



# Evidence on Diversity in Canada's Forest Sector

Final Report - 2021



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## Executive Summary

This report is part of a Canada-wide effort to promote diversity in the forest sector workforce. While it is generally recognised that women, Indigenous people, and immigrants are under-represented in the forest sector (and in other sectors), the extent of this lack of representation has not been well documented. We examine past progress and the current situation to better understand the challenges we face. In this report we focus on the situation for women, Indigenous people, and immigrants, although efforts to promote diversity could include a range of other groups.

Some readers might be tempted to focus on certain findings, such as the fact that women occupied 17% of the jobs in Canada’s forest sector in 2016. While this shows improvement on 14% in 1996, it also demonstrates a slow rate of change.

However, promoting diversity in Canada’s forest sector workforce is a complex task that requires a more detailed understanding of the situation than one simple statement. We describe this situation using a variety of specific indicators of diversity, each with a table or graphs and some explanation. These will often present a “snapshot” of the situation (most commonly from the 2016 Canadian Census) or show the change over a period of years (such as 1996-2016). However, the available information does not enable us to say why this occurs and so our ability to draw conclusions is limited. Nevertheless, each of these indicators should help you understand a particular challenge relating to diversity. This report does not have to be read in order – instead, we invite you to use the Table of Contents to choose the topics that most interest you. Often, you will find the key information in a single graph, a table, or a short paragraph. Nevertheless, we urge you to read further to understand some of the subtleties or limitations that will almost certainly affect how you use this information.

You might be interested in the following themes.

**The Big Picture.** The transition towards gender equity and diversity in the forest sector has been slow. The rate of female labour force participation witnessed a modest increase from 14% in 1996 to just 17% in 2016. For Immigrants and Indigenous people, the rate of participation in 2016 was even lower, standing at 12% and 7% respectively in 2016. However, specific forestry sub-sectors are more favourable for different groups than others, while different parts of the country reported higher (or lower) proportions of women or other groups than did the adjoining provinces.

**Diversity in specific jobs and across regions.** While women occupy 17% of all forest sector jobs, this varies from only 1% for Transport Truck Drivers to 31% for Processing Labourers and 98% of Administrative Assistants. Immigrant participation in the labour force varies from 8% for Carpenters to 37% for Sawmill Machine Operators. To understand better the most common jobs for different groups, we present participation rates in 20 of the most common jobs in the sector – for all workers, for women and for immigrants. Focusing on trends since 1991, we see that the proportion of women in 15 specific jobs has generally increased, but only one occupation witnessed constant improvement: Forestry Technologists and Technicians, from 15% in 1991 to 21% in 2016. The proportion of women

in Paper Converting Machine Operators decreased from 26% to 20% over the same period. Regarding regional variations, Ontario reported the highest female forestry labour force participation at 21% followed closely by the Prairie provinces (19%), Alberta (18%), Quebec (16%) and BC (15%).

**The Wage Gap.** We used four different income indicators, finding convincing evidence of a significant wage gap between men and women, but with less marked differences for Indigenous people and immigrants. This is observable in median annual income in each sub-sector and across the most common jobs. We identified 13 jobs where women earn less than 75% of men, and only one job (Receptionist) where women earned more (a difference of 4%). We tracked changes in incomes in six occupations from 1990 to 2015, again finding that the rate of improvement varies between jobs and that the wage gap persists. Finally, women are less likely to be found in senior management and supervisory roles, which also affects income.

**Workforce activity and mobility.** Only 51% of the forest sector labour force worked full-year full-time in 2015 and over a third changed their place of residence in the five years between 2011-2016. There are many reasons that affect how much time workers work and whether they change residence, and census data do not enable us to draw conclusions about these reasons. However, the data do show different patterns between groups and sub-sectors. Across the sector, only 1% of men are engaged in full-year part-time work, but this proportion ranges from 3% to 9% for women, depending upon the sub-sector. Women, Indigenous people and immigrants are all more likely to have moved in the five years before the 2016 Census than men, non-Indigenous people and non-immigrants.

**Comparing the forest sector to other sectors.** Other sectors of the Canadian economy also face challenges with diversity and so we compared the situation in the forest sector against the Agriculture and Manufacturing sectors and against the total for All Industries. The forest sector has lower proportions of women and immigrants than the Agriculture and Manufacturing sectors but has higher proportions of Indigenous people. The wage gap between women and men exists in all three sectors, but the gap in forestry is relatively less than in Agriculture.

**Training of forestry professionals.** The proportion of women graduating from professional forestry programs is close to parity with men having moved from a low of 31% in 2015 to 48% in 2020. However, women continue to remain underrepresented in graduation rates from technical forestry programs. The proportion of women graduating from technical forestry programs had remained steady between 31% and 34%, except for 2017 when the completion rate was 39%.

**Moving forward.** The goal of this report is to provide a basis for actions to promote diversity in Canada's forest sector and a baseline for being able to evaluate changes. The statistical data presented in this report highlight the state of diversity in Canada's forest sector but does not provide explanations for the patterns observed. Further work is needed to:

- *Identify specific issues, questions and needs for targeted research to understand the extent to which employment practices and conditions shape recruitment, retention, and satisfaction of a diverse workforce;*
- *Determine priorities for collecting additional data on various groups;*
- *Develop reliable sources for more frequent monitoring of selected indicators; and*
- *Develop a framework and tools to collect reliable information within individual organizations across the forest sector.*

## Résumé

Le présent rapport s'inscrit dans le cadre d'un effort pancanadien visant à promouvoir la diversité au sein de la main-d'œuvre du secteur forestier. Bien qu'il soit généralement reconnu que les femmes, les Autochtones et les immigrants sont sous-représentés dans le secteur forestier, entre autres, l'ampleur de cette sous-représentation n'a pas été bien documentée. Nous examinons les progrès réalisés dans le passé et la situation actuelle pour mieux comprendre les défis auxquels nous sommes confrontés. Dans ce rapport, nous nous penchons sur la situation des femmes, des Autochtones et des immigrants, bien que les efforts de promotion de la diversité puissent concerner d'autres groupes.

Certains lecteurs pourraient être tentés de se concentrer sur certains résultats, comme le fait que les femmes occupaient 17 % des emplois dans le secteur forestier canadien en 2016. Si ce chiffre représente une légère amélioration par rapport à 14 % en 1996, cela démontre également que le changement est lent.

Toutefois, la promotion de la diversité dans le secteur forestier canadien est une tâche complexe qui exige une compréhension plus détaillée de la situation qu'un seul chiffre. Nous décrivons cette situation en utilisant une variété d'indicateurs de la diversité, chacun accompagné d'un tableau ou de graphiques et d'une explication.

Ceux-ci présentent souvent un « instantané » de la situation (le plus souvent du recensement canadien de 2016) ou montrent l'évolution sur une période de plusieurs années (par ex. 1996 à 2016). Cependant, les informations disponibles ne nous permettent pas de dire pourquoi cela se produit et notre capacité à tirer des conclusions est donc limitée. Cependant, chacun de ces indicateurs devrait vous aider à comprendre un défi particulier lié à la diversité. Il n'est pas nécessaire de lire ce rapport dans l'ordre – nous vous suggérons plutôt d'utiliser la table des matières pour choisir les sujets qui vous intéressent le plus. Souvent, vous trouverez les informations clés dans un seul graphique, un tableau ou un court paragraphe. Néanmoins, nous vous invitons à poursuivre votre lecture afin de comprendre certaines subtilités ou limites qui affecteront très certainement la façon dont vous utiliserez ces informations.

Vous pourriez être intéressé par les thèmes suivants :

**La vue d'ensemble.** La transition vers l'équité entre les genres dans le secteur forestier a été lente. Le taux de participation des femmes travaillant dans le secteur a connu une modeste augmentation, passant de 14 % en 1996 à seulement 17 % en 2016. Pour les immigrants et les Autochtones, la participation en 2016 était encore plus faible, s'établissant respectivement à 12 % et 7 % en 2016. Toutefois, certains sous-secteurs forestiers sont plus favorables à certains groupes qu'à d'autres, tandis que différentes parties du pays ont déclaré des proportions de femmes ou d'autres groupes plus élevées (ou plus faibles) que les provinces voisines.

**La diversité dans certains emplois et dans les régions.** Alors que les femmes occupent 17 % de tous les emplois du secteur forestier, cette proportion varie d'un type d'emploi à l'autre : seulement 1 % des conducteurs de camion de transport, 31 % des manœuvres dans le traitement et la transformation et 98 % des adjoints administratifs sont des femmes. La participation des immigrants dans le secteur varie également : 8 % pour les charpentiers et 37 % pour les opérateurs/opératrices de machines à scier. Pour mieux comprendre les emplois les plus courants dans les différents groupes, nous présentons la participation dans 20 des emplois les plus courants du secteur – pour tous les travailleurs, pour les femmes et pour les immigrants. Si l'on se concentre sur les tendances depuis 1991, on constate que la proportion de femmes dans 15 emplois en particulier a généralement augmenté, mais une seule profession a connu une amélioration constante : les technologues et techniciennes en foresterie, qui sont passées de 15 % en 1991 à 21 % en 2016. La proportion de femmes dans les postes d'opération de machines de transformation du papier a diminué de 26 % à 20 % au cours de la même période. En ce qui concerne les variations régionales, l'Ontario a enregistré la participation la plus élevée des femmes dans le secteur forestier, soit 21 %, suivi de près par les provinces des Prairies (19 %), l'Alberta (18 %), le Québec (16 %) et la Colombie-Britannique (15 %).

**L'écart salarial.** Nous avons utilisé quatre différents indicateurs de revenus, et avons trouvé des preuves convaincantes d'un écart salarial important entre les hommes et les femmes, mais avec des différences moins marquées pour les Autochtones et les immigrants. Cet écart se remarque dans le revenu annuel médian de chaque sous-secteur et dans les emplois les plus fréquents. Nous avons relevé 13 emplois où les femmes gagnent moins de 75 % du revenu des hommes, et un seul emploi (réceptionniste) où les femmes gagnent plus qu'eux (avec une différence de 4 %). Nous avons suivi l'évolution des revenus dans six professions entre 1990 et 2015, et nous avons constaté que le taux d'amélioration varie selon les emplois et que l'écart salarial persiste. Enfin, les femmes sont moins susceptibles d'occuper des postes de direction et de supervision, ce qui a également une incidence sur le revenu.

**L'activité et la mobilité de la main-d'œuvre.** Seulement 51 % de la main-d'œuvre du secteur forestier travaillait toute l'année à temps plein en 2015, et plus d'un tiers a changé de lieu de résidence en cinq ans (de 2011 à 2016). De nombreuses raisons influencent le temps de travail des gens et le fait qu'ils déménagent; les données du recensement ne nous permettent pas de tirer des conclusions à leur sujet. Toutefois, les données soulèvent des différences dans l'activité et la mobilité entre les groupes et les sous-secteurs. Dans l'ensemble du secteur, seul 1 % des hommes travaillent à temps partiel toute l'année, mais cette proportion varie de 3 à 9 % pour les femmes, selon le sous-secteur. Les femmes, les Autochtones et les immigrants sont tous plus susceptibles d'avoir déménagé au cours des cinq années précédant le recensement de 2016, que les hommes, les non-Autochtones et les non-immigrants.

**La comparaison du secteur forestier à d'autres secteurs.** D'autres secteurs de l'économie canadienne sont également confrontés à des défis en matière de diversité. Nous avons donc comparé la situation du secteur forestier à celle des secteurs de l'agriculture et de la fabrication, et à celle de l'ensemble des industries. Le secteur forestier a une plus faible proportion de femmes et d'immigrants que les secteurs de l'agriculture et de la fabrication, tandis qu'il compte une plus grande proportion d'Autochtones. L'écart salarial entre les femmes et les hommes existe dans les trois secteurs, mais l'écart est relativement moindre dans le secteur forestier que dans le secteur agricole.



**La formation des forestières professionnelles.** La proportion de femmes diplômées de programmes professionnels en foresterie tend vers la parité avec les hommes, passant de 31 % en 2015 à 48 % en 2020. Toutefois, les femmes demeurent sous-représentées dans les taux de diplomation des programmes techniques de foresterie. La proportion de femmes diplômées des programmes techniques de foresterie est restée stable entre 31 % et 34 %, sauf en 2017 où le taux de réussite était de 39 %.

**L'avenir.** L'objectif de ce rapport est de fournir un point de départ pour promouvoir la diversité dans le secteur forestier du Canada, et un point de référence pour évaluer les changements. Les données statistiques présentées dressent le portrait de la diversité dans le secteur forestier canadien, mais ne fournissent pas d'explications sur les tendances observées. D'autres travaux sont nécessaires afin de :

- Déterminer les enjeux, les questions et les besoins particuliers de recherches ciblées afin de comprendre dans quelle mesure les pratiques et les conditions d'emploi ont un effet sur le recrutement, le maintien en poste et la satisfaction d'une main-d'œuvre diversifiée ;
- Fixer les priorités concernant la collecte de données supplémentaires sur divers groupes ;
- Trouver des sources d'information fiables pour effectuer un suivi plus fréquent de certains indicateurs ;
- Développer un cadre et des outils pour recueillir des informations fiables au sein des organisations individuelles dans l'ensemble du secteur forestier.

# 1 Promoting diversity in Canada's forest sector

Canada is recognized as a global leader in sustainable forest management, and the forest sector remains one of the vital pillars of the Canadian economy. Notably, in rural and Indigenous communities, the forest sector is an important employer and a significant driver of local economic development. While forest management in Canada has evolved to embrace a diverse set of values, including cultural, social, and ecological in addition to monetary values, the diversity of labour force participation in the sector is less than other sectors. For instance, women and immigrants remain significantly underrepresented in many segments of Canada's forest sector. While data on gender and diversity in the forest sector help provide a broad portrait, the data are often insufficient for a detailed understanding of causes and effects, hampering efforts to develop policies and programs to support greater diversity in the sector.

The Canadian forest sector would benefit from a diverse and inclusive workforce. Research suggests that organizations with a diverse workforce also show enhanced profitability and creativity, effective governance, and better problem-solving abilities. Thus, the moral argument for greater workplace diversity is supported by business recognition that a diverse workforce enhances company financial security and thereby provides a business case for employers to invest in measures to promote diversity.

In 2018, the Canadian Institute of Forestry / Institut forestier du Canada (CIF-IFC) and the Centre for Social Intelligence (CSI) joined to address gender inequality in the forest sector. They established a Gender Champions Committee comprised of influential stakeholders in the sector to develop a new vision and a National Action Plan for the industry. The Action Plan identified three main areas for action to address gender inequality in the forest sector:

- *Building the evidence base through data collection;*
- *Fostering an inclusive culture by identifying best practices on policies and programs on gender equality in the workplace; and*
- *Repositioning the sector by communicating to Canadians that the forest sector is open to both men and women.*

This report focuses on addressing the building the evidence base through data collection component of the Action Plan to provide a more detailed understanding of the diversity challenges faced in the forest sector.

