Analysis in Brief

Classifying Cannabis in the Canadian Statistical System

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By **Franklin Assoumou-Ndong**

1. Introduction

Cannabis has been used for millennia as fibre, food and drug plant (Clarke & Merlin, 2013). For a very long time, the cannabis plant was illegal to produce and distribute. However, legal access to dried marijuana for medical purposes was first provided in 1999 in Canada, using unique Section 56 exemptions under the Controlled Drugs and Substances Act (CDSA). A court decision in 2000 held that individuals with a medical need had the right to possess marijuana for medical purposes. This led to the implementation of the "Marihuana Medical Access Regulations" (MMAR) in 2001. The MMAR enabled individuals with the authorization of their health care practitioner to access dried marijuana for medical purposes by producing their own marijuana plants, designating someone to produce for them or purchasing Health Canada supply. In June 2013, the Government of Canada implemented the "Marihuana for Medical Purposes Regulations" (MMPR). The MMPR created conditions for a commercial industry responsible for the production and distribution of marijuana for medical purposes. On August 24, 2016, the Access to Cannabis for Medical Purposes Regulations (ACMPR) replaced the Marihuana for Medical Purposes Regulations (MMPR) following a Federal Court of Canada's February 2016 decision (Health Canada, 2016). On April 13, 2017, the Government of Canada tabled legislation to legalize, regulate and restrict access to cannabis for non-medical purposes. After the *Cannabis Act* was approved by Parliament, the drug's new status came into effect in October 17, 2018.

With the new legal regime in effect, Statistics Canada is responding to the legalization of cannabis by measuring various aspects of the introduction of cannabis in the Canadian economy. Some questions needed to be answered. Questions like how much cannabis is being consumed and by how many people? What are the production, price and sales of cannabis and cannabis products? What is the part of cannabis in the gross domestic product estimates? What are the revenues generated by cannabis producers and taxes on cannabis products? How much cannabis is being distributed by wholesalers and retailers? How much cannabis is sold or bought overseas? Are there educational programs for cultivation and production of cannabis? What types of occupations are demanded by the cannabis industry? To be able to compile high quality data to help answer these questions, Statistics Canada needs robust and comprehensive classification systems, which are useful for collecting, compiling, analyzing and disseminating national data, as well as to compare data to international socio-economic data (Statistics Canada, 2017b).

This paper covers the various statistical classifications used by Statistics Canada when measuring socioeconomic activities related to cannabis.

2. Why revise the classifications now for cannabis?

Until the new Canadian *Cannabis Act* came into effect in October 2018, the statistical classification systems used by Statistics Canada generally did not explicitly identify industries and products that include cannabis production and distribution for medical purposes because of their small economic contribution. Also, illegal production and distribution of cannabis are not explicitly included in our North American Classification Systems, even though there has been an illegal market or "economy of cannabis" for quite a long time. For these reasons, classifications could not be used to publish specific data about cannabis for years preceding the expansion of the Canadian cannabis legal framework.

It is common practice with classifications that they are updated and revised as new industries, products, occupations, and educational programs are introduced in the Canadian economy and society. With cannabis, the situation is somewhat unique since the introduction of some of the "new" products, industries, occupations, instructional programs, etc., already existed legally and illegally. In fact, the illegal cannabis market is already substantial (Macdonald & Rotermann. 2017) and well established, and the newness of this industry and these products is merely their legalization of cannabis for non-medical use.

For a purely methodological perspective, Statistics Canada decided not to wait a couple of years to see how the expanded legal market for cannabis unfolds, before defining new classifications. The classification systems will be continuously updated and improved as Statistics Canada obtains more information related to cannabis production, distribution and consumption.

3. What is "cannabis" that we are trying to classify or measure?

It may seem obvious that we know what we are supposed to classify by just saying "cannabis". But it is important to know what is new about the "cannabis" being legalized for uses other than medical (medicinal) in Canada. Even though "cannabis" is most often thought of as a "drug plant", it is a multipurpose plant used for a number of products including fibre, paper, medicine, food, and oil. From a classification perspective, it is important to clarify or define exactly which type of cannabis or part of the cannabis plant is covered by the new Canadian legislation, and which parts are not.

