Economic Impacts of the Forestry Sector in Nova Scotia

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ABOUT THIS REPORT

This report examines the economic activity of the forestry sector in Nova Scotia in 2022 and 2023. The views expressed, and any errors or omissions, are the sole responsibility of the authors.

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EXECUTIVE SUMMARY

The Nova Scotia forestry sector measures below occurred in the context of the Nova Scotia economy growing gross domestic product (GDP) by 1.3%[1] from 2022 to 2023. However, in the same period, the goods producing portion of the economy declined by 1.8%, which includes the forestry sector. The forestry sector along with all others was dealing with cost pressures as inflation remained high at 4.0% over 2022 to 2023[2]. The forestry sector also continues to adjust following structural changes in recent years.

Economic impacts include direct, indirect, and induced impacts of forestry sector spending within Nova Scotia. From 2022 to 2023 a 14% decline in forestry sector spending (output) reduced GDP (added-value) by 12%, while full-time equivalent (FTE) jobs declined 8%.

However, it is important to highlight that the decrease in FTE jobs produced by the model does not correspond with the change in full-time and part-time jobs from Statistics Canada (see Jobs table). This is partly due to a shift from full-time to part-time status for some workers in the sector (see Appendix). However, there is also a drop in capital spending (see Investment table). Using the 2020 model for both years does not distinguish how the change in spending (output) was allocated to labour and capital, therefore the Statistics Canada jobs should be used as the more accurate indicator of workforce changes.

Economic impacts

$ Millions	2022	2023	$ Change	% Change
Output	$1,780	$1,527	-$253	-14%
GDP	$674	$594	-$80	-12%
Jobs (FTE)	6,414	5,892	-522	-8%

Source: Statistics Canada interprovincial economic impact model, 2020.

The breakdown of GDP for the components of the forestry sector shows a small decline for forestry (-6%), an increase for support services (+32%), no change for wood product manufacturing, and a decline for paper manufacturing (-18%).

GDP[1]

$ Millions	2022	2023	$ Change	% Change
Forestry and logging	$51	$48	-$3	-6%
Support for logging	$34	$46	$11	32%
Wood products	$169	$170	$0	0%
Paper products	$125	$102	-$23	-18%
Total	**$380**	**$365**	**-$15**	**-4%**

Note: Statistics Canada reports GDP in 2017 chained dollars for better comparability between years.

Keeping in mind the underlying shift from full-time to part-time workers, the breakdown by forestry sector component shows a small decline for forestry and logging (-2%), an increase for support services (+10%), and small increases for manufacturing of wood products (+2%) and paper products (+3%).

[1] Statistics Canada, 2024. Gross domestic product at basic prices in chained 2017 dollars (Table: 36-10-0402-01).
[2] Statistics Canada, 2024. Consumer price index, annual average (Table: 18-10-0005-01).

JOBS[3]

	2022	2023	Change	% Change
Forestry and logging	660	645	-15	-2%
Support for logging	465	510	45	10%
Wood products	1,845	1,890	45	2%
Paper products	1,030	1,060	30	3%
Total	**4,000**	**4,105**	**105**	**3%**

Note: Jobs include full-time and part-time counts, not full-time equivalents.

Spending on capital and repairs is down overall (-40%), but this is a combination of reduced investments for forestry and logging (-67%) and wood product manufacturing (-53%), while there is a substantial increase for pulp and paper manufacturing (+106%). Increased investments are occurring where there are opportunities to diversify and produce new products or tap new markets.

INVESTMENT[4]

$ Millions	2022	2023	$ Change	% Change
Forestry and logging	16	5	-10	-67%
Wood products	62	29	-33	-53%
Paper products	9	18	9	106%
Total	**86**	**52**	**-34**	**-40%**

Note: Support services for logging investments were not reported by Statistics Canada.

Exports are down 19% overall, with declines in wood product exports accounting for the largest share of the volume (-$74 million), then pulp and paper products (-$42 million). Although changes in currency exchanges favoured exports to major U.S. and European markets, inflation causing cost pressures also made it more challenging to compete in global markets.

EXPORTS[5]

$ Millions	2022	2023	$ Change	% Change
Forestry and logging	2	2	0	-9%
Wood products	286	212	-74	-26%
Paper products	318	276	-42	-13%
Total	**606**	**490**	**-116**	**-19%**

Detailed economic impact results for 2022 and 2023 are shown in the body of the report.