## 1.1 Reliable data for understanding diversity

Reliable data are essential for measuring progress, understanding the current situation, and evaluating the future effects of what we might change now. This report is based on the best available data to describe Canada’s forest sector labour force – the five yearly censuses carried out by Statistics Canada. Most of our data come from the 2016 Canadian Census, but we also use data from other five-yearly censuses (1996, 2001, 2006, and 2011) to examine changes over time.

In this report, the “forest sector” is composed of four sub-sectors - Forestry and Logging, Support Activities for Forestry, Wood Product Manufacturing (including sawmills and engineered wood), and Paper Manufacturing (including pulp and paperboard)<sup>1</sup>. These are standard categories established through the *North American Industry Classification System* (NAICS), ensuring that our data can be compared to other studies and across the decades. We recognise the growing significance of other forest-related activities, such as biofuels, carbon accounting, and recreation, but these are not included in our analysis.

Census data presented here come from two main sources. Firstly, Natural Resources Canada (Canadian Forest Service) provided us with a Custom Build of the 2016 Census filtered for the forest sector (as defined above). This included extensive data on labour related variables such as gender, immigrant and Aboriginal status, occupation, work activity, income, education, and geography. Secondly, we used data tables that are publicly available on the Statistics Canada website, especially for data from previous censuses. Data were accessed using both the web interface and the *Beyond 20/20* viewing program provided by Statistics Canada and were analysed in Excel. These data files are available for further analysis.

Section 7 is the only part of this report that does not use census data. This section examines trends in forestry training using data from the Canadian Institute of Forestry / Institut forestier du Canada (CIF-IFC). These data are not as reliable as that from Statistics Canada but provide an example of how data from other sources can be used to provide different perspectives and a deeper understanding of specific needs and challenges than is possible with the census.

As with all data, there are certain limitations on interpretation. First, the data presented describe the situation that exists – nature and patterns of diversity. However, there are a number of factors that could cause these patterns and the data presented here do not enable us to provide explanations, draw conclusions, or answer “Why does this occur”? Secondly, census data are based on a sample and values for certain variables are rounded to protect confidentiality. This limitation increases inaccuracy as data are divided into ever-small groups – such as immigrants in Paper Manufacturing in the Atlantic provinces. Thirdly, data describe a specific moment in time and so many of our analyses present the situation during the Census in 2016 and are now out of date. Further details on data, categories and terms are defined in Annex 1.

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<sup>1</sup> NAICS codes are 113, 1153, 321 and 322 respectively. Note that “Forestry Support Activities” is actually an “industry group” in the NAICS hierarchy, but we will refer to it as a sub-sector for simplicity.

## 2 The Big Picture

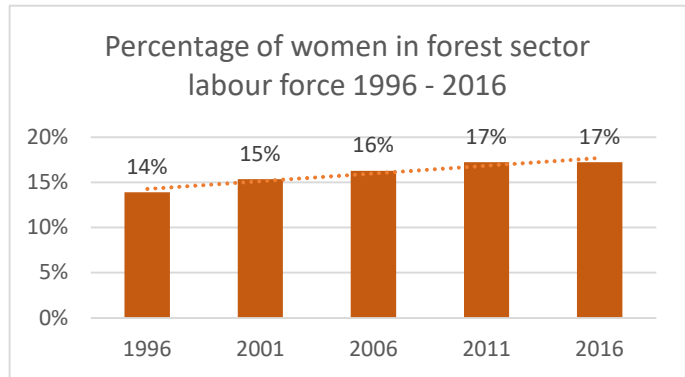
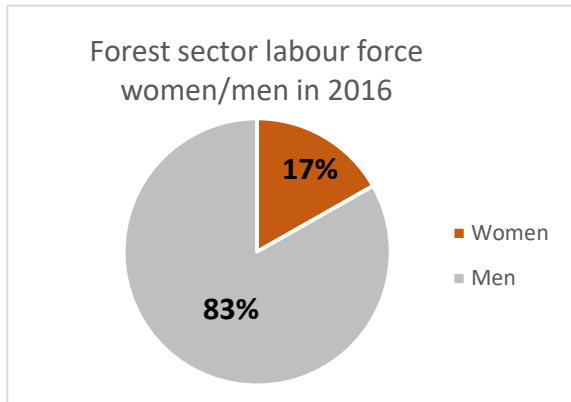
The simplest way to track diversity in Canada’s forest sector is by the overall proportion of each group in the sector labour force. Canada’s five-yearly census tracks the national labour force across all sectors of the economy using the North American Industry Classification System (NAICS). While the “forest sector” is not defined in NAICS, the forest sector is generally accepted as comprising four sub-sectors - Forestry and Logging (NAICS 113), Support Activities for Forestry (NAICS industry group 1153), Wood Product Manufacturing (NAICS 321), and Paper Manufacturing (NAICS 322, including pulp and paperboard).

We have used data from Statistics Canada that describe the total labour force, by NAICS codes, for each census since 1996. Methodological changes in the 2011 Census affected the reliability of these data in relation to other censuses and so we have excluded 2011 data from some of our analyses. Publicly available tables from Statistics Canada go further in breaking down these data by gender (all five censuses since 1996), by Indigenous status (2016 only) and by immigrant status (2006 and 2016 only). Statistics Canada data tables also allow us to breakdown these data by provinces, thereby enabling us to report on the historical proportions of women in the Paper Manufacturing labour force since 1996 in British Columbia (BC) (for example). For practical purposes, we have grouped provinces and territories that have smaller forest sectors – Prairies (SK & MN), Atlantic (NB, NE, TNL & PEI) and the Territories with BC, Alberta, Ontario and Quebec, the largest forest product producers, each in their own category.

This section provides a broad overview of diversity in the forest sector labour force using the following indicators:

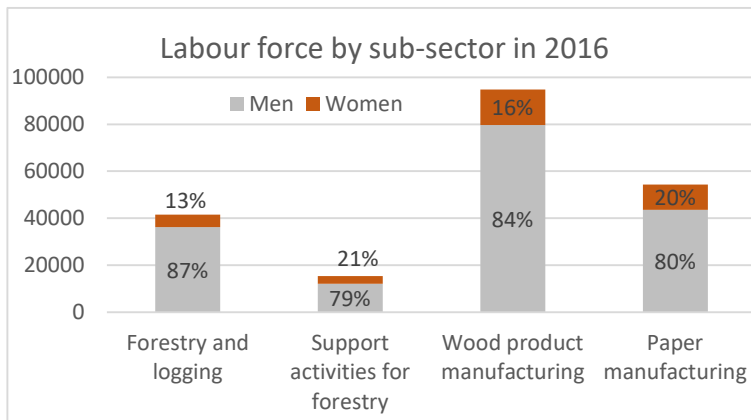
- Percentage of women in the forest sector since 1996;
- Percentage of women in each forest sub-sector since 1996;
- Percentage of women in the sector and each sub-sector by province in 2016;
- Percentage of Indigenous people in the forest sector and each sub-sector and by province in 2016; and
- Percentage of immigrants in the forest sector and each sub-sector in 2011 and 2016, and by province in 2016.

## 2.1 Gender – The big picture from 1996 to 2016

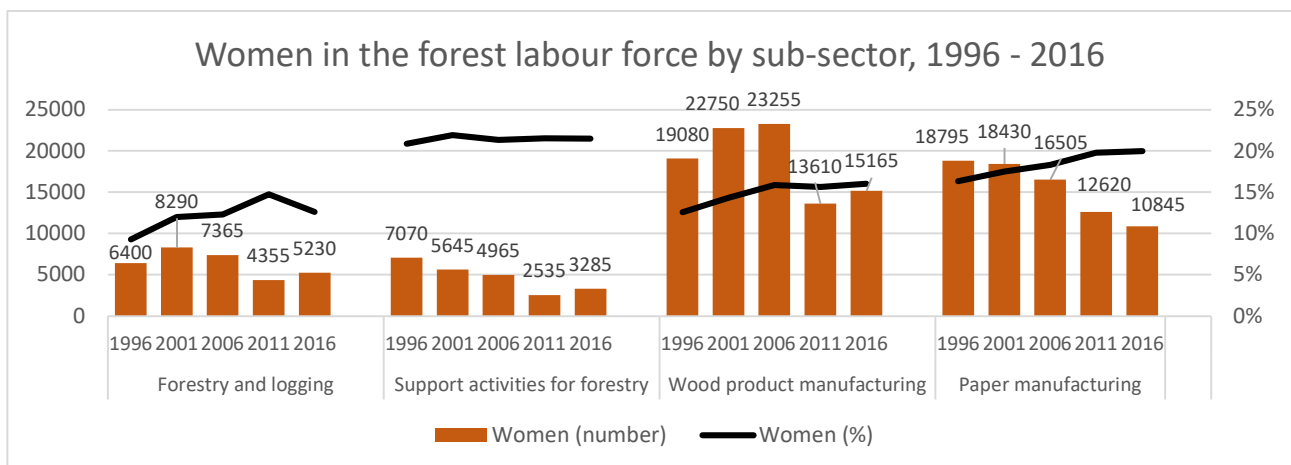


Women made up 48% of Canada’s total workforce in the 2016 Census, but just 17% of forest sector employees were women– 34,530 women in a total sector labour force of 205,915. Additionally, movement towards gender equality in the sector has been very slow as the proportion of women in the sector labor force has only increased from 14% to 17% since 1996.

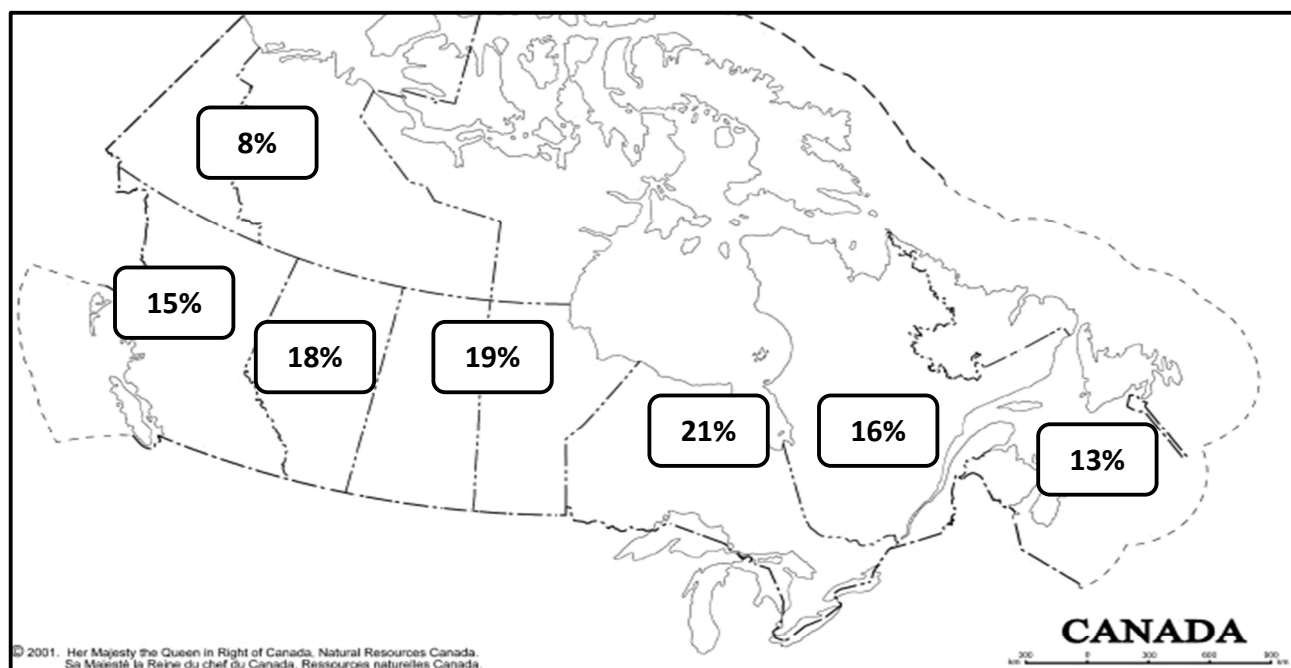
The forest sector labour force has fallen steadily from 369,480 in 1996 to 205,915 in 2016. However, this does not seem to have had an adverse effect on diversity. During this period, the proportion of women in the forest sector labour force increased, although the actual number of women dropped from 51,340 to 34,530.



Looking just at the overall percentage of women in the sector masks significant variations in sub-sectors. Support Activities is the sub-sector with the highest proportion of women labour force, steady at 21%-22% over 20 years, but it is also the sub-sector that provides the fewest jobs. The proportion of women has increased since 1996, except for a drop in Forestry and Logging in 2016.



## 2.2 Gender – Regional variations in 2016

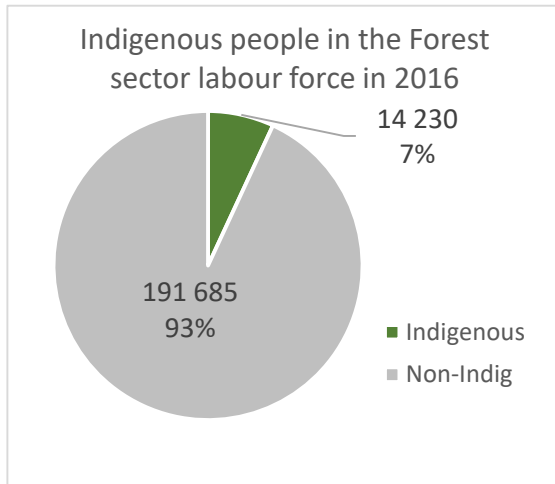


In 2016, Ontario had the highest proportion of women in the forest sector labour force, followed by the Prairies, with the Atlantic region having the lowest proportion. The Ontario results are especially evident with above average percentages of women in the Paper Manufacturing sub-sector (26%) and in Support Activities (28%). In contrast, the Atlantic region has the lowest proportions among all the provinces, both for the sector as a whole and for each of the sub-sectors. The forest sector labour force in the Territories is only 265, too small for meaningful analysis.