A plant of the genus *Cannabis* refers generally to three varieties, which are *Cannabis Sativa*, *Cannabis Indica* and *Cannabis Ruderalis*. *C. sativa* and *C. indica* are the most commonly used in cannabis varieties or strains for cultivation. The genetics of the different cannabis strains are widely mixed or cloned to create cannabis hybrids. Cannabis contains a number of active elements, including cannabinoids such as *delta-9-tetrahydrocannabinol or THC* (dronabinol, in its synthetic form), *cannabidiol (CBD)*, and *terpenes* (aromatic compounds or chemical markers).

A synthetic cannabinoid which does not exist in nature, is not covered by the definition of cannabis under the proposed *Cannabis Act*; it is covered by the *Controlled Drugs and Substances Act or CDSA* (Health Canada, 2017a).

3.1 Hemp vs Cannabis

"Hemp" or "true hemp" is the word used for industrial hemp, even though it is the same cannabis plant; the difference is the level of THC contained in the plant. Health Canada is responsible for the Industrial Hemp Regulations (IHR) under the *Controlled Drugs and Substances Act* (CDSA), which was amended with the introduction of the new *Cannabis Act*. In the Industrial Hemp Regulations, industrial hemp includes cannabis plants and plant parts of any variety (but mainly *Cannabis Sativa L.*), that contains 0.3% tetrahydrocannabinol (THC) or less in the leaves and flowering tops. Industrial hemp also includes derivatives of industrial hemp plants and plant parts (except flowering parts or leaves) which can contain no more than 10 micrograms of THC per gram or equivalent to 10 parts per million (ppm). Hempseed oil (derived from seed or grain) and hemp flour are examples of industrial hemp derivatives (Health Canada, 2017a; Matt, 2015).

Depending on how the cannabis plant is grown and used will determine which term is correct. In fact, the term cannabis (or marijuana) is used when describing a cannabis plant that is bred for its potent, resinous glands (known as trichomes). These trichomes contain high amounts of tetrahydrocannabinol (THC), the cannabinoid most known for its psychoactive properties. Hemp, on the other hand, is used to describe a cannabis plant that contains only trace amounts of THC. Hemp is a high-growing plant, typically bred for industrial uses such as oils, topical ointments, fibre for clothing and construction, etc. (Table 1).

Although the growth of industrial hemp crops was previously permitted for scientific research purposes, the first licence to grow industrial hemp for commercial purposes was issued in May 1998 by Health Canada. Cannabis is following the same path. Both cannabis and industrial hemp production are activities that are authorized by a licence issued under the law.

Table 1
Cannabis: A plant of many uses, some examples

Use category	Plant parts used	Material type or other benefits
Cordage	Stem or stalk bark	Long cellulose fibers
Cordage and woven textiles, building materials	Stem or stalk fiber	Long cellulose fibers, concrete reinforcement
Paper	Stems/stalk wood and bark	Long and short cellulose fibers
Building materials, animal bedding	Stem/stalk wood without bark	Chip board, concrete matrix
Medicinal	All parts: Primarily female flowers and seeds	Herbal remedies, pharmaceuticals/medicines, nutraceuticals
Recreational drugs	Female flowers and associated resin glands	Marijuana or dried cannabis, hashish (charas)
Human food	Seeds, seed oil	Proteins and essential fatty acids, essential fatty acids (omega-3 and omega-6)
Animal feed	Seeds, seed cake, foliage	Proteins and essential fatty acids, proteins and trace fatty acids, vegetable mass
Industrial feedstock	Seed oil	Oil used in paint and plastic manufacture
Fuel	Stem/stalk wood without bark, seed oil	Heat, light
Ritual and social	All parts: Primarily bark, seeds, and female flowers	Social activities employing various plants parts such as healing and life cycle rituals and inebriation

Source: Clarke C. Robert and Mark D. Merlin, 2013.

3.2 Cannabis for medical use

The consumption of cannabis for authorized medical purposes has grown substantially in recent years. Health Canada first established regulations on access to cannabis for medical or therapeutic purposes in 2001. This regulatory framework has undergone a number of changes since then, most notably in 2014 and 2016.