[3] Statistics Canada, 2024. Employment by industry (Table: 14-10-0202-01).
[4] Statistics Canada, 2024. Capital and repair expenditures by industry (Table: 34-10-0035-01).
[5] Industry Canada, 2024. Trade Data Online.

2023 RESULTS

In 2023, the Nova Scotia forestry sector generated $1.5 billion in economic impact, including $594 million (GDP) to the provincial economy, about 5,900 full-time equivalent (FTE) jobs, and contributed $71 million in taxes to the provincial government and $74 million to the federal government.

The economic benefits span the entire province. The breakdowns within the sector are:

- **Forestry and logging** – generates $87 million in added-value (GDP), 594 FTE jobs, $6 million in provincial taxes, and $6 million in federal taxes.
- **Support for logging** - generates $55 million in added-value (GDP), 275 FTE jobs, $2 million in provincial taxes, and $2 million in federal taxes.
- **Wood product manufacturing** - generates $347 million in added-value (GDP), 3,188 FTE jobs, $30 million in provincial taxes, and $30 million in federal taxes.
- **Paper product manufacturing** - generates $131 million in added-value (GDP), 1,366 FTE jobs, $34 million in provincial taxes, and $34 million in federal taxes.

The total estimated forestry sector output in 2023 produces the following detailed economic impacts based on the Statistics Canada input-output model:

Table 2.1: Nova Scotia forestry sector economic impacts in 2023

($M)	Direct	Indirect	Induced	Province	Canada[3]
Output	$1,054[1]	$487	$152	$1,527	$2,210
GDP	$246	$249	$98	$594	$892
Income	$158	$138	$40	$336	$504
Jobs (FTE)	2,508	2,458	926	5,892	8,489
Prov taxes[2]	$26	$23	$22	$71	
Fed taxes[2]	$25	$17	$12	$54	$74

Source: Statistics Canada Inter-Provincial Economic Input-Output Model, 2020
Notes: 1. The direct output includes $165 million for logging & forestry and support services, but these are excluded from the model run to avoid double-counting, 2. Tax impacts include a Gardner Pinfold custom calculation of income taxes based on Statistics Canada marginal effective tax rates, and 3. Canada-wide impacts are totals, not additions to the provincial impacts.

- **Output**: A supply chain with thousands of companies in Nova Scotia supports forestry sector operations. The total value of output produced by mills and the supply companies amounted to $1.5 billion in 2023. As supply chains extend into other provinces the total output in Canada is $2.2 billion.
- **GDP**: The sector generates $594 million in provincial GDP, $246 million at the mills and another $347 million elsewhere in the economy. The mill's contribution to GDP represents about 6.3% of the province's goods manufacturing.
- **Employment**: There are 2,508 direct full-time equivalent (FTE) jobs in the forestry sector, and another 3,458 indirect jobs including about 900 in wood supply and support services. Another 926 jobs are created by the spending of incomes earned by those employed in direct and indirect activities (induced impacts). Although logging and support services are considered part of the forestry sector, the economic input-output analysis recognizes these as inputs to the mills and are part of the indirect impacts.
- **Income**: Through its direct and spinoff activities, the sector creates about $336 million in labour income in Nova Scotia. The direct employees at the mills are well paid with an average income of $63,100. Average incomes for those employed in indirect activities including forestry and support services is $56,300. The average annual earnings in Nova Scotia in 2020 (latest Census) was $43,120. The direct salaries and indirect are about 46% and 31% above the provincial average respectively.
- **Taxes**: Through taxes on personal income, production (e.g., payroll tax) and products (e.g., sales and excise taxes) in direct and spinoff activities, the forest sector generates about $71 million annually in provincial taxes, and about $74 million to the federal government.

2022 RESULTS

In 2022, the Nova Scotia forestry sector generated $1.8 billion in economic impact, including $674 million (GDP) to the provincial economy, over 6,400 full-time equivalent (FTE) jobs, and contributed $84 million in taxes to the provincial government and $87 million to the federal government.

The economic benefits span the entire province with about 22% in the western region, 44% in the central region, and 33% in the eastern region. The breakdowns within the sector are:

- **Forestry and logging** – generates $73 million in added-value (GDP), 601 FTE jobs, $5 million in provincial taxes, and $5 million in federal taxes.
- **Support for logging** - generates $36 million in added-value (GDP), 279 FTE jobs, $2 million in provincial taxes, and $2 million in federal taxes.
- **Wood product manufacturing** - generates $322 million in added-value (GDP), 3,874 FTE jobs, $30 million in provincial taxes, and $31 million in federal taxes.
- **Paper product manufacturing** - generates $243 million in added-value (GDP), 1,660 FTE jobs, $47 million in provincial taxes, and $49 million in federal taxes.