**Women in the forest sector labour force by sub-sector and province**

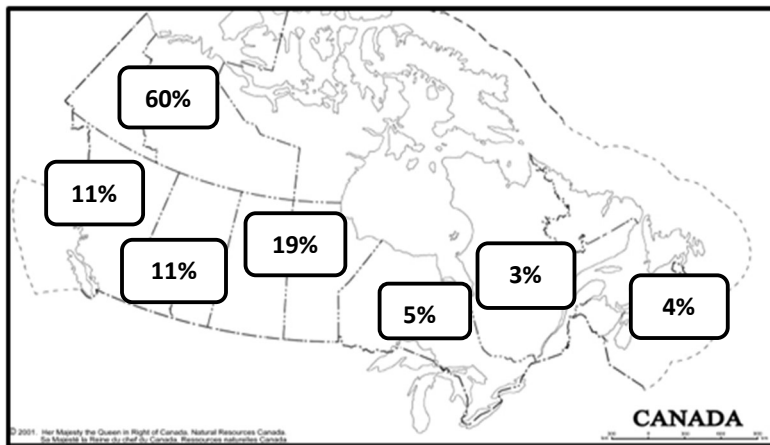
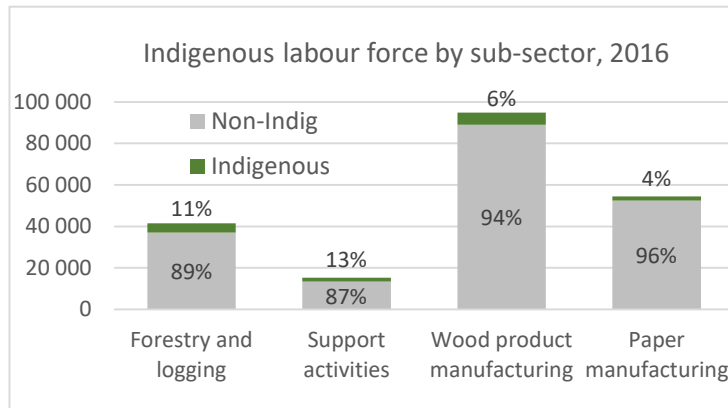
	Women	Brit. Col.	Alberta	Prairies	Ontario	Québec	Atlantic
<b>Forest Sector</b>	as%	15	18	19	21	16	13
	number	8,390	2,885	1255	8,900	10,695	2385
Forestry and Logging	as%	14	16	13	11	12	9
	number	2,390	460	145	470	1,335	425
Support Activities for Forestry	as%	22	22	20	28	19	14
	number	1090	270	85	890	715	230
Wood Product Manufacturing	as%	14	18	21	17	16	16
	number	3,625	1,545	770	3,005	5,125	1085
Paper Manufacturing	as%	15	20	19	26	18	13
	number	1,280	610	260	4,540	3,515	650

## 2.3 Indigenous People – The big picture and variations in 2016



Indigenous people represented 7% of the forest sector labour force, or 14,230 persons in 2016. This is higher than their proportion in the total population (4.9%). The Indigenous population has grown by 42.5% since 2006 and is projected to exceed 2.5 million persons in the next two decades. Although the proportion of Indigenous people living in rural areas is falling, the high growth rate suggests that they will be increasingly important in the forest sector labour force.

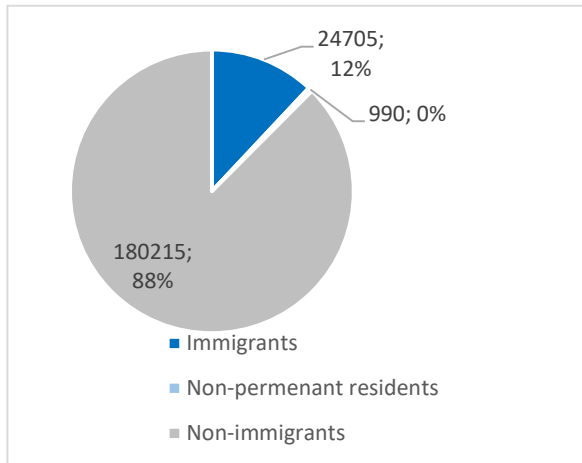
The proportion of Indigenous people by sub-sector reflects the rural distribution of this population. Support Activities has the highest proportion at 13%, followed by Forestry and Logging (11%). Wood Products provides the greatest number of Indigenous jobs (5,830), but Indigenous people represent only 6% of the labour force in this sub-sector



Across the provinces, the proportion of Indigenous people in forest sector occupations in 2016 varied from 25% in Saskatchewan and 19% in the Prairies to 3% in Quebec. In the Prairies, Alberta and BC, the proportion of Indigenous people in the forest labour force was much higher than their proportion in the general population. The high value in the Territories reflects a tiny forest sector labour force of only 265.

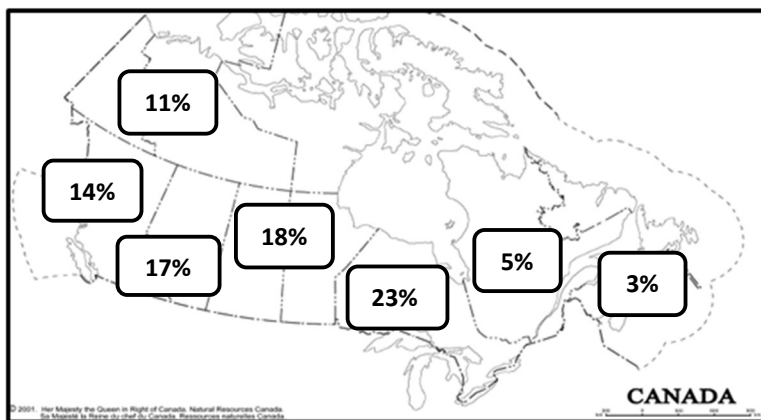
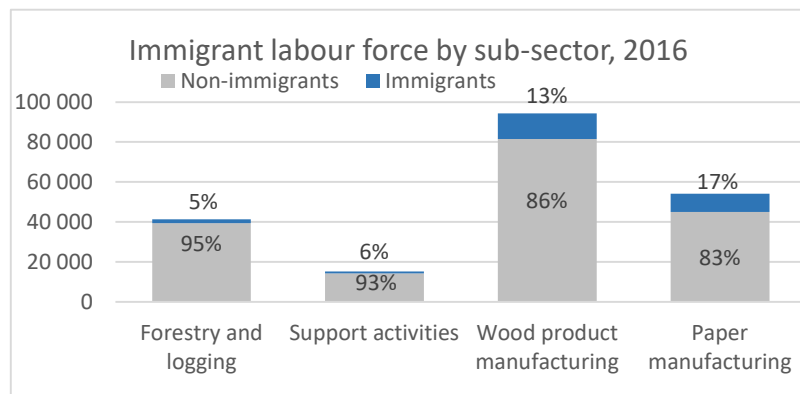
Indigenous	B.-C.	Al	Pr	Ont	Qc	Atl
% in sector	11	11	19	5	3	4
% of population	6	7	17	3	2	6

## 2.4 Immigrants – The big picture and variations in 2006 and 2016



Immigrants and non-permanent residents comprised about 23% of Canada’s population in 2016, and represented 12% of the forest sector labour force, or 25,700 persons. By comparison, in 2006, about 36,640 immigrants were employed in the forest sector, or 11% of the labour force in the sector. As the 2016 Census found only 990 non-permanent residents in the forest sector labour force, this category will be excluded from the rest of our analysis.

Immigrants were more likely to be employed in Paper Manufacturing (17%) or Wood Products Manufacturing (13%) in 2016, than in Support Activities (6%) or Forestry and Logging (5%). In 2006, proportions were 13%, 13%, 7% and 5% respectively.



Immigrants	B.-C.	Al	Pr	Ont	Qc	Atl
% in sector	14	16	17	22	5	2
% of population	28	21	15	29	14	6

The Prairies is the only region where the proportion of immigrants in the forest sector labour force is higher than their proportion in the overall population. In all other provinces, their proportion is significantly lower. While Ontario and BC have a similar proportion of immigrants in the population (28-29%), they make up 22% of the sector labour force in Ontario but only 14% in BC. Quebec and the Atlantic provinces have the lowest rates of immigrants in the forest sector labour force.



### 3 Diversity in specific jobs in the forest sector

This section provides a more detailed view of diversity, examining how it varies across different types of jobs within the sector and sub-sectors. This job-level analysis highlights differences between the proportion of women and immigrants in specific occupations. While this data does not explain why certain occupations might attract higher or lower proportions of women, it does help guide future research to understand the factors that contribute to an occupation being more or less diverse, thus helping to determine effective measures to promote diversity.

To examine this issue, we use data from the 2016 Census, combining the industry sector categories (NAICS) with the actual jobs that are being performed, as defined by the National Occupation Classification (NOC)<sup>2</sup>. This is important as some occupations, such as Administrative Officers, are found across the entire workforce while others, such as Logging Machinery Operators, are usually found only in the forest sector. Combining the NAICS and NOC codes enables us to determine, for example, that 84% of Administrative Officers working in the forest sector are women while only 2% of Logging Machinery Operators are women. We do not have equivalent data for Indigenous people, who are therefore not included in this section.

Examining a list of the twenty most common occupations in the forest sector shows that the proportion of women is less than the sector average (17%) in all except three occupations, but the proportion of immigrants is above the sector average (12%) in nine occupations. The data does not provide explanations for this but does support the commonly-held perception that there are higher proportions of women in administrative roles, while machinery operators in the forest are almost exclusively men. It is also important to note that such a list reflects jobs where men are more common, and so it is also important to examine occupations that have high proportions of women and immigrants.

Combining NAICS and NOC codes was possible for only the 2016 Census and so another approach was used to track changes in gender diversity in specific occupations prior to this. We identified a total of 15 NOC codes that are almost exclusively associated with the forest sector. These occupations count for a little under half of the total forest sector labour force, but we were not able to combine these with NAICS to exclude non-forestry workers.

We examine the following indicators in this section:

- Proportions of women and immigrants in the 20 most common occupations in the forest sector in 2016;
- Comparative lists of the 20 most common occupations for women and immigrants in the forest sector in 2016; and
- Changes in the proportions of women in fifteen forest sector occupations from 1991 to 2016.

Some of the differences in specific forest sector occupations that are apparent in this section are also common in other sectors, and this will be examined further in section 6.

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<sup>2</sup> <https://www150.statcan.gc.ca/n1/en/catalogue/12-583-X>

### 3.1 Diversity in the twenty most common jobs in the forest sector

20 NOCs with highest labour force in forest sector in 2016 Census					
NOC	Occupation	Labour force in forest sector	As a % of forest sector labour force	Women as % of NOC	Immig as % of NOC
	<b>Total forest sector labour force</b>	<b>205 915</b>	<b>100</b>	<b>17%</b>	<b>11%</b>
9614	Labourers in Wood, Pulp and Paper Processing	20 075	10%	15%	11%
7452	Material Handlers	8 470	4%	7%	14%
7311	Construction Millwrights and Mechanics	8 155	4%	1%	8%
8241	Logging Machinery Operators	7 455	4%	2%	3%
9431	Sawmill Machine Operators	6 510	3%	7%	11%
8421	Chain Saw and Skidder Operators	6 495	3%	2%	3%
7511	Transport Truck Drivers	6 360	3%	1%	7%
0911	Manufacturing Managers	5 605	3%	13%	14%
8616	Logging and Forestry Labourers	5 430	3%	19%	6%
9215	Supervisors, Forest Products Processing	5 390	3%	8%	9%
9533	Other Wood Products Assemblers, Inspectors	4 860	2%	11%	22%
8422	Silviculture and Forestry Workers	4 680	2%	9%	6%
7521	Heavy Equipment Operators (except crane)	4 120	2%	2%	4%
9434	Other Wood Processing Machine Operators	4 120	2%	11%	18%
9435	Paper Converting Machine Operators	3 765	2%	18%	28%
8211	Supervisors, Logging and Forestry	3 440	2%	7%	5%
2223	Forestry Technologists and Technicians	3 255	2%	20%	4%
9437	Woodworking Machine Operators	3 195	2%	9%	15%
9241	Power Engineers and Power Systems Operators	2 705	1%	5%	7%
7271	Carpenters	2 700	1%	5%	23%
	Values at or above the sector average				Values significantly below the sector average

The twenty NOC codes shown here cover 57% of the forest sector labour force in 2016. Women are underrepresented in all these jobs, but there are three jobs in which they exceed the sector wide average of 17%. Two of these jobs are skilled roles while the other one is labourer. The situation appears better for immigrants with two occupations where the proportion of immigrants is equal to or higher than their proportion in the Canadian population (23%), and a further seven at or above the sector average (11%).

It is also apparent that occupational groups are not equally diverse. The two occupations with the highest proportions of women – Logging and Forestry Labourers and Forestry Technologists – have very low proportions of immigrants. Conversely, skilled woodworkers and operators (9434, 9437 and 7271) have high proportions of immigrants, but not of women. Both groups are better represented among Paper Converting Machine Operators.

Unfortunately, we do not have equivalent data for Indigenous people and so they are not included in this section.

### 3.2 The most common jobs for women in the forest sector

The preceding list of the most common NOCs in the forest sector unavoidably focuses on those occupations where there are high numbers of men as men represent most workers in the forest sector. Here we present a similar list of the occupations in the forest sector which have the highest numbers of women.

20 NOCs with highest numbers of women in forest sector labour force in 2016 Census			
NOC	Occupation	Women in sector labour force	Women as% of NOC
	<b>Total forest sector labour force</b>	<b>34 515</b>	<b>17%</b>
9614	Labourers in Wood, Pulp and Paper Processing	2 955	15%
1241	Administrative Assistants	1 955	98%
1431	Accounting and Related Clerks	1 355	90%
1221	Administrative Officers	1 165	84%
1411	General Office Support Workers	1 130	83%
1311	Accounting Technicians and Bookkeepers	1 080	92%
8616	Logging and Forestry Labourers	1 040	19%
9619	Other Labourers in Processing, Manufacturing and Utilities	835	31%
1111	Financial Auditors and Accountants	800	56%
6552	Other Customer and Information Services Representatives	725	80%
0911	Manufacturing Managers	705	13%
9435	Paper Converting Machine Operators	660	18%
2223	Forestry Technologists and Technicians	650	20%
7452	Material Handlers	610	7%
9533	Other Wood Products Assemblers and Inspectors	550	11%
1414	Receptionists	520	91%
1432	Payroll Administrators	515	93%
6411	Sales and Account Representatives - wholesale trade (non-tec)	480	25%
9431	Sawmill Machine Operators	465	7%
9434	Other Wood Processing Machine Operators	450	11%

Values **below** the sector average

The twenty jobs listed here account for 18 645 women, or 54% of women in the forest sector labour force. This list shows the prevalence of finance and administration jobs for women, with a total of 9 725 jobs, in comparison to the total absence of these occupations in the list of the most common jobs in the forest sector. However, it is important to note that these occupations tend to be over-represented by women regardless of industry sector.

The occupation with the highest number of women is Labourers in Wood, Pulp and Paper Processing, which also leads the general list. The next five positions are all in administrative roles with a combined total of 6 685 women. The list also includes 1 575 women as Machine Operators and another 1 100 as Forest Technicians and as Wood Products Assemblers and Inspectors. However, there are still five occupations where the proportion of women is below the sector average of 17%.

### 3.3 The most common jobs for immigrants in the forest sector

This list presents the 20 occupations in the forest sector which have the highest numbers of immigrants. The 2016 Census reports a total of 24 705 immigrants in the forest sector labour force. This does not include the 990 non-permanent residents.