According to Health Canada's documents, federal licence is required to cultivate, process and sell cannabis for medical or non-medical purposes. Currently there are 185 licensed holders (cultivators, processors and sellers) holding a licence issued by Health Canada under the Cannabis regulations (as of June 26, 2019), the majority (90) in Ontario, followed by British Columbia (40) and Quebec (14). An enterprise can hold multiple licences. The number of licence holders has been growing since the confirmation of the legalization of cannabis for non-medical use. Before the legalization of cannabis for non-medical use, the licensed producers proposed their cannabis products for medical use on web sites and filled "medical orders" by mail. The clients were asked to submit their authorizations to licensed producers by electronic or postal mail. There were no legal retail or wholesale intermediaries for the distribution of cannabis for medical use before the *Cannabis Act* came into effect. Importation and exportation of cannabis for medical purposes are still relatively small and require special circumstances (e.g., research projects) and government permits (Statistics Canada, 2017a).

"Cannabis for medical use" (often called "medical cannabis") should not be confused with "cannabis-based medicines or prescription drugs". Cannabis used for medical purposes refers to a three-step method, as set out in the Access to Cannabis for Medical Purposes Regulations (ACMPR) governed by the Controlled Drugs and Substances Act, which establishes a framework for access to cannabis for medical or therapeutic use. This framework is described in the *Cannabis Act* (Bill C-45). To obtain cannabis for medical use, an individual (registered patient) must accomplish three steps:

1. Get an authorization from a registered health practitioner to buy cannabis for medical purposes;

2. Get an authorization or a licence from Health Canada to buy cannabis for medical purposes;

3. Independently register with a holder of a licence for sale of cannabis for medical purposes, with a medical document and a written order (authorization of a health care professional). The registered patient can do this online, by fax or by regular mail.

Additionally, before selling cannabis for medical use to a patient, the licence holder must validate that the client is registered by Health Canada and is authorized by a health care professional to use cannabis for medical use. When the patient is validated, he or she is ready to place an order by phone, email or online form directly from the licence holder. The order can only be delivered by postal mail to the patient. As of June 26, 2019, based on Health Canada's data, about a dozen licence holders have offered to sell seeds or plants (starting materials) to individuals registered with Health Canada for personal or designated production of cannabis for medical purposes. Adult Canadians can also purchase seeds and plants from authorized provincial and territorial retailers and online platforms.

This definition of "cannabis for medical use" supports the split made in the North American Product Classification System, Canada Version 2.0, between "*cannabis for medical use*" and "*cannabis for non-medical use*".

Cannabis itself, as a plant, has not been authorized as a therapeutic product or a drug in Canada, or in any other country (Health Canada, 2017a). According to Health Canada, therapeutic products refer to a broad range of products, including drugs (pharmaceuticals, radiopharmaceuticals, biologics and genetic therapies), natural health products and medical devices. Products can either be regulated as a drug under the *Food and Drug Act and Regulations* and require a Drug Identification Number (DIN), or as a NHP under the Natural Health Products Regulations and require a Natural Product Number (NPN) (Health Canada, 2006). In fact, it should be noted that "synthetic cannabinoids" which do not exist in nature, are not covered by the definition of cannabis under the proposed *Cannabis Act*. The Act includes "synthetic substances identical to phytocannabinoids produced by, or found in the cannabis plant" such as THC and CBD but does not include other synthetic cannabinoids. There is a prescription health product or pharmaceutical containing synthetic cannabinoid named "Nabilone", which does not exist in nature, therefore is not covered by the *Cannabis Act* (Health Canada, 2017a). The distinction between products being authorized as pharmaceuticals or drugs under the FDA, and those that are not, is used as a way of splitting industries and products in some classifications. In fact, the North American Product Classification System (NAPCS) Canada Version 2.0, for example, includes pharmaceuticals or drugs with a DIN in a separate group or class, compared to products that are not authorized to be treated as such. Hence, in NAPCS Canada Version 2.0, dried cannabis and cannabis oil, for example, are classified under NAPCS group *213-Cannabis products* (output of cannabis industries; see NAICS codes in section 5, Table 2), while a cannabis-based drug like *Nabilone* is classified under NAPCS group *273-Pharmaceutical and medicinal products* (output of the pharmaceutical industry or NAICS 3254).