The total estimated forestry sector output in 2022 produces the following detailed economic impacts based on the Statistics Canada input-output model:

Table 2.1: Nova Scotia forestry sector economic impacts in 2022

($M)	Direct	Indirect	Induced	Province	Canada[3]
Output	$1,185[1]	$422	$172	$1,780	$2,605
GDP	$279	$284	$111	$674	$1,035
Income	$179	$156	$45	$380	$582
Jobs (FTE)	2,694	2,672	1,048	6,414	9,545
Prov taxes[2]	$31	$28	$25	$84	
Fed taxes[2]	$29	$20	$13	$62	$87

Source: Statistics Canada Inter-Provincial Economic Input-Output Model, 2019
Notes: 1. The direct output includes $142 million for logging & forestry and support services, but these are excluded from the model run to avoid double-counting, 2. Tax impacts include a Gardner Pinfold custom calculation of income taxes based on Statistics Canada marginal effective tax rates, and 3. Canada-wide impacts are totals, not additions to the provincial impacts.

- **Output**: A supply chain with thousands of companies in Nova Scotia supports forestry sector operations. The total value of output produced by mills and the supply companies amounted to $1.8 billion in 2022. As supply chains extend into other provinces the total output in Canada is $2.6 billion.
- **GDP**: The sector generates $674 million in provincial GDP, $279 million at the mills and another $395 million elsewhere in the economy. The mill's contribution to GDP represents about 8.9% of the province's goods manufacturing.
- **Employment**: There are 2,694 direct full-time equivalent (FTE) jobs in the forestry sector, and another 2,672 indirect jobs including about 900 in wood supply and support services. Another 1,048 jobs are created by the spending of incomes earned by those employed in direct and indirect activities (induced impacts). Although logging and support services are considered part of the forestry sector, the economic input-output analysis recognizes these as inputs to the mills and are part of the indirect impacts.
- **Income**: Through its direct and spinoff activities, the sector creates about $380 million in labour income in Nova Scotia. The direct employees at the mills are well paid with an average income of $66,500. Average incomes for those employed in indirect activities including forestry and support services is $58,200. The average annual earnings in Nova Scotia in 2020 (latest Census) was $43,120. The direct salaries and indirect are about 54% and 35% above the provincial average respectively.
- **Taxes**: Through taxes on personal income, production (e.g., payroll tax) and products (e.g., sales and excise taxes) in direct and spinoff activities, the forest sector generates about $84 million annually in provincial taxes, and about $87 million to the federal government.

APPENDIX A - DEFINITIONS

North American Industry Classification System (NAICS)

NAICS is a standardized system used by government agencies and businesses in Canada, Mexico, and the United States to classify and categorize industries based on their primary economic activities. The NAICS system was developed to provide a common framework for statistical reporting, data analysis, and business comparisons across North America.

NAICS uses a hierarchical structure, organizing industries into sectors, subsectors, industry groups, and individual industries based on similarities in production processes and products. Each industry is assigned a unique code consisting of digits that help identify its specific category within the classification system. The classification is periodically updated to reflect changes in the economy and emerging industries. It enables policymakers, researchers, businesses, and other stakeholders to understand economic trends, analyze industry performance, and make informed decisions based on standardized industry definitions.

Goods-producing industries

Sectors of the economy involved in the production of tangible goods. These industries are primarily engaged in activities related to manufacturing, construction, agriculture, mining, and other forms of natural resource extraction. The goods-producing sector encompasses businesses that transform raw materials and components into finished products. It includes industries such as manufacturing of goods, construction of buildings and infrastructure, farming and agriculture, and mining and quarrying activities.

NAICS 113 – Forestry and logging

This industry includes establishments primarily engaged in the operation of timber tracts, tree farms, and forest nurseries. It involves activities such as growing, harvesting, and transporting timber, as well as producing various forest products. The forestry and logging industry plays a significant role in the management and utilization of forest resources, providing raw materials for various sectors such as construction, paper manufacturing, and wood products. It also involves activities related to reforestation and conservation efforts to maintain sustainable practices in forest management.

NAICS 1153 - Support activities for forestry

This industry includes establishments primarily engaged in providing support services to forestry and logging operations. Some examples of these support activities include conducting timber cruises and surveys, offering reforestation services, managing forest pests, providing forest fire fighting and prevention services, as well as offering timber evaluation services to assess the value of forest products. These support services play a vital role in the management, preservation, and sustainable utilization of forest resources.