20 NOCs with highest numbers of immigrants in forest sector labour force in 2016 Census			
NOC	Occupation	Immigrants in sector labour force	Immigrants as % of NOC
	<b>Total forest sector labour force</b>	<b>24 705</b>	<b>12%</b>
9614	Labourers in Wood, Pulp and Paper Processing	2 290	11%
7452	Material Handlers	1 165	14%
9533	Other Wood Products Assemblers and Inspectors	1 080	22%
9435	Paper Converting Machine Operators	1 070	28%
9619	Other Labourers in Processing, Manufacturing	985	37%
0911	Manufacturing Managers	800	14%
9434	Other Wood Processing Machine Operators	730	18%
9431	Sawmill Machine Operators	710	11%
7271	Carpenters	620	23%
7311	Construction Millwrights and Industrial Mechanics	620	8%
9215	Supervisors, Forest Products Processing	490	9%
9235	Pulping, Papermaking and Coating Control Operators	470	19%
9437	Woodworking Machine Operators	465	15%
7511	Transport Truck Drivers	415	7%
9433	Papermaking and Finishing Machine Operators	380	15%
9436	Lumber Graders and other Wood Processing Inspectors	325	12%
9537	Other Products Assemblers, Finishers and Inspectors	325	27%
8616	Logging and Forestry Labourers	320	6%
1111	Financial Auditors and Accountants	305	21%
1521	Shippers and Receivers	300	15%

Values **below** the sector average

The twenty jobs listed here account for 13 865 immigrants, or 56% of all immigrants in the forest sector labour force. This list shows the prevalence of skilled trades for immigrants, especially in manufacturing processes, although Labourers in Wood, Pulp and Paper Processing are again in the top position on this list. Although immigrants occupy significant proportions of the skilled trades jobs, they are more rarely to be found as Supervisors (9% for NOC 9215) or as Managers (14% for NOC 0911). If non-permanent residents are added to this list, there are some slight changes in the order, but the same twenty occupations remain.

### 3.4 Changes in gender proportions for selected occupations 1991 - 2016

Knowing that the proportion of women in the forest sector labour force has increased from 14% in 1996 to 17% in 2016, it is useful to know if change has been steady across the sector, or if change has been more rapid in some occupations than in others. As we do not have cross-linked NAICS-NOC data for previous censuses, we have chosen to focus on 15 occupations (NOCs) that are highly specific to the forest sector and can show us how the proportion of women in the sector has changed over time. In the absence of NAICS codes, this will include a small number of individuals who may not be working in the forest sector, although their occupation is strongly associated with the sector, such as Forestry Technologists and Technicians working for hydroelectric companies.

Gender diversity in 15 forest specific occupations between 1991 and 2016							
NOC	Occupation	Women as% of NOC					
		1991	1996	2001	2006	2011	2016
2122	Forestry Professionals	8%	13%	15%	14%	17%	19%
2223	Forestry Technologists and Technicians	15%	15%	17%	16%	18%	21%
8211	Supervisors, Logging and Forestry	5%	8%	6%	5%	8%	8%
8241	Logging Machinery Operators	1%	1%	3%	2%	2%	2%
8422	Silviculture and Forestry Workers	16%	13%	13%	13%	16%	13%
8616	Logging and Forestry Labourers	17%	15%	17%	20%	17%	19%
9215	Supervisors, Forest Products Proc.	3%	4%	6%	6%	6%	8%
9235	Pulping, Papermaking & Coating Oper.	5%	8%	6%	6%	5%	11%
9431	Sawmill Machine Operators	3%	4%	5%	5%	7%	7%
9432	Pulp Mill Machine Operators	4%	4%	5%	7%	7%	7%
9433	Papermaking & Finishing Machine Oper	9%	12%	14%	14%	12%	16%
9434	Other Wood Processing Machine Oper	11%	9%	14%	15%	10%	13%
9435	Paper Converting Machine Operators	26%	25%	24%	24%	22%	20%
9436	Lumber Graders and Other Inspectors	8%	11%	15%	18%	12%	16%
9614	Labourers in Wood, Pulp & Paper Proc.	16%	10%	13%	15%	14%	16%

It is important to note that the 2011 Census did not report data for the whole workforce, presenting the number of employed workers instead – a lower number than the workforce.

While the proportion of women in the forest sector labour force has increased over this period of twenty-five years, few of these specific occupations show a steady rate of change. Indeed, all except three (NOCs 9215, 9431, 9432) have seen a drop over at least one census period.

It is interesting to note that the proportions of women working as Paper Converting Machine Operators has fallen from 26% in 1991 to 20% in 2016. This highlights the importance of historical data – an analysis of 2016 data alone would suggest that this occupation is especially good for women, with only Forestry Technologists and Technicians having a higher proportion of women.

## 4 The wage gap in the forest sector

Anecdotes have long referred to a possible wage gap between men and women in the forest sector and our data confirms this. However, there are multiple causes of differences in income, including occupation types, educational qualifications, years of experience, number of hours worked, and pauses in work history. The analyses that we provide allow us to quantify the extent of the differences, but not to draw conclusions about why these differences exist. We have analysed this wage gap from several different perspectives and have also compared the extent of income differences for women, Indigenous people, and immigrants. Taken together, these indicators demonstrate a significant and persistent wage gap between men and women in the forest sector. They also indicate that the wage gap is much less significant for Indigenous people and immigrants.

This section uses data from each census that reports employment income for the preceding year, presented by industry sector, occupations, gender, immigrant status and Aboriginal identity. For analysing the 2016 Census we have used median income as the most appropriate indicator<sup>3</sup>. However, for comparison with older censuses, we have had to use average income, which is usually higher. It is also important to note that in the census results, income refers to the year before the census while the labour force refers to the actual date when the census was conducted (June 30). These results could misrepresent people who moved into or out of the forest sector in the six months before the census. The censuses also relate different occupations to a standard classification of roles and responsibilities, enabling us to compare the proportions of men and women exercising certain levels of responsibility within the sector (but not the sub-sector).

This section presents:

1. Median annual employment income for various groups in each sub-sector in 2015;
2. Median annual employment income for men and women in the 20 most common forest sector occupations in 2015;
3. Median annual employment income for men and women in the 20 occupations with the highest numbers of women in the forest sector in 2015;
4. Changes in comparative income for women and men in six specific occupations since 1990; and
5. A comparison of roles and responsibilities in the sector for men and women and for immigrants and non-immigrants.

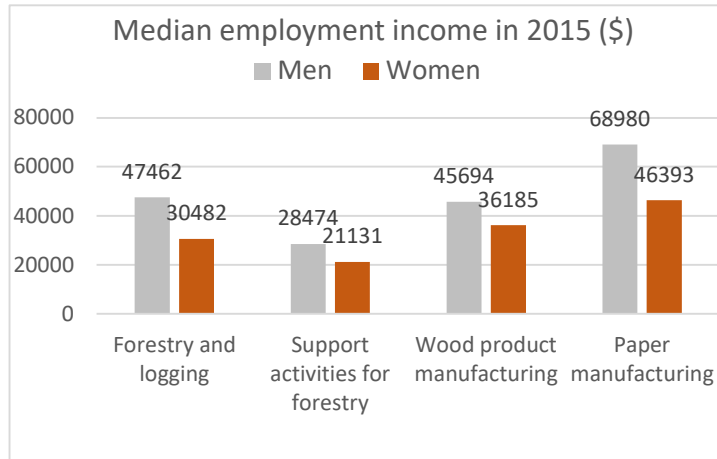
Some of the differences in income that are apparent in this section are also common in other sectors of the economy; this will be examined further in section 6.

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<sup>3</sup> See Statistics Canada report *Measuring and Analyzing the Gender Pay Gap: A Conceptual and Methodological Overview*. <https://www150.statcan.gc.ca/n1/en/catalogue/452000022019001>

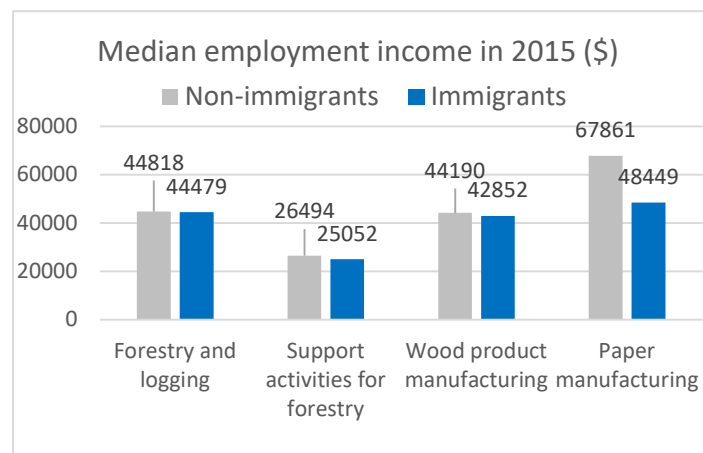
## 4.1 Median employment income in 2015 by sub-sector

Women not only have a lower median annual employment income than men, but the difference is more important than for immigrants or Indigenous people. Furthermore, each sub-sector shows quite different patterns associated with the wage gap.

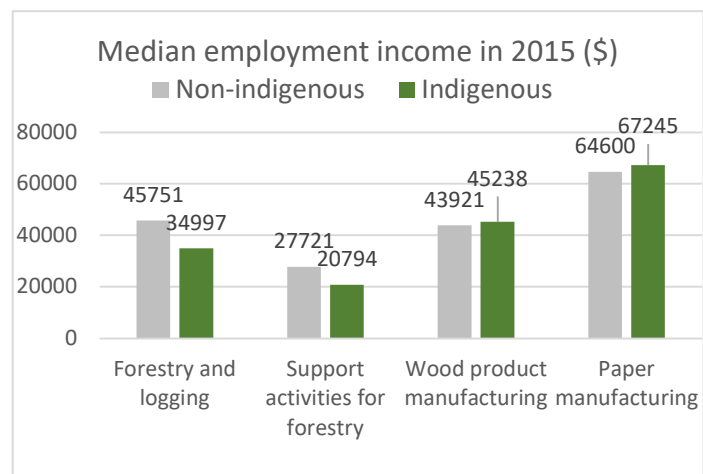


Median annual income (2015) for women is markedly lower than that for men across all four sub-sectors. The gap is most pronounced in Forestry and Logging and in Paper Manufacturing where the median income for women was approximately one-third less than that of men (\$30 482 vs \$47 462 and \$46 393 vs \$68 980 respectively).

Immigrants in all four sub-sectors have a lower median income than non-immigrants, although the difference is 5% or less in three sub-sectors. However, in the Paper Manufacturing sub-sector the median income for immigrants is 24% less than for non-immigrants, a difference of nearly \$20 000 per year.



Indigenous people have a lower median income than non-Indigenous people in two sub-sectors— Forestry and Logging, and Support Activities for Forestry. The difference is greatest in Support Activities, where Indigenous income is 22% lower than non-Indigenous income. This sub-sector is also where Indigenous people make up the highest proportion of the labour force (section 2.4), where the median income is the lowest, and part-time work is the most common (section 5.1). In the other two sub-sectors — Wood Product Manufacturing and Paper Manufacturing — median incomes for Indigenous people are slightly higher, with a margin of 5% or less.



## 4.2 Median employment income in 2015 by gender for top 20 occupations

Median employment income for 20 NOCs with highest labour force in the forest sector					
NOC	Occupation	% of Sector labour force	Median employment income in 2015		
			Men \$	Women \$	As % of Men's income
9614	Labourers in Wood, Pulp and Paper	10	33 929	26 194	77
7452	Material Handlers	4	33 120	25 708	78
7311	Millwrights, Industrial Mechanics	4	69 589	48 895	70
8241	Logging Machinery Operators	4	56 424	40 171	71
9431	Sawmill Machine Operators	3	42 189	33 960	80
8421	Chain Saw and Skidder Operators	3	25 359	13 707	54
7511	Transport Truck Drivers	3	42 805	32 030	75
0911	Manufacturing Managers	3	80 062	56 469	71
8616	Logging and Forestry Labourers	3	20 025	11 960	60
9215	Supervisors, Forest Products Process	3	71 549	59 969	84
9533	Other Wood Assemblers, Inspectors	2	30 609	26 870	88
8422	Silviculture and Forestry Workers	2	22 139	18 498	84
9434	Other Wood Machine Operators	2	44 121	32 282	73
9435	Paper Converting Machine Operator	2	49 742	33 570	67
2223	Forestry Technologists, Technicians	2	49 140	37 647	77
9437	Woodworking Machine Operators	2	34 668	27 645	80
9241	Power Engineers and Operators	1	91 401	78 255	86
7271	Carpenters	1	35 568	24 582	69
9619	Other Labourers in Manufacturing	1	24 597	20 977	85
9436	Lumber Graders and Inspectors	1	49 742	33 570	67
	<b>Weighted average median income</b>		44 410	30 174	<b>68</b>
	Values at least 25% below men				

Median employment income for women is consistently lower than that for men across the 20 most common occupations in the sector, with a gap of at least 25% in ten occupations. The greatest dollar difference is \$23,593 for manufacturing managers, but the income for women Logging Labourers and Chain Saw and Skidder Operators is only 60% and 54% respectively for men in the same occupation.

The significance of this gap is also illustrated by comparing the weighted average (*number of women in each occupation x median income for women in that occupation*). The weighted average median income for women across the top 20 occupations is \$30 174 which is only 68% of the weighted average of men's median incomes of \$44 410.



### 4.3 Median employment income in the top 20 occupations for women

As noted in Section 3.2, choosing the most common occupations in the sector actually means focusing on men's occupations. Here we compare median employment income for 2015 for men and women for the top 20 most common occupations for women.