4. Consultation and research prior to revising NAICS Canada and NAPCS Canada

Before adding new industries (for the North American Industry Classification System or NAICS) and products (for the North American Product Classification System or NAPCS), an extensive consultation process involved the Statistics Canada cannabis working group, Statistics Canada subject matter divisions and staff from the system of macroeconomic accounts, other government departments (Health Canada, in particular), private sector contractors and market participants. In addition, research from numerous Internet sites and direct contacts was undertaken to better understand what cannabis is, how it is grown, processed or manufactured into products, sold and used or consumed (including the accessories and equipment).

Before adding new industries in the North American Industry Classification System (NAICS) and products in the North American Product Classification System (NAPCS), an extensive consultation process involved the Statistics Canada Cannabis Working Group and subject matter areas, other government departments (Health Canada, in particular) and private sector contractors. In addition, research of numerous Internet sites and direct contacts was undertaken to better understand what cannabis is, how it is grown, processed or manufactured into products, sold and used or consumed (including the accessories and equipment).

Research was done to see how cannabis is classified in other countries. It was quickly realized that because Canada will be, after Uruguay, the only country in the world to legalize cannabis entirely for medical and other uses (namely recreational use), no particular classification deals with the cannabis products in such detail needed to cover the whole spectrum of the supply chain. A request for information on classification of cannabis industries and products was directed to Statistics Netherlands and the Office for Medicinal Cannabis (OMC) of the Netherlands, which referred to the *Classification of Products by Activity* (CPA 2008) and the *Statistical*

classification of economic activities in the European Community (NACE Rev. 2); both classifications do not contain specific codes or categories for cannabis products. Those classifications are used by most European countries.

5. Revising the industry classification

The North American Industry Classification System (NAICS) is designed to provide common definitions of the industrial structures of Canada, Mexico and the United States. In this classification, businesses are grouped together based on the kinds of processes they use to make products. The criteria used to group business and government establishments into industries are similarity of input structures, labour skills required and production processes.

To explicitly take account of the expanded legalization of cannabis, new industries were added to NAICS Canada. The economic activities related to cannabis to be classified include agriculture, manufacturing, wholesale trade and retail trade.

In NAICS Canada 2017 Version 2.0, most of the licensed producers growing cannabis for medical purposes are classified to NAICS *111419-Other food crops grown under cover*, reflecting the medical cannabis regulations and types of production processes in place prior to legalization of cannabis for non-medical use, considering there were technically no wholesale and retail industries for medical cannabis.

Upon legalization of cannabis for non-medical use, it is anticipated the growth of businesses in NAICS sectors 11 (for agriculture), 31-33 (manufacturing), 41 (wholesale trade) and 44-45 (retail trade).

Because of the importance of the new legislation and the impact cannabis will have on Canadian economy and society, it was determined that cannabis-based activities demand specialized industries through the creation of new industries, in particular at the national level or 6-digit level of NAICS Canada.

With NAICS Canada 2017 Version 3.0, Statistics Canada has created five (5) cannabis industries that are unique to Canada. These new industries cover the growing of cannabis, manufacture of cannabis products, and wholesale and retail of cannabis products. These industries are shown in Table 2. The full description of the industries or activities related to cannabis in NAICS Canada 2017 Version 3.0 is available online.

Table 2
Classifying cannabis-related activities in NAICS (Canada)

Type of industry	NAICS Canada V3.0 Code and Title
Agriculture industry	111412 Cannabis grown under cover 111995 Cannabis grown in open fields
Manufacturing industry	312310 Cannabis product manufacturing
Wholesale trade industry	413410 Cannabis merchant wholesalers
Retail trade industry	453993 Cannabis stores

6. Revising product classifications

The expanded legalization of cannabis will also have an impact on goods and services related to the cultivation and production of cannabis, wholesale and retail trade of cannabis, and other services. Since the North American Product Classification (NAPCS) Canada is directly linked to the supply and use product classification (SUPC) in the macroeconomic accounts, international trade and price indexes, the impact of any changes to NAPCS Canada on those statistical programs also need to be considered.