NAICS 321 – Wood product manufacturing

This industry includes establishments primarily engaged in the production of a wide range of wood products, such as lumber, plywood, veneers, wood containers, and wood furniture. Activities within the wood product manufacturing industry may involve sawing, planning, shaping, laminating, and assembling wood materials to create various finished products. Some common products produced in this industry include wooden doors, windows, cabinets, wooden containers, and furniture items. The wood product manufacturing industry plays a crucial role in

providing essential building materials and finished goods for construction, home improvement, and various consumer and industrial applications.

NAICS 322 - Paper manufacturing
This industry includes establishments primarily engaged in the production of paper and paperboard from pulp obtained in the pulping process. It encompasses a wide range of products, including various types of paper used for writing, printing, packaging, and other purposes. The paper manufacturing industry involves several key processes, such as pulping, bleaching, and papermaking. These processes convert wood pulp or other raw materials into paper and paperboard products of different grades and qualities. Some of the common products produced in this industry include newsprint, writing paper, printing paper, tissue paper, cardboard, and various types of packaging materials.
The paper manufacturing industry plays a significant role in supplying essential materials for communication, printing, packaging, and numerous other applications in various sectors of the economy.

NAICS 3221 - Pulp, paper, and paperboard mills
This industry includes establishments primarily engaged in manufacturing pulp, paper, and paperboard products from wood pulp, rags, and other fibers. It covers a wide range of products, including writing and printing paper, packaging materials, cardboard, tissue paper, and other paperboard products. Pulp, paper, and paperboard mills play a significant role in providing essential materials for various applications, such as writing, printing, packaging, hygiene products, and more. The industry involves several processes, including pulping, bleaching, papermaking, and finishing, to produce a diverse array of paper and paperboard products.

CAD - Canadian dollars

USD - United States dollars

CNY - Chinese renminbi

APPENDIX B – ECONOMIC ANALYSIS

The following provides an explanation of the approach, key terms, and economic linkages in the forestry sector, before proceeding with the impact results.

In order to determine the full impacts of forestry sector in Nova Scotia, the direct expenditures (output) are used to drive the Statistics Canada Inter-provincial Input-Output model (2019 version). To avoid double-counting, we do not use the output of forestry and logging or support activities to forestry, since these are inputs to the manufacturing plants (mills).

The model captures the relationship amongst industries in the province (and the extent to which spending in Nova Scotia triggers impacts elsewhere in Canada), measuring how direct expenditures on goods and services by the sector create output, jobs and income in the economy:

- **Direct impact**: refers to the impact generated by the sector. Direct GDP refers to the value added created by the sector while direct employment and labour income refers to the actual jobs and payroll within the sector.
- **Indirect impact**: refers to the modeled impacts arising from purchased inputs triggered by the direct activity. For example, a woods contractor buys equipment from manufacturers, maintenance from service companies and fuel and consumables from various suppliers. These suppliers in turn buy their inputs from other companies, and so on. Taken together, the process of producing these goods and services creates profits, employment and income generating indirect impacts.
- **Induced demand**: refers to the modeled demand created in the broader economy through consumer spending of incomes earned by those employed in direct and indirect activities. It may take a year or more for these rounds of consumer spending to work their way through an economy.

To prepare data to drive the I-O model, direct expenditures are first classified by industry using standard industry classification codes (NAICS). The model accepts this detailed expenditure information and generates the direct, indirect and induced impacts according to the standard economic indicators:

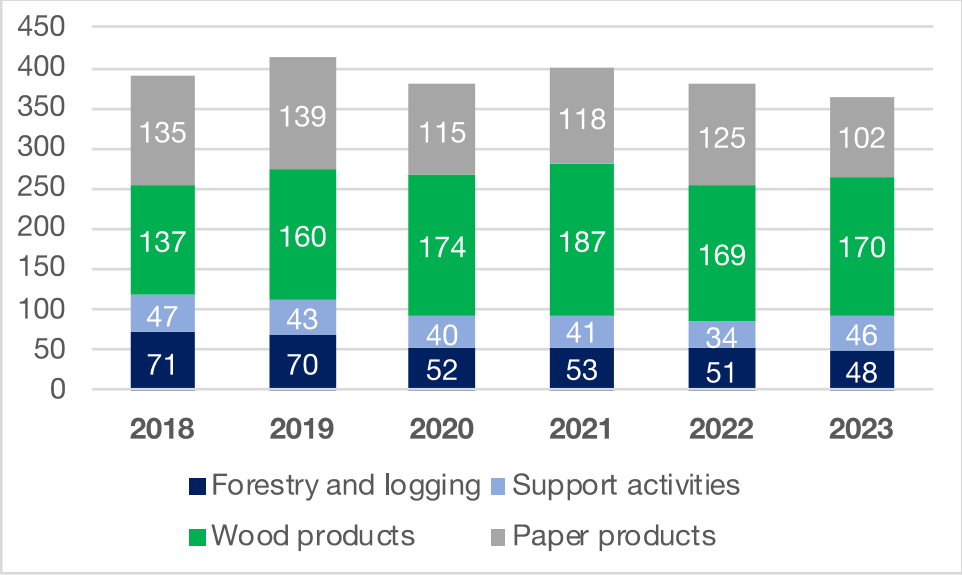
- **Output**: Economic impact arises as industry expenditures work their way through the economy. Spending within the sector on inputs becomes the revenue of many another companies, which in turn they spend on inputs for the goods and services they produce, and so on. Gross value of output, then, is the cumulative sum of these sales and purchases of intermediate and final goods and services. These transactions occur in Nova Scotia, and also spill over to other provinces where supply and service industries may be located.
- **Gross Domestic Product**: GDP captures the value of final goods and services produced in the economy, providing a measure of the value-added or income generated (wages and salaries for labour and returns to and of capital in the form of profit and depreciation).

- **Employment**: This captures the numbers employed, expressed in full-time equivalent jobs (FTE).
- **Labour Income**: this captures payments in the form of wages and salaries earned in a sector. Returns to labour in the form of wages, salaries and earnings form a key component of GDP.
- **Taxes**: the I-O model captures federal, provincial and municipal direct and indirect taxes. Using industry-specific income tax rates from the Statistics Canada, custom calculations of federal and provincial income taxes are estimated. The Statistics Canada I-O Model does not estimate corporate income taxes because of wide differences in accounting assumptions across companies.

Each of the economic impact indicators are important, however more attention is generally given to GDP and jobs. GDP is also described as the true "added-value" to the economy, and jobs are a particular focus of policy and public interest.

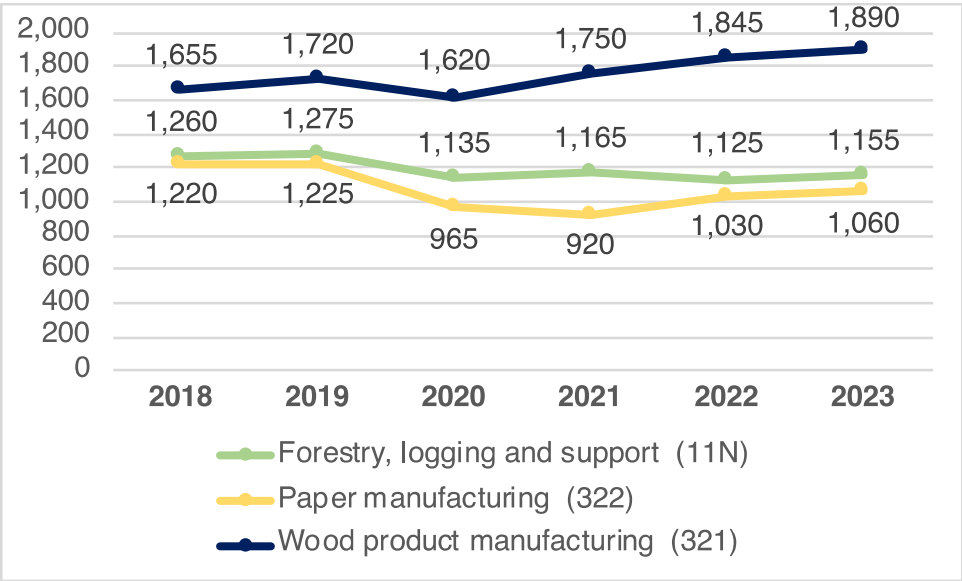
APPENDIX C – SUPPLEMENTARY DATA

Figure A.1: Nova Scotia Forestry Sector GDP, 2018-2023 ($Millions)