Median employment income for 20 NOCs with highest number of women in the forest sector					
NOC	Occupation	% of Sector labour force	Median employment income in 2015		
			Men \$	Women \$	As % of Men's income
9614	Labourers in Wood, Pulp and Paper	10	33 929	26 194	77
1241	Administrative Assistants	1	32 032	36 074	113
1431	Accounting and Related Clerks	1	37 411	38 951	104
1221	Administrative Officers	1	54 235	42 582	79
1411	General Office Support Workers	1	28 818	33 378	116
1311	Accounting Technicians, Bookkeepers	1	31 861	31 271	98
8616	Logging and Forestry Labourers	3	20 025	11 960	60
9619	Other Labourers in Manufacturing	1	24 597	20 977	85
1111	Financial Auditors and Accountants	1	64 285	54 669	85
6552	Other Customer Services Represent.	0	31 086	29 175	94
0911	Manufacturing Managers	3	80 062	56 469	71
9435	Paper Converting Machine Operators	2	49 742	33 570	67
2223	Forestry Technologists, Technicians	2	49 140	37 647	77
7452	Material Handlers	4	33 120	25 708	78
9533	Other Wood Products Assemblers	2	30 609	26 870	88
1414	Receptionists	0	19 087	23 657	124
1432	Payroll Administrators	0	49 447	48 817	99
6411	Sales and Account Representatives	1	56 319	42 011	75
9431	Sawmill Machine Operators	3	42 189	33 960	80
9434	Other Wood Processing Operators	2	44 121	32 282	73
	<b>Weighted average median income</b>		39 998	33 332	<b>83</b>
	Values at least 25% below men		Women's income above men		

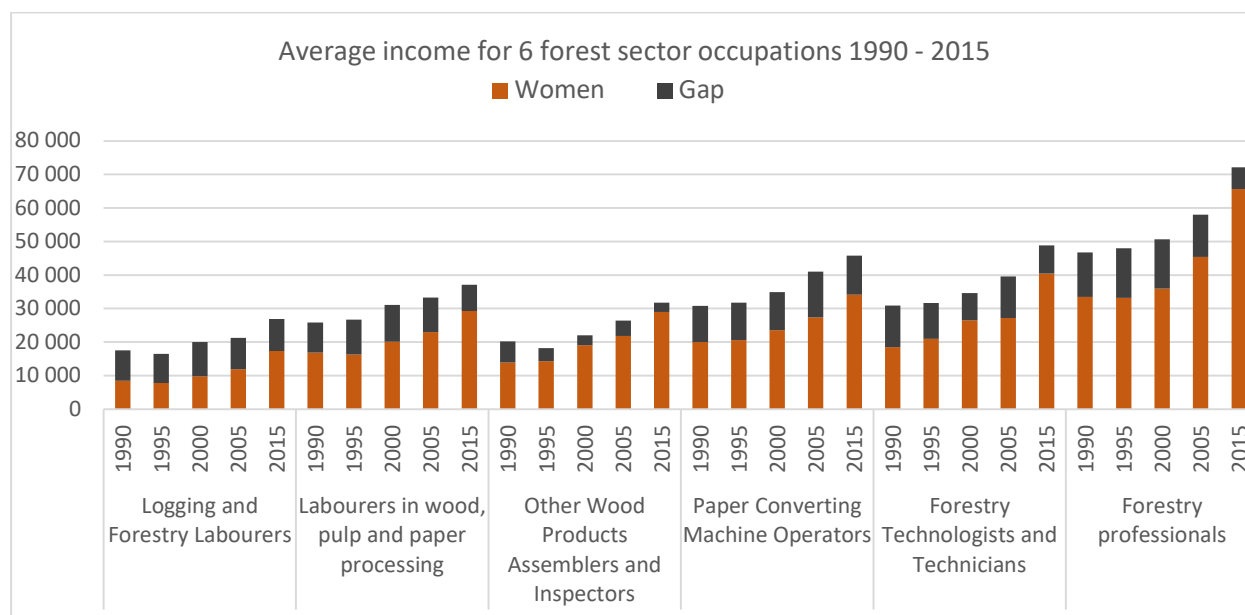
Looking at the occupations where most women work, women's median employment income is still frequently lower than men's, with a gap of at least 25% for five occupations. There are, however, four occupations where women have a higher income than men. These are all related to administration and are occupations where women count for at least 80% of the positions.

The wage gap persists in the weighted average of median employment income for the top 20 women's occupation but is less than for the overall top 20 occupations. The weighted average of median income for women is \$33 332, or 83% of that of men at \$39 998

#### 4.4 Changes in the wage gap for selected occupations 1990 – 2015

We do not have historic data showing changes in income for specific occupations within the forest sector, but we do have this data for each occupation in the NOC system and so we can focus on occupations that are almost exclusively associated with the sector (see also Section 3.5). These data show average income, which is usually higher than median income. Here, we compare average employment income for men and women in six specific occupations during the years before each census from 1996 to 2016 (excluding 2011). The six selected occupations represent all four sub-sectors and a variety of labourer, skilled and professional posts. Five of them are among our 20 top NOCs for women, with the sixth (Forestry Professionals) being included as a professional post. In the 2016 Census, 6 505 women worked in one of these six occupations (18.8% of all women in the sector), with a total of 32180 men and women (15.6% of total sector employment).

As average income for women is always below that of men in these occupations, this graph illustrates men’s income by the combined bar – Women + Gap.



The average employment income for women in these five occupations has increased over the years, but progress has been uneven, and the wage gap persists.

Logging and Forestry Labourers have the lowest income and are often part-time or seasonal. Women’s average income was only 48% of that of men in 1990, climbing to 65% in 2015. Forestry Professionals are both the best paid group and the most equitable with women at 91% of men’s income in 2015.

The wage gap for Labourers in Wood, Pulp and Paper Processing, the most common job in the forest sector, has narrowed with women receiving 65% of men’s income in 1995 and 79% in 2015. Forestry Technologists and Technicians have seen the greatest improvement, from 60% in 1990 to 83% in 2015.

The worst performance is among Paper Converting Machine Operators, where women received 65% of men’s income in 1990 and 75% twenty-five years later – despite a steady improvement in average annual income.

## 4.5 Occupational levels in the forest sector in 2016

As income is often related to roles and responsibilities within an organisation, the difference in wages may be related to the proportion of women occupying posts at different levels of responsibility and authority. Here we present the proportions of women and of immigrants (excluding non-permanent residents) at different occupational levels in the forest sector.

	Total	Women	Women %	Immigrants	Immigrants %
Senior Management Occupations	2 100	215	10%	195	9%
Middle Management Occupations	12 660	2 435	19%	1 650	13%
Professional Occupations	8 900	2 935	33%	1 390	16%
Technical Occupations	10 555	2 290	22%	1 130	11%
Supervisory Occupations	16 675	5 375	32%	1 590	10%
Support Occupations	17 625	8 585	49%	2 325	13%
Trades and Operators	95 110	6 530	7%	11 955	13%
Workers and Labourers	42 310	6 155	15%	4 475	11%
<b>All levels</b>	<b>205 915</b>	<b>34 530</b>	<b>17%</b>	<b>24 710</b>	<b>12%</b>

Women are underrepresented at all occupational levels, approaching equity only in Support Occupations, which are dominated by administration and sales and services. Women in Professional Occupations account for 33% of these posts, but this proportion falls rapidly as they advance in a career, to 19% for Middle Management Occupations and 10% for Senior Management Occupations. Similarly, the proportion of women declines from 15% of Workers and Labourers to only 7% of Trades and Operators. Women are significantly above the sector average in Supervisory Occupations, but three-quarters of these women are working in administration.

While immigrants are also underrepresented at all levels in relation to their proportion of the Canadian population (25%), the variations between the different occupation levels is less marked than for women. Immigrants are more common in middle management, professional, trade and support occupations than their sector-wide average of 12%.

## 5 Workforce activity and mobility in the forest sector

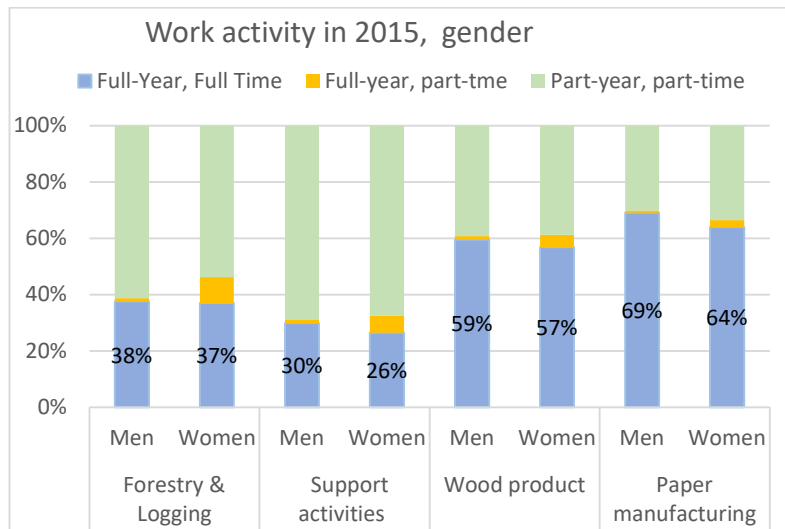
Full-year full-time employment accounted for just 51% of forest sector workers in 2015. Workers are engaged in part-time work of various forms or may move from one employer to another. Activity and mobility can reflect choices made by workers who are seeking to achieve their own objectives and preferences for career, family, or lifestyle. Alternatively, workers may feel obliged to accept certain activity and mobility options as their only way of getting or keeping a job. Here we examine how workforce activity and mobility differ for women, Indigenous people, and immigrants in the forest sector, in terms of both full-time or partial work and the proportion of people moving for employment.

This section presents:

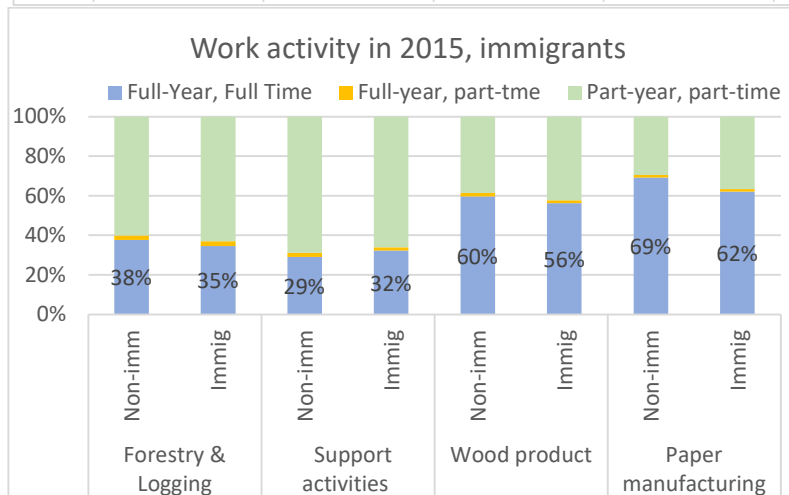
1. Proportions of workers in each group who were in full or partial employment in each sub-sector in 2015; and
2. The proportion of forest sector workers in each group who moved between 2011 and 2016.

## 5.1 Full-time and part-time employment in forest sub-sectors in 2015

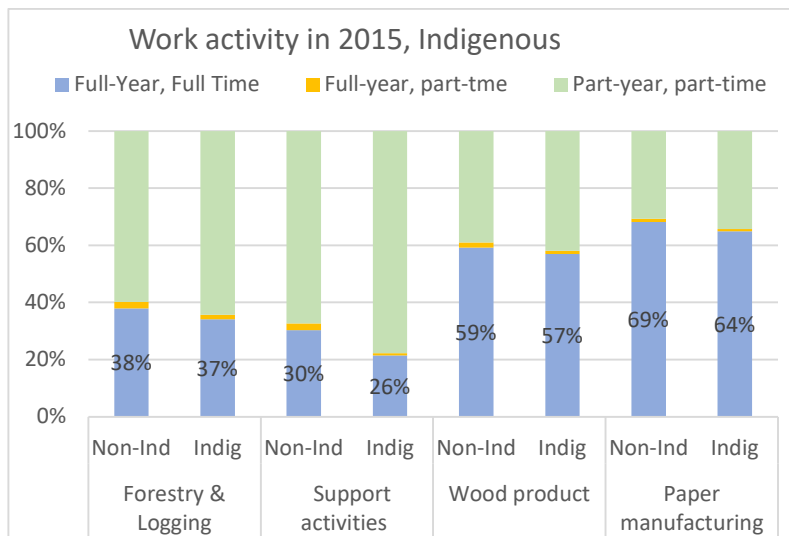
For all groups, Paper Manufacturing provides the highest proportion of full-year, full-time employment while the Support Activities sub-sector is dominated by part-year part-time work.



The proportion of women working full-year, full-time was consistently lower than the proportion of men for all sub-sectors of the Forest sector, but the difference is slight. Only 1% of men are engaged in full-year, part-time work, but this proportion is 3–9% for women.



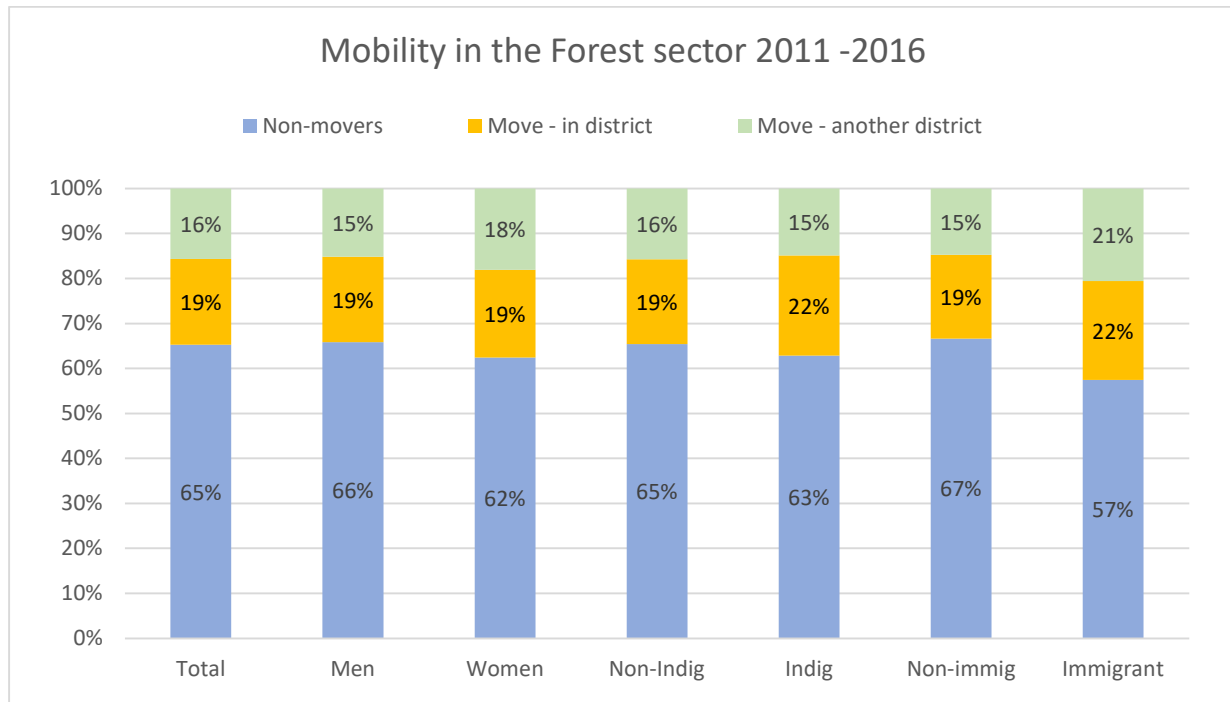
In three sub-sectors non-immigrants are more likely to work full-year, full-time than immigrants. However, Forestry Support Activities sees a higher proportion of immigrants working full-year, full-time than non-immigrants. There is no difference between immigrants and non-immigrants in relation to the proportion of workers in full-year, part-time work.



Indigenous people, like women, are less likely to be working full-year, full-time than are non-Indigenous people for all four sub-sectors. However, there is negligible difference between Indigenous and non-Indigenous people in relation to full-year, part-time work.

## 5.2 Workforce mobility in the forest sector 2011-2016

In 2016, 71 500 people or 35% of the forest sector workforce reported that they had moved (at least once) in the last five years, with 32 300 (16% of the total) stating that they no longer lived in the same census districts. This second number focuses on those who moved to another community and, hence, gives an indication of workers who may have changed their job, their employer, or their place of work. However, as noted above, these data do not indicate why people moved. Reasons why workers move include improving their career or lifestyle or because it was necessary to get or keep a job. Furthermore, the “movers” categories could also include workers who moved from a town to a rural area without changing their work.