Before the legalization of cannabis for non-medical use, NAPCS Canada 2017 Version 1.0 identified the codes of cannabis for medicinal purposes by simply adding examples in the existing classification (e.g., in 1151393-Medicinal plants and 2731111 Medicinal chemicals and vitamins, in bulk):

Under the law in effect before October 17, 2018, cannabis for medical use was delivered to users directly by the same entity which produced it. Therefore, no products were identified for wholesale and retail services in the release of NAPCS Canada 2017 Version 1.0.

6.1 Classifying cannabis products in NAPCS Canada

During the process of revising the Canadian version of the North American Product Classification System (NAPCS), a number of questions needed to be answered while following the classification conceptual framework. Questions like the need for separate groups and classes for cannabis products vs using the existing categories? Can we treat cannabis plants and parts as pharmaceutical products (as discussed in section 3.2)? Is dried cannabis a processed (manufactured) or an agricultural product? Should we classify cannabis activate powder and dried buds in the same category? Should the popular expression "recreational cannabis" be used to name the categories instead of "non-medical cannabis"? What are the detailed levels needed (e.g., the split between cannabis for medical use and cannabis for non-medical use)? Should we create categories for cannabis concentrates and cannabis-infused-edibles at this time? Should the level of THC and CBD be used as a criteria to split categories?

Some products seem obvious to classify when reading their names as listed in Health Canada's documents or the *Cannabis Act*: cannabis plant, fresh cannabis, dried cannabis, and cannabis oil. But, from a statistical classification perspective, these products need to be clearly defined in such a way that NAPCS categories remain mutually exclusive and adhere to the statistical needs of our system of national macroeconomic accounts. If we take the example of "cannabis oil", we needed to know what "oil" is it, and is it legal to be produced and sold it, considering that cannabis products can be made from a wide variety of extracts or concentrates? If the oil is mixed with another non-cannabis substance (e.g., flavour, scents, etc.), should it still be classified in the same category as cannabis oil? For "cannabis plant": is it a live or cut plant? Is it the whole plant or parts of the plant? What are ''flowering and non-flowering materials''? For fresh or dried cannabis: what is it, and what is it made of, whole plant or parts of a plant? Can a whole plant be dried and sold as such? Should we classify further processed dried buds (into powder for example) in the same category as these buds?

We have developed the classification of cannabis products in NAPCS Canada 2017 Version 2.0 taking into account these questions and more. It is anticipated that the cannabis industry will undergo continuous changes in the coming years, including more changes in the legal framework itself, and NAPCS Canada will be able to adapt to these changes. For example, the cannabis industry asked the government to clarify the legislation on how to treat cannabis-infused edibles. An amendment was passed by the House of Commons and cannabis edibles and concentrates were added in the list of legal cannabis products. Legalization of cannabis-infused edibles will introduce a wide range of new goods that could be added as separate categories of NAPCS Canada. The legal framework

Cannabis flower or bud

regarding the production, distribution and sale of cannabis-infused edibles and cannabis extracts or concentrates is expected to be provided by Health Canada for these products to be available for sale starting in October 2019.

Classifying cannabis products is not a straightforward exercise. It has to be done in a way that considers some important information. For instance, the period of legalization needed to be considered: transitioning from prohibition to legalization of cannabis where legalization has two main phases: a) legalization of cannabis for medical use, and b) legalization of cannabis for non-medical use. Many different cannabis strains are collectively called "cannabis for medical use", but the same strains will also be called "cannabis for non-medical or recreational use". There are more than 2,000 known cannabis strains derived from *Sativa*, *Indica* and *Ruderalis* varieties. The number of strains will grow fast with the legalization of cannabis for non-medical use. Since many varieties of the cannabis plants and plant parts (including the derivatives) all share the same name (sativa, indica, hybrid), the terms used to "qualify" cannabis ("medical cannabis or for medical use", "recreational cannabis", etc.) can easily become ambiguous.

