wood products industry.

CONCLUSIONS

- Sourcing secondary fiber - companies rely on data from sawmills, coupled with an extension of RAs.
- Many residual suppliers participate in various certification programs themselves.
- Procurement staff from multiple type 1 pellet mills encountered resistance when requesting secondary suppliers to provide data on feedstock origin and/or in urging adoption of PEFC CS and FSC CW.

CONCLUSIONS

- The greatest challenge is documenting chain-of-custody and risks from secondary residual suppliers.
- Strategies include:
  - 1st party auditing ~10 – 100% of residual suppliers' supply chains to the harvest unit,
  - requiring FSC CW and PEFC CS,
  - extending risk assessments to encompass the sourcing area of residual suppliers,
  - offering to certify the forest management plans of landowners supplying the sawmills.

Thank You

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