Women, Indigenous people and immigrants are all more likely to have moved in the five years before the 2016 Census than men, non-Indigenous people and non-immigrants. This is most marked for immigrants, where 43% of workers (10 500) reported having moved, split fairly evenly between those who moved within a census district and those who moved further afield. Indigenous people were slightly less likely than non-Indigenous people to move to another census district, but more likely to move within their communities. Further research would be needed to determine why workforce mobility differs between these groups.

## 6 Comparing the forest sector to other sectors

Many of the trends described in this report are well-known to analysts, managers and observers and are found in many parts of the Canadian economy. Here we compare the performance of several indicators against the total for all Canadian industries, as well as the broader Agriculture and Manufacturing sectors. As noted previously, the census data do not allow us to draw conclusions about reasons for differences but do show us some gains and some challenges for the forest sector and highlight some differences that require further research.

Inter-sector comparisons are difficult because the nature of work and the activity in each sector can be very different. We therefore compare our sub-sectors against the broader industry group in the NAICS hierarchy. The following table summarises these categories and shows the number of workers that earned income in each of these categories in 2015.

NAICS All Canadian industries 18 499 400 workers					
NAICS 11 Agriculture, Forestry, Fishing, and Hunting 439 655 workers			NAICS 31-33 Manufacturing 1 623 655 workers		
Forestry, Logging and Support Activities 59 575 workers		Other Agriculture, Fishing and Hunting Activities 380 090 workers	NAICS 321 Wood Product Manufacturing 96 415 workers	NAICS 322 Paper Manufacturing 56 650 workers	Other Manufacturing Activities 1 470 590 workers
NAICS 113 Forestry and Logging 43 345 workers	NAICS 1153 Support Activities for Forestry 16 230 workers				

This section presents:

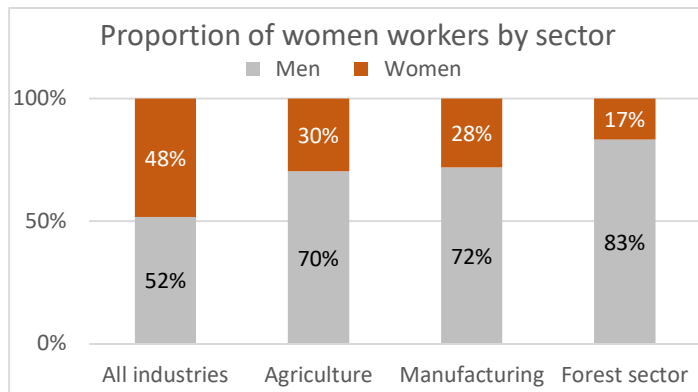
1. The proportions of workers for various groups in each sector in 2015;
2. Median annual employment income for various groups in each sector in 2015;
3. The representation of women at different occupational levels in each sector in 2016; and
4. The proportions of workers in full or partial employment in 2015.

Data availability presented some challenges in this section. In sub-sections 1, 2 and 4, we use data on workers who earned income from each sector in 2015 as this allowed the best comparisons. These values are generally a little higher than the labour force values in 2016 that are used elsewhere in this report. In sub-section 3, we have had to combine data for the four forest sub-sectors, rather than distinguishing between them.

## 6.1 Comparison of proportions of workers in the forest and other sectors

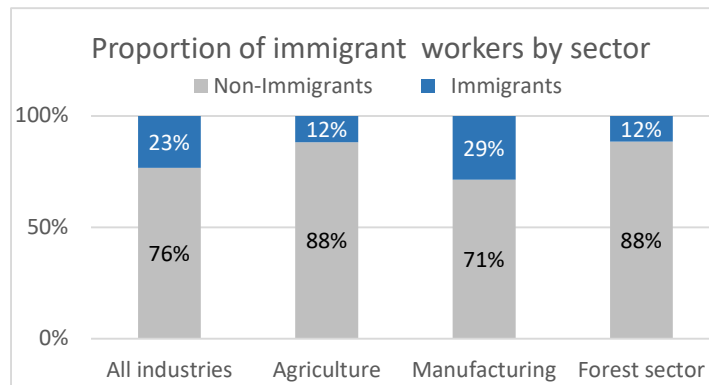
Our Big Picture indicators (section 2) show that women represent 17% of the forest sector labour force, with Indigenous people and immigrants represent 7% and 12% respectively. Here we compare these proportions against those from the Agriculture and Manufacturing sectors, as well as the total for All Industries in Canada.

Nearly 440 000 people work in the Agriculture sector, with Forestry and Logging and Support Activities (113 & 1553) accounting for nearly 60 000 or 14% of these jobs. Manufacturing provides 1.6 million jobs, of which 153 000 or almost 10% are in Wood Products and Paper Manufacturing (321 & 322).

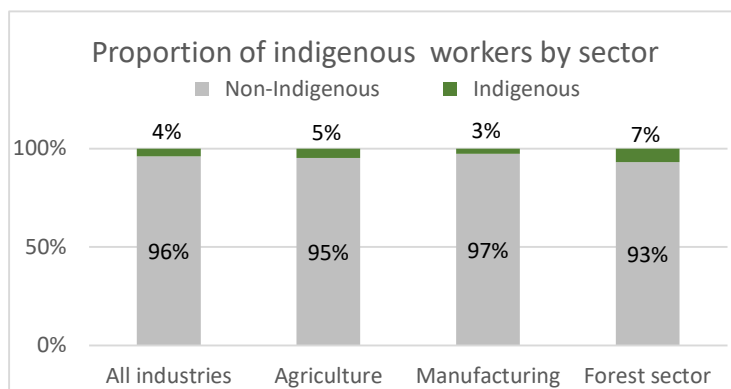


The forest sector has significantly lower proportions of women workers than the Agriculture and Manufacturing sectors, as well as the whole Canadian workforce.

The proportion of immigrants in the forest sector is similar to that for Agriculture, but much lower than the proportions in Manufacturing and in All Industries. Looking more closely, Forestry, Logging and Support Activities (113 & 1153) have only 5% immigrants while Wood Products and Paper Manufacturing (321 & 322) are at 14%.



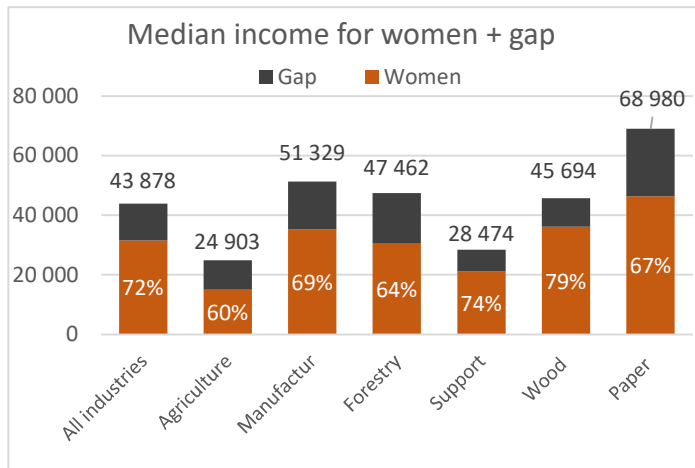
The forest sector compares more favourably with the other sectors for the proportion of Indigenous workers. Indigenous people account for 11% of workers in Forestry Logging and Support Activities, compared to only 5% for the broader Agriculture sector. Indigenous workers account for 5% in Wood Products and Paper Manufacturing, compared to only 3% for other Manufacturing.





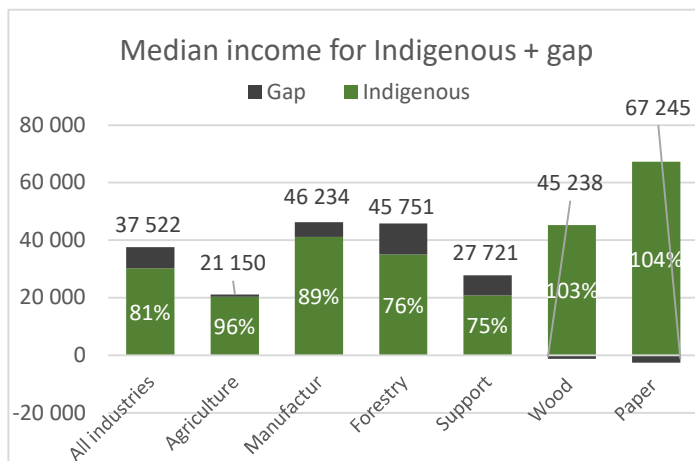
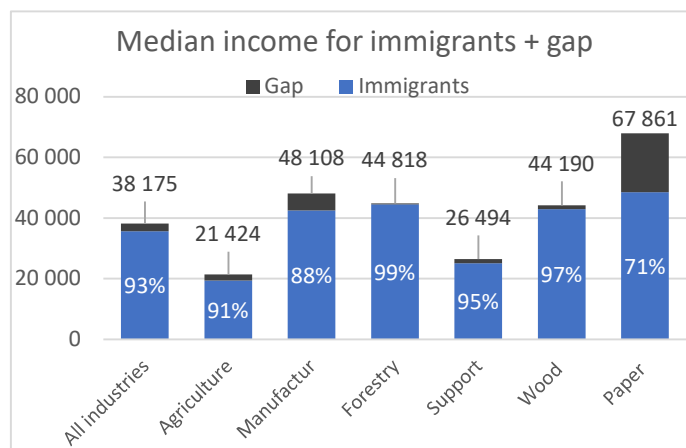
## 6.2 Comparison of median income of workers in the forest and other sectors

Section 4 detailed the existence of a persistent and significant wage gap between men and women in all four forest sub-sectors. Here we compare the extent of this wage gap to the Agriculture, Manufacturing and all sectors for income in 2015. As in section 4.4, we present this as the minority group plus the gap, showing the higher median income and the percentage that the minority group receives.



The gap in median income between women and men is greatest in Forestry and Logging, where women’s median income is much higher than in Agriculture and about \$1 000 less than All Industries. Women in Wood Products have a higher median income and the smallest gap compared to women in Manufacturing or All Industries. In the Paper Manufacturing sub-sector, women earn more than elsewhere but are still at only 67% of men’s earnings.

Overall, the wage gap for immigrants is much less significant than for women. Immigrants in the forest sub-sectors receive a higher proportion of non-immigrant income than in Agriculture, Manufacturing and All Industries – except for Paper Manufacturing, where immigrants are significantly behind all others.



For Indigenous people, the wage gap is quite different. In Wood Products and Paper Manufacturing, Indigenous workers have a higher median income than non-Indigenous workers, compared to only 89% for Manufacturing and 81% for All Industries. In Forestry and Logging and Support Activities, Indigenous people have a median income about 75% of non-Indigenous workers, compared to 96% for the broader Agriculture sector.

### 6.3 Comparison of occupational levels of women in the forest and other sectors

Section 4 also noted that income is related to the roles and responsibilities that different occupations have within a sector, and that women are underrepresented in senior management, technical, supervisors and trades. Here we use the same occupational categories, representing different levels of responsibility, to compare the proportion of women in different roles in the forest sector against All Industries, Agriculture and Manufacturing in 2016.

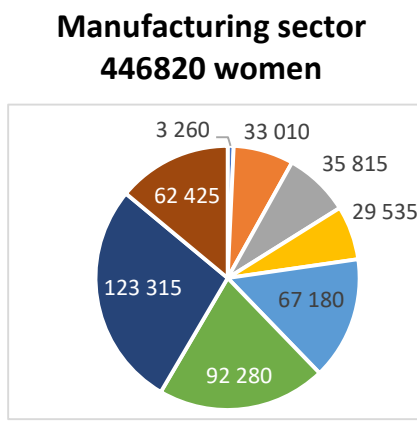
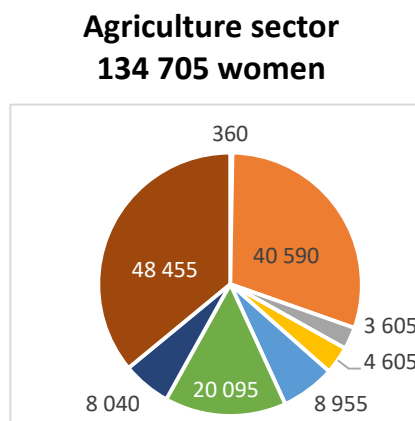
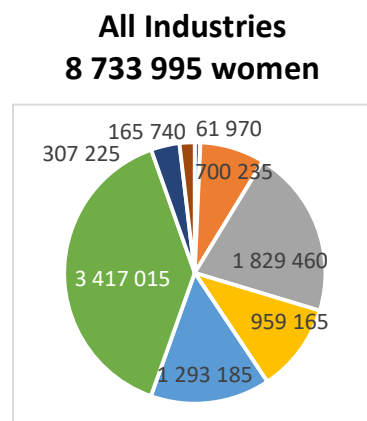
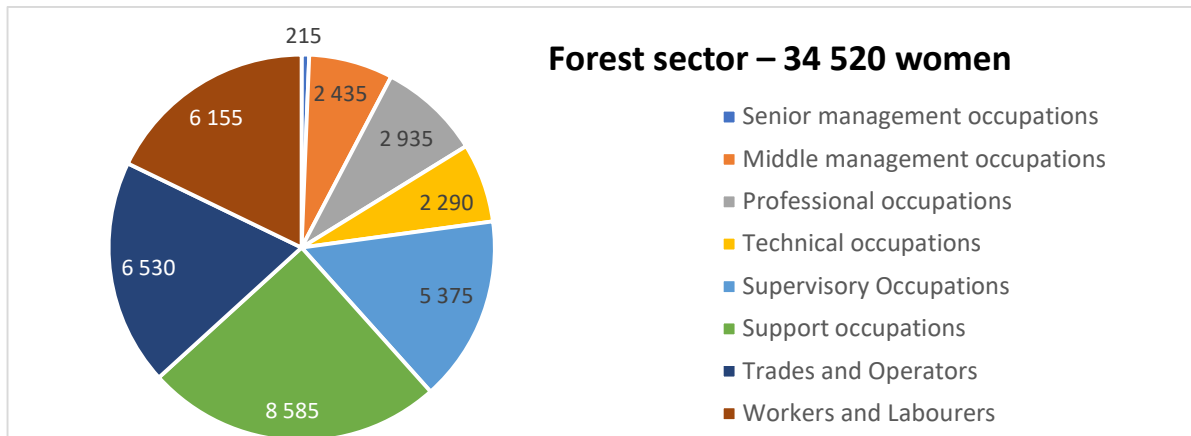
<b>Proportion of women in:</b>	<b>All Industries</b>	<b>Agriculture</b>	<b>Manufacturing</b>	<b>Forest Sector</b>
Senior Management Occupations	27%	13%	15%	10%
Middle Management Occupations	39%	25%	25%	19%
Professional Occupations	55%	39%	30%	33%
Technical occupations	57%	39%	29%	22%
Supervisory Occupations	64%	60%	45%	32%
Support Occupations	64%	67%	50%	49%
Trades and Operators	9%	11%	17%	7%
Workers and Labourers	31%	33%	37%	15%
<b>Total</b>	<b>48%</b>	<b>30%</b>	<b>28%</b>	<b>17%</b>

Women are less represented in all roles in the forest sector than they are in All Industries or Agriculture. When compared to Manufacturing, women are less represented in all roles except for Professional Occupations. However, two important factors need to be considered here.