The full structure of NAPCS Canada 2017 Version 2.0 containing classification items for cannabis products is now available online. The following summarizes the classification of cannabis products in NAPCS Canada:

- A new NAPCS Canada group (213 Cannabis products) was created with three new classes to represent cannabis products at the production level, including its classes: **21311-Cannabis seeds, vegetative plants and leaves**; **21312-Fresh and dried cannabis flowering tops (including leaves)**; and

21313-Cannabis products (except seeds, plants and plant parts), which include cannabis oil and concentrates, cannabis-infused edibles and other cannabis products. Cannabis products approved by Health Canada under the Food and Drugs Act as "cannabis-based pharmaceuticals, drugs or medicines" - usually containing synthetic *dronabinol* (THC) or *cannabidiol* (CBD) as ingredients – are classified as pharmaceutical products in NAPCS Canada group 273.

Dry cannabis seeds

- Subclasses were added for cannabis concentrates and cannabis-infused edibles since they are now integrated in the new *Cannabis Act*, even though the legal framework related to their production, distribution and sale will be clarified a bit later. The residual subclass (other cannabis products) includes products such as cannabis disposable e-cigarettes, some cannabis accessories, as well as products made from further processing of fresh and dried cannabis flowering tops and leaves (e.g., activate cannabis powder) and cannabis oil (e.g., blended oils and/or cannabis oil containing additives other than carrier oil). It is anticipated that as the cannabis industry will evolve and those cannabis products made from further processed cannabis plant materials, extracts and concentrates, will become significant enough on the market that the classification will need to be updated, for example in order to create new categories of cannabis products.

- New classes are created to cover cannabis products for wholesale and retail trade. These classes are structured in such a way that cannabis products will be separated from existing NAPCS Canada categories. In some cases, existing categories were split in order to isolate the "cannabis" part. This is the case for "cannabis products manufacturing services", "wholesaling trade commissions for cannabis products", and "retail trade commissions for cannabis products". While other services will be affected by the expanded legalization of cannabis, new separate categories were not created for them at this time. Existing NAPCS Canada services' categories were cannabis products could be involved include services such as postal services, local messenger and delivery services, warehousing and storage services, research and development services, testing and laboratory services for cannabis, waste management services for destruction of cannabis residues, prepared meals (restaurants), and public administration services.

- A split between cannabis for medical use and cannabis for non-medical use has been introduced at the lowest level of the product classification. If a survey program cannot use the split for its statistical data collection, it is possible to use a higher level of the classification for data collection and dissemination. The split maintained in NAPCS Canada is consistent with the legal framework for cannabis products. It will also allow to gather data in such a way that can help capture the transition from prohibition to legalization of cannabis for non-medical use and the specialization of some licence holders into the "medical cannabis market". It is also consistent with the existing system, in the *Cannabis Act*, of buying and selling

Cannabis flower or bud in a glass bowl

cannabis for medical use as a separate market under federal control (also see section 3.2) and the need to capture cannabis for medical use that is reimbursed by insurance companies, which makes it a distinct market compared to cannabis for non-medical use. Although there are good reasons to have the split between cannabis for medical use versus for non-medical use in the product classification, it might be difficult to implement such a split all the time; this is an "implementation issue", rather than a "classification issue". It is recognized that the implementation of the split is difficult at the retail level (or the demand side), when a customer goes into a cannabis retail store to buy cannabis for either medical or non-medical use. On the supply side, based on discussions with some licence holders and the requirement from licensed entities to report on the split to Health Canada, it will be possible to report if cannabis was produced and sold for medical use or non-medical use.

- Finally, cannabis products categories included in the *Cannabis Act* were analyzed in order to try to align them to NAPCS Canada categories. A perfect alignment was not possible since NAPCS needs to be

following economic statistical needs, including for our price indexes and national economic accounts statistics were, for example, we need categories distinguishing products in bulk (raw materials) versus prepared for retail, and first stage processing (e.g., dried cannabis buds) versus further processed products (e.g. decarboxylated or activated cannabis powder).

6.2 Price indexes

The Raw Material Price Index (RMPI) and the Industrial Price Index (IPPI) are variants of NAPCS Canada. These variants will be updated to account for cannabis products. As statistical programs have just started collecting price data on cannabis, it is difficult to determine at this time the type of breakdowns needed in the standard classification and/or the variants to meet the needs of the future for price indexes. The current categories added for cannabis products in NAPCS Canada will be sufficient to produce cannabis-related price indexes.