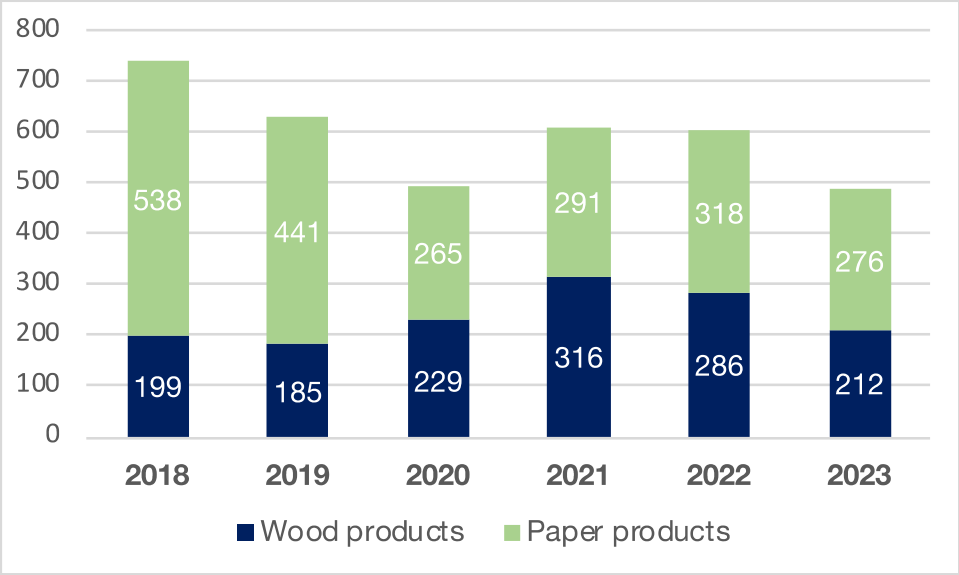
Source: Statistics Canada Table: 36-10-0402-01 (formerly CANSIM 379-0030).

Figure A.1: Nova Scotia Forestry Sector Jobs[1], 2018-2023



Source: Statistics Canada Table: 36-10-0489-01 (formerly CANSIM 383-0031).
Note 1. Jobs include full-time and part-time, employed and self-employed.

Figure A.3: Nova Scotia Forestry Sector Exports, 2018-2023 ($Millions)



Source: Industry Canada Trade Data Online.
Note: This does not include about $2 million in exports from forestry and logging.

The following tables help understand the reported increase in jobs from 2022 to 2023 (executive summary jobs table), while there is an estimated reduction from 2022 to 2023 in full-time equivalent jobs (executive summary economic impact table).

Table A.1 shows the full-time and part-time "paid" and "self-employed" workers, where the overall change from 2022 to 2023 is an increase of 105 jobs as shown in the executive summary jobs table. "Paid" workers are employed by a company (mostly mills) and their numbers increased (up 155), while self-employed contractors decreased (down 50). Table A.2 examines the hours worked by each group.

Table A.1: Paid and self-employed workers by sub-sector, 2022 vs. 2023

	Paid workers			Self-employed		
	2022	2023	Change	2022	2023	Change
Forestry & logging	550	565	15	110	80	(30)
Support for forestry	415	460	45	50	50	-
Wood products	1,690	1,755	65	155	135	(20)
Paper products	1,020	1,050	30	10	10	-
Total	**3,675**	**3,830**	**155**	**325**	**275**	**(50)**

Source: Statistics Canada, 2024. Employment by industry (Table: 14-10-0202-01).

Table A.2 shows that the average hours per worker has not changed overall for "paid" workers, where a decrease in hours worked in logging and support was offset by increases in wood and paper manufacturing. However, there was a decline in average hours worked by "self-employed" workers.

Table A.2: Paid and self-employed average hours per worker by sub-sector, 2022 vs. 2023

	Paid worker hrs			Self-employed hrs		
	2022	2023	Change	2022	2023	Change
Forestry & logging	2,260	2,225	(35)	1,629	1,319	(310)
Support for forestry	1,980	1,893	(87)	1,562	1,448	(114)
Wood products	1,981	1,997	17	1,505	1,343	(162)
Paper products	1,924	1,953	29	30	30	-
Total*	**2,007**	**2,006**	**(0)**	**1,510**	**1,307**	**(203)**

Source: Statistics Canada, 2024. Employment by industry (Table: 14-10-0202-01).
**The total is not the sum of the column, it is the aggregate sum from the StatCan data table.*

The experience in mills has therefore been different, where the number of paid workers increased and most worked about the same hours between years. However, the number of self-employed workers declined mainly in logging, and the remaining self-employed workers in all sub-sectors cut back on their hours. This effectively means more self-employed workers left the business or reduced their work hours.