Firstly, women are significantly under-represented at all levels in the forest sector (17%) when compared to All Industries (48%), Agriculture (30%) and Manufacturing (28%). This suggests that we could expect that women's representation by occupational levels in the forest sector would be around half of the latter two sectors. Instead, women's representation is better than expected for all occupational levels except for Trades and Operators, and Workers and Labourers, which represent two-thirds of all jobs in the forest sector.

Secondly, this analysis does not distinguish between the two forest sub-sectors (113 and 1153) and the two manufacturing sub-sectors (321 and 322). As seen throughout this report, there are often significant differences between the sub-sectors.

The following charts represent the number of women working at each of eight occupational levels as a proportion of the total number of women working in that sector.

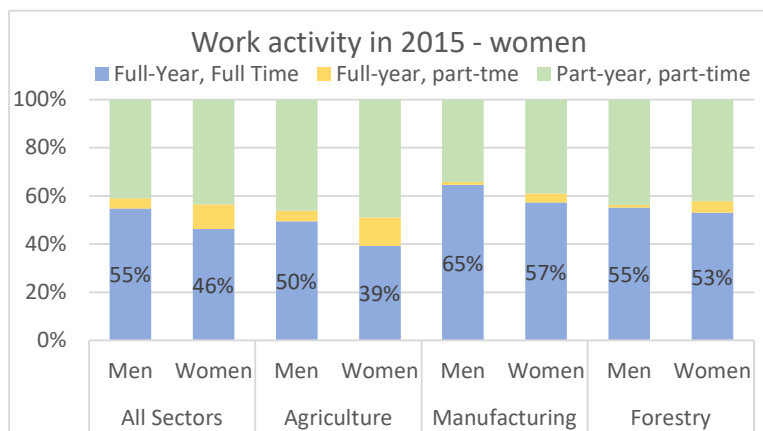


These charts illustrate the predominance of the support occupations category for women across All Industries, accounting for 40% of all women workers. This is very different for the forest, Agriculture and Manufacturing sectors where the proportions of women in support roles are 25%, 15%, and 21% respectively.

These charts also suggest that the forest sector is more aligned with the Manufacturing sector than with the combined Agriculture, Fishing, Forestry and Hunting sector. It appears likely that this is influenced by the weight of the Wood Products and Paper Manufacturing sub-sectors, which accounts for over 60% of the forest sector labour force (140 155 in a total of 205 890). Nevertheless, the Agriculture sector is dominated by large numbers of women in two quite different roles - Middle Management and as Workers and Labourers.

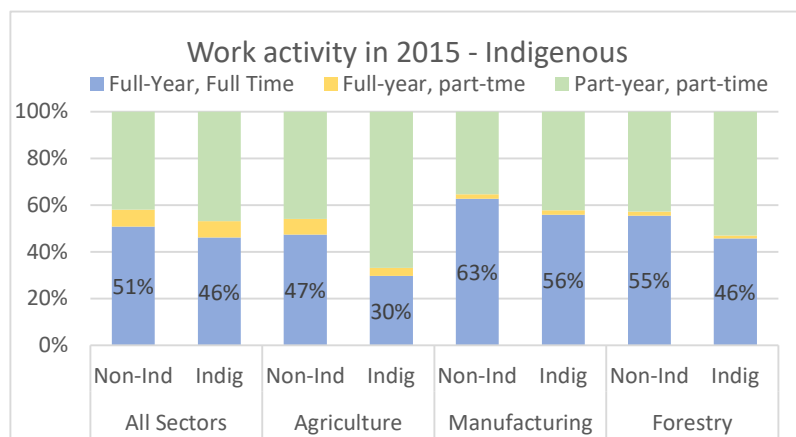
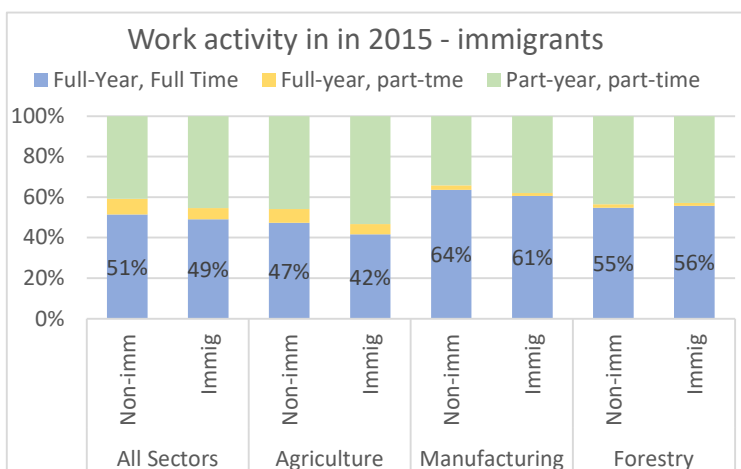
## 6.4 Work activity in the forest and other sectors in 2015

Section 5 considered work activity and mobility and found that women, Indigenous people, and immigrants were all less likely to be engaged in full-time, full-year employment. Here we compare the proportions of workers in full or partial employment in 2015 across All Industries, Agriculture, Manufacturing, and the forest sector.



The forest sector has lower proportions of both men and women in part-time employment than the Agricultural sector, but higher than in Manufacturing. Nevertheless, the difference between men and women's proportions is less in the forest sector than either Agriculture, Manufacturing, or All Sectors.

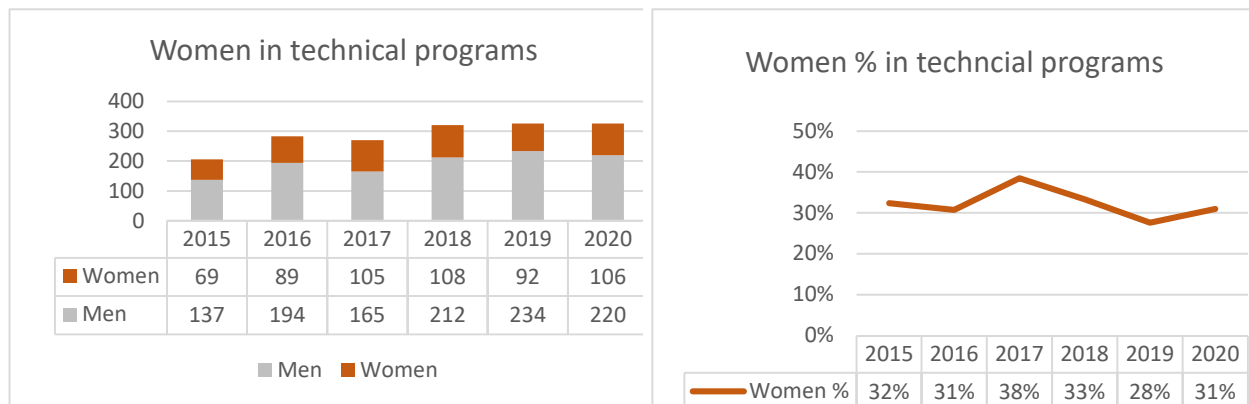
The proportion of immigrants in full-time employment in the forest sector is slightly higher than non-immigrants – a unique situation when compared to the other sectors. Nevertheless, the Manufacturing sector employs a higher proportion of immigrants in full-time, full-year employment than the other sectors.



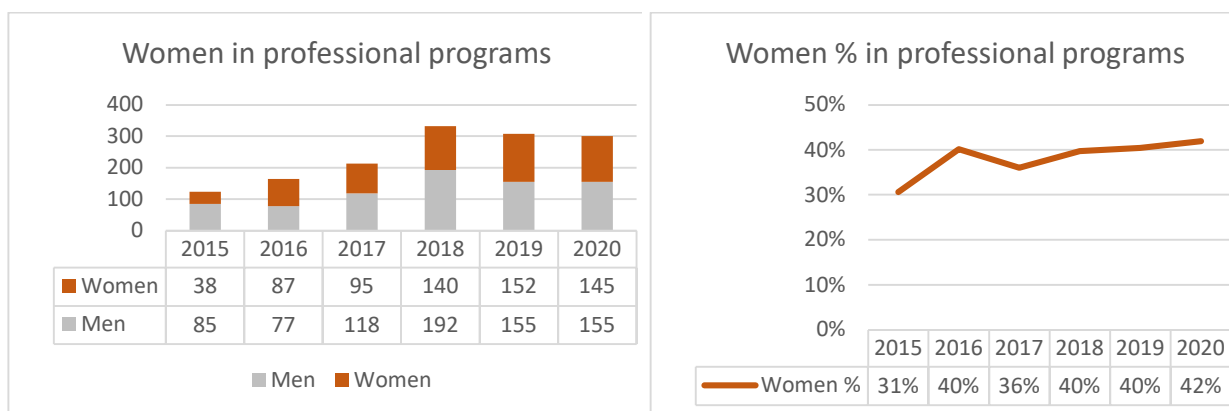
Indigenous workers are more likely to be in part-time employment than non-Indigenous workers in all four comparisons here. The difference between Indigenous and non-Indigenous workers is greatest in Agriculture and least in All Industries.

## 7 Training of forestry professionals

Data from the Silver Ring program offered by the Canadian Institute of Forestry / Institut forestier du Canada allow us to track the number of men and women (but not immigrants or Indigenous people) who have graduated as forestry professionals. This includes professional programs offered by eight universities and technical programs offered by 18 colleges and one university. However, we do not have data for all institutions for all years. Analysis of data between 2015 and 2020 shows that while women remain underrepresented as graduates from technical programs, the proportion of women who graduate from professional forestry programs has shown consistent improvement and is nearing equity.



Women continue to remain underrepresented as graduates from technical programs. Although the number of women who graduated from technical programs saw a steady rise from 69 in 2015 to 106 in 2020, approximately two thirds of all graduates are men. The proportion of women who completed technical programs has remained steady between 31–34%, except in 2017 when the completion rate was 39%.



The number of women graduating from professional forestry programs has significantly improved to near equity levels. In 2015, only 31% of women graduated from professional programs. By 2020, this number had increased to 48%, although the increase has not been consistent. In 2016, more than half (53%) of students who graduated from professional programs were women and in 2019 more women (152) graduated from professional programs than any other year although this declined in 2020 (145).

## 8 Moving forward

### 8.1 Towards a better understanding of diversity challenges in the forest sector

It must be remembered that the statistical data provided in this report describe the state of diversity in Canada's forest sector, but that quantitative data do not provide explanations of why this is so. For example, section 4 demonstrates conclusively that a wage gap exists between men and women, but it cannot be determined if this is due to differences in years of experience, time taken for family responsibilities, willingness to change posts, deliberate discrimination or unconscious bias, personal characteristics such as ambition, or other factors. In fact, it is likely that a complex combination of all these factors, plus others, contribute to the wage gap. Determining actions and strategies with the best chance of success requires a better understanding of why these challenges exist so that actions can be more precisely planned to overcome the barriers. Several different strategies can help to provide this better understanding.

#### ***Detailed studies of employment practices and conditions in specific situations***

Collaborative research by forest sector organizations is needed to collect both quantitative and qualitative information about these organizations and their employees. Quantitative data help answer the 'what' and 'where' questions that help us see what is happening. While we have data about staff numbers, salary, job categories, and responsibility levels, we know little about factors such as years of experience, training and professional development, and satisfaction. Qualitative data help answer 'how' and 'why' questions, enabling us to understand patterns and trends and to decide upon measures and actions to address problems. Such qualitative information could include: career path development; experiences relating to equity, diversity and inclusion; perceptions of other employees and supervisors; and organizational leadership, policies and practices.

Both qualitative and quantitative information will often be sensitive to collect, and confidentiality will need to be assured. Specifically, research frameworks will need to be designed in ways that are: solidly based on knowledge of diversity issues; targeted to priority questions or areas of intervention; flexible enough to be used in differing contexts; able to be combined across organizations; and reliable enough to withstand scientific scrutiny. Finally, undertaking detailed research for all occupations, activities and organizations in Canada's forest sector is impossible and so it will be necessary to target specific groups, organizations, or areas. Collaborating organizations should see such research as an opportunity to develop diversity measures appropriate to their organization's needs.

*We need to identify specific issues, questions and needs for targeted research to understand the extent to which employment practices and conditions shape recruitment, retention, and satisfaction of a diverse workforce.*

*We can use a variety of research tools, including:*

- *Qualitative studies in organizations – policies and programs, individual employment histories, perceptions of conditions, etc.;*
- *Surveys of professional associations – salary, conditions, satisfaction, career progression, roles different levels can play within an organization; and*
- *Surveys of educational institutions – recruitment practices, mentoring and networking opportunities, diversity of graduates, post-graduation employment, selection of research students, etc.,*

***Additional data on Indigenous people, immigrants, and other diversity groups***

Statistics Canada has been providing gender-disaggregated employment data in publicly available tables and reports for several decades. However, it is only more recently that publicly available tables and reports provide equivalent data on immigrants and Indigenous people, although such data may be available through customised data requests. The situation for other diversity groups, such as people with disabilities, is even weaker.

*We need to determine priorities for collecting extra data on Indigenous people, immigrants, and other diversity groups.*

## 8.2 Challenges in monitoring progress

This report on evidence for diversity has relied mainly upon the Canadian census which is administered every five years. These data represent the “gold standard” in reliability, but the data are not always suited to our goals, as shown by the absence of data on Indigenous people and the inconvenience of a five-year census cycle. This report also makes use of data from other sources, which can help respond to certain objectives, but data reliability is not as certain as data from Statistics Canada. Moving forward in monitoring progress on gender and diversity requires that we address several issues.

### ***Identifying appropriate indicators***

The censuses provide accurate information on indicators such as the proportion of Indigenous people in forest sector occupations or the salary gap between men and women, but the interval of five years is too long for effective monitoring. The Labour Force Survey from Statistics Canada provides monthly data on employment and salaries (including gender disaggregation), but the survey does not break this down to the forest sector level. Indicators of change on a quarterly or yearly basis would be useful, but these should be carefully focused to provide the most useful information in a cost-effective way.

*We need to develop reliable sources for more frequent monitoring of selected indicators.*

### ***Evaluating the effectiveness of actions within organizations***

While some strategies to promote diversity will be sector-wide, actions will typically be implemented by individual organizations, especially forest sector companies, each of whom can be expected to have its own organizational culture and priorities. Furthermore, some organizations are more advanced than others and may have a “track record” of success in promoting diversity. The effectiveness of actions will depend not only upon the way in which an organization implements an action plan or strategy, but also upon the starting point of that organization. Hence, determining how effective particular actions may be in promoting diversity will require evaluation and monitoring within each organization. However, it is also important to evaluate effectiveness across a number of organizations and so common measures and indicators will be needed to combine results to provide a broader and more reliable portrait. Case studies to collect qualitative and quantitative information within organizations and surveys of employees within multiple organizations are the most common way of collecting comparable and reliable data.