For RMPI, cannabis seeds, vegetative plants and fresh cannabis flowering tops and leafs (including leaf trims and shakes), in bulk, are products in scope, while for IPPI, the rest of cannabis-related goods will be in scope (including dried cannabis flowering tops, cannabis oil and other extracts, cannabis-infused edible products, etc.).

The Farm product price index (FPPI), which will also transition to NAPCS Canada as a variant, expects to include cannabis products in the future.

6.3 International trade

The Harmonized System (HS) is the international classification of goods traded internationally as imports and exports. The following are the most important HS codes related to cannabis.

Canadian Export Classification

0602.90.90 Live plants, nes

1209.99.00 Seeds for sowing, nes

11211.90.10 Cannabis plants (including seeds, and fresh and dried cannabis)

1301.90.10 Cannabis resin

1302.19.10 Cannabis oil and extract

33004.90.10 Cannabis medicaments (including solids and non-solids containing cannabis, and cannabis solid and non-solid concentrates)

Customs Tariff (Imports)

0602.90.90.90 Live plants, nes

1209.99.10.29 Seeds for sowing, nes

1211.90.90.50 Cannabis plants (including seeds, and fresh and dried cannabis)

1301.90.00.10 Cannabis resin

1302.19.00.10 Cannabis oil and extracts

3004.90.00.21 Cannabis medicaments (including solids and non-solids containing cannabis, and cannabis solid and non-solid concentrates).

The *Cannabis Act* authorizes the import or export of cannabis for medical or research purposes (Health Canada, 2017a). Cannabis for use other than medical (except for industrial hemp) cannot be imported or exported legally when national and international laws prohibit such trade.

7. Canadian System of Macroeconomic Accounts

7.1 Goods and services account

The Supply Use Product Classification (SUPC) is used to balance the supply and demand of products in the Canadian economy and is part of the Supply-Use Tables in the Canadian System of Macroeconomic Accounts. The structure of NAPCS Canada is highly integrated with the SUPC. Changes in NAPCS Canada for cannabis products will be reflected in the SUPC, with the creation of new codes to cover cannabis seeds, plants and flowering tops, and other cannabis products. The SUPC is aligned with NAPCS Canada 2017 Version 2.0 by a concordance.

The Input-Output Industry Classification (IOIC) is based on the industrial standard of the day. The IOIC uses a coding scheme that resembles NAICS, but is modified to reflect the hierarchical structure and national accounting concepts. The IOIC will be aligned with NAICS Canada 2017 version 3.0 with the legalization of cannabis for non-medical use, including the creation of new industry codes for cannabis production and sales (licensed and unlicensed).

New codes for cannabis industries and products will be introduced in IOIC and SUPC (System of National Economic Accounts) beginning with reference year 2016, with first release in November 2019.

For the Supply and Use Product Classification (SUPC), the new codes include:

- MPG111C00 Cannabis plants, seeds and flowering tops
- MPG312300 Cannabis products (except plants, seeds and flowering tops)
- MPS453BL0 Retail margins - cannabis products (licensed)
- MPS453BU0 Retail margins - cannabis products (unlicensed).

For the Input-Output Industry Classification (IOIC), the new codes include:

- BS111CL0 Cannabis production (licensed)
- BS111CU0 Cannabis production (unlicensed)
- BS453BL0 Cannabis stores (licensed)
- BS453BU0 Cannabis stores (unlicensed).

7.2 Government services and revenue

The Canadian Classification of Functions of Government (CCOFOG) and the Canadian Government Financial Statistics (CGFS) are used in the Canadian System of Macroeconomic Accounts to release financial statistics of the federal, provincial, territorial, and local governments; Government Business Enterprises; health and education institutions; and the Canada and Quebec pension plans. The legalization of cannabis for non-medical use will have an impact on government revenues and expenditures, and can be represented in classifications such as the CCOFOG and CGFS. The following categories are proposed to be introduced in next revisions:

Canadian Classification of Functions of Government (CCOFOG)

70311 Cannabis-related use of police services

70334 Cannabis-related use of law courts, affairs