*We need to develop a framework and tools to collect reliable information within individual organizations and across the forest sector.*



### 8.3 Monitoring the National Action Plan Results Framework

The proposed National Action Plan for Gender Equity includes a results framework with a variety of indicators to enable a comprehensive assessment of gender equity. Reliable data for some of these indicators can be readily obtained, notably through Statistics Canada and the five-yearly census. Obtaining reliable data for other indicators is more difficult and may require the development of new data gathering tools such as surveys or reporting. Any new tools should be carefully designed to ensure that data are complete and reliable.

The following table summarises the results framework, with comments on each of the proposed indicators. The data and evidence provided in this report also provide alternative options for monitoring some of these desired results.

<b>Result 2</b> <b>Canada's forest sector is more inclusive, and gender balanced.</b>	
Percentage of women working in Canada's forest sector	Easy to track with census every five years. More frequent data are not currently available.
Percentage of Indigenous people working in Canada's forest sector	Easy to track with census every five years. More frequent data are not currently available.
Percentage of visible minorities working in Canada's forest sector	Can be tracked with census every five years, but not included in this report. More frequent data are not currently available.
Percentage of immigrants working in Canada's forest sector	Easy to track with census every five years. More frequent data are not currently available.
Percentage of people with disabilities working in Canada's forest sector	Canadian Survey on Disabilities may provide some information linked to sector.
Percentage of youth/young professionals (under 30) working in Canada's forest sector	Unknown at this stage, but possible to track.
Percentage of youth/young professionals currently enrolled in forestry-related programs in Canada	Can be tracked through Assoc of University Forestry Schools of Canada, but these data are not currently disaggregated. Data on technical programs are not currently available.
<b>Result 3</b> <b>The number of women in senior executive roles and technical woodland positions is increasing.</b>	
Percentage of women working in senior executive roles in Canada's forest sector: by total, Indigenous, visible minorities, immigrants, and women with disabilities	Easy to track with census for some categories. More frequent data are not currently available. Possible to track through industry reporting.
Percentage of women working in Forestry and Logging and and Support Activities for Forestry in Canada's forest sector: by total, Indigenous, visible minorities, immigrants and women with disabilities	Easy to track with census for some categories. More frequent data are not currently available. Possible to track through industry reporting.

Percentage of women working in Wood Product Manufacturing positions in Canada's forest sector: by total, Indigenous, visible minorities, immigrants and women with disabilities.	Easy to track with census for some categories. More frequent data are not currently available. Possible to track through industry reporting.
Percentage of women (youth/young professionals) (under 30) working in Canada's forest sector	Can be tracked through census. More frequent data are not currently available.
Percentage of women (youth/young professionals) currently enrolled in forestry-related programs in Canada	See Result 2-7.
<b>Result 4</b>	
<b>Gender equity is contributing to an improved workplace culture in Canada's forest sector.</b>	
Pay-inequity is shrinking between women and men	Easy to track with census every five years. More frequent data are not currently available.
Retention rate of women employees is increasing	Unknown at this stage.
Career advancement (promotion opportunities) /professional development for women vs men are increasing	Possible to track through industry reporting and professional associations surveys.
Workplace harassment and discrimination in all forms are declining	Unknown at this stage.
Absenteeism due to a poor working environment is declining	Unknown at this stage.
Development of gender-balanced human resources (HR) policies and support mechanisms	Unknown at this stage.
Development of gender-based safety protocols	Unknown at this stage.
<b>Result 5</b>	
<b>Gender equity is contributing to increased economic competitiveness in Canada's forest sector.</b>	
Productivity in Canada's forest sector	Easy to track through various indicators from Statistics Canada, including some monthly reports However, gender equity is only one of multiple factors that impact competitiveness and It will be very difficult to isolate the impacts of diversity on these indicators.
Gross Domestic Product (GDP) in Canada's forest sector	
Employment in Canada's forest sector	
Exports from Canada's forest sector	

## Appendix: Definition of terms

**Equity, Diversity and Inclusion** Available at: <https://www.sshrc-crsh.gc.ca/funding-financement/nfrf-fnfr/edi-eng.aspx#2> Accessed April 30, 2021.

**Equity:** The removal of systemic barriers and biases enabling all individuals to have equal opportunity to access and benefit from the program. Equity is different to **equality** which refers to all individuals having access to the same opportunities and resources, without addressing barriers or biases that affect how individuals can access those opportunities.

**Diversity:** Differences in race, colour, place of origin, religion, immigrant and newcomer status, ethnic origin, ability, sex, sexual orientation, gender identity, gender expression and age. A diversity of perspectives and lived experiences is now recognised as contributing to the innovative capacity of an organisation.

**Inclusion:** Practices to ensure that all individuals are valued and respected for their contributions and are equally supported.

**Forest sector:** The forest sector comprises four sub-sectors, identified through the North American Industry Classification System. These are Forestry and Logging (code 113), Support Activities for Forestry (code 1153), Wood Product Manufacturing (code 321, including sawmills, veneer and engineered wood) and Paper Manufacturing (code 322, including pulp and paperboard). Other forest-related activities, such as recreation or non-timber-forest products, are not included in this definition.

**Indigenous Peoples:** A collective name for the original peoples of North America and their descendants. The Government of Canada has also used the term, 'Aboriginal peoples'. The term 'Aboriginal' or 'Indigenous' as used on the Statistics Canada website refers to individuals identifying themselves as 'First Nations people, Métis or Inuit'. Available at: [https://www.statcan.gc.ca/eng/subjects-start/indigenous\\_peoples](https://www.statcan.gc.ca/eng/subjects-start/indigenous_peoples) . Accessed December 20, 2020.

**Indigenous person:** More than one Indigenous person. This is the term most commonly used throughout this report because the report is describing Indigenous individuals (not the collective People) in the labour force.

**Immigrant:** A person who is, or who has ever been, a landed immigrant or permanent resident. Such a person has been granted the right to live in Canada permanently by immigration authorities. Immigrants who have obtained Canadian citizenship by naturalization are included in this group  
<https://www23.statcan.gc.ca/imdb/p3Var.pl?Function=DEC&Id=103339>. Accessed December 20, 2020.

**Recent immigrants:** Persons who obtained a landed immigrant or permanent resident status up to five years prior to a given census year. Available at:

<https://www12.statcan.gc.ca/census-recensement/2016/ref/98-501/98-501-x2016008-eng.cfm> . Accessed December 20, 2020.

**Non-permanent residents:** Non-permanent residents (NPRs) are persons who have been legally granted the right to live in Canada on a temporary basis under the authority of a temporary resident permit, along with members of their family living with them. Available at: <https://www23.statcan.gc.ca/imdb/p3Var.pl?Function=DEC&Id=103339> Accessed December 20, 2020.

**Visible minorities:** The Employment Equity Act defines visible minorities as "persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour". The visible minority population consists mainly of the following groups: South Asian, Chinese, Black, Filipino, Latin American, Arab, Southeast Asian, West Asian, Korean and Japanese. Available at: <https://www23.statcan.gc.ca/imdb/p3Var.pl?Function=DEC&Id=45152> Accessed December 20, 2020.

**People with disabilities:** The Canadian Survey on Disability (CSD) definition of disability includes anyone who reported being "sometimes", "often" or "always" limited in their daily activities due to a long-term condition or health problem, as well as anyone who reported being "rarely" limited if they were also unable to do certain tasks or could only do them with a lot of difficulty. Available at: <https://www23.statcan.gc.ca/imdb/p2SV.pl?Function=getSurvey&SDDS=3251>. Accessed December 21, 2020.

**North American Industry Classification System (NAICS):** The NAICS is an industry classification system developed by the statistical agencies of Canada, Mexico and the United States to provide common definitions of the industrial structure and statistical framework to facilitate the analysis of the three economies. Designed as a hierarchical structure, at the highest level, the NAICS divides the economy into 20 sectors and provides further disaggregation of the different economic activities in which businesses are engaged at lower levels. Thus, the NAICS indicates the type of economic activity with which the job is usually associated. Available at: <https://www23.statcan.gc.ca/imdb/p3VD.pl?Function=getVD&TVD=1181553> Accessed December 20, 2020.

**National Occupational Classification (NOC):** The NOC is a 4-digit coding system developed by Employment and Social Development Canada (ESDC) and Statistics Canada for classifying occupational categories. The NOC is the nationally accepted taxonomy and organizational framework of occupations in the Canadian labour market. It consists of 10 broad occupational categories which are subdivided into major groups, minor groups and unit groups. Available at: <https://www150.statcan.gc.ca/n1/en/catalogue/12-583-X> Accessed December 20, 2020.

## Appendix: NAICS & NOC

### Industry classifications and codes

Industry Groups	NAICS
99 major groups Used up to 2001 census	1997 - 411 categories, 2002 - 433 categories Used from 2001 census onwards
04 - Logging Industry	113 Forestry and Logging
05 - Forestry Services Industry	1153 Support Activities for Forestry (not always included in reports)
25 - Wood industries	321 Wood Product Manufacturing
27 - Paper and Allied Products Industries	322 Paper Manufacturing

### Occupation classification and codes

SOC Standard Occupational Classification 1991	NOC-S National Occupational Classification for Statistics	NOC National Occupational Classification
707 categories Used up to 2001 census, plus some tables for 2006 census	720 categories Used in 2006 census	691 categories Used in 2011, 2016 census
C022 Forestry professionals	C022 Forestry professionals	2122 Forestry professionals
C123 Forestry technologists and technicians	C123 Forestry technologists and technicians	2223 Forestry technologists and technicians
I111 Supervisors, logging and forestry	I111 Supervisors, logging and forestry	8211 Supervisors, logging and forestry
I151 Logging machinery operators	I151 Logging machinery operators	8241 Logging machinery operators
I162 Silviculture and forestry workers	I162 Silviculture and forestry workers	8422 Silviculture and forestry workers
I216 Logging and forestry labourers	I216 Logging and forestry labourers	8616 Logging and forestry labourers
J015 Supervisors, forest products processing	J015 Supervisors, forest products processing	9215 Supervisors, forest products processing
J113 Pulping control operators	J113 Pulping control operators	9235 Pulping, papermaking and coating control operators
J114 Papermaking and coating control operators	J114 Papermaking and coating control operators	
J141 Sawmill machine operators	J141 Sawmill machine operators	9431 Sawmill machine operators
J142 Pulp mill machine operators	J142 Pulp machine operators	9432 Pulp machine operators
J143 Papermaking and finishing machine operators	J143 Papermaking and finishing machine operators	9433 Papermaking and finishing machine operators

J144 Other wood processing machine operators	J144 Other wood processing machine operators	9434 Other wood processing machine operators
J1455 Paper converting machine operators	J1455 Paper converting machine operators	9435 Paper converting machine operators
J146 Lumber graders and other wood processing inspectors and graders	J146 Lumber graders and other wood processing inspectors and graders	9436 Lumber graders and other wood processing inspectors and graders
J193 Woodworking machine operators	J193 Woodworking machine operators	9437 Woodworking machine operators
J223 Other wood products assemblers and inspectors	J223 Other wood products assemblers and inspectors	9533 Other Wood Products Assemblers and Inspectors
J314 Labourers in wood, pulp and paper processing	J314 Labourers in wood, pulp and paper processing	9614 Labourers in wood, pulp and paper processing

### Most common NOCs in the Forest sector

- 9614 Labourers in wood, pulp and paper processing (10%)
- 7452 Material handlers (4%)
- 7311 Construction millwrights and industrial mechanics (4%)
- 8241 Logging machinery operators (4%)
- 9431 Sawmill machine operators (3%)
- 8421 Chain saw and skidder operators (3%)
- 7511 Transport truck drivers (3%)
- 0911 Manufacturing managers (3%)
- 8616 Logging and forestry labourers (3%)
- 9215 Supervisors, forest products processing (3%)
- 9533 Other wood products assemblers and inspectors (2%)
- 8422 Silviculture and forestry workers (2%)
- 7521 Heavy equipment operators (except crane) (2%)
- 9434 Other wood processing machine operators (2%)
- 9435 Paper converting machine operators (2%)
- 8211 Supervisors, logging and forestry (2%)
- 2223 Forestry technologists and technicians (2%)
- 9437 Woodworking machine operators (2%)

### NOCs related to the forestry sector

- 0016 Senior managers - construction, transportation, production and utilities (1%)
- 0811 Managers in natural resources production and fishing (1%)
- 0911 Manufacturing managers (3%)
- 1111 Financial auditors and accountants (1%)
- 1221 Administrative officers (1%)
- 1241 Administrative assistants (1%)
- 1311 Accounting technicians and bookkeepers (1%)

- 1411 General office support workers (1%)
- 1431 Accounting and related clerks (1%)
- 1521 Shippers and receivers (1%)
- 2122 Forestry professionals (1%)
- 2223 Forestry technologists and technicians (2%)
- 6411 Sales and account representatives - wholesale trade (non-technical) (1%)
- 6731 Light duty cleaners (1%)
- 6733 Janitors, caretakers and building superintendents (1%)
- 7237 Welders and related machine operators (1%)
- 7242 Industrial electricians (1%)
- 7271 Carpenters (1%)
- 7311 Construction millwrights and industrial mechanics (4%)
- 7312 Heavy-duty equipment mechanics (1%)
- 7381 Printing press operators (1%)
- 7384 Other trades and related occupations, n.e.c. (1%)
- 7452 Material handlers (4%)
- 7511 Transport truck drivers (3%)
- 7521 Heavy equipment operators (except crane) (2%)
- 7611 Construction trades helpers and labourers (1%)
- 8211 Supervisors, logging and forestry (2%)
- 8241 Logging machinery operators (4%)
- 8421 Chain saw and skidder operators (3%)
- 8422 Silviculture and forestry workers (2%)
- 8612 Landscaping and grounds maintenance labourers (1%)
- 8616 Logging and forestry labourers (3%)
- 9215 Supervisors, forest products processing (3%)
- 9235 Pulping, papermaking and coating control operators (1%)
- 9241 Power engineers and power systems operators (1%)
- 9431 Sawmill machine operators (3%)
- 9432 Pulp mill machine operators (1%)
- 9433 Papermaking and finishing machine operators (1%)
- 9434 Other wood processing machine operators (2%)
- 9435 Paper converting machine operators (2%)
- 9436 Lumber graders and other wood processing inspectors and graders (1%)
- 9437 Woodworking machine operators (2%)
- 9533 Other wood products assemblers and inspectors (2%)
- 9537 Other products assemblers, finishers and inspectors (1%)
- 9614 Labourers in wood, pulp and paper processing (10%)
- 9619 Other labourers in processing, manufacturing and utilities (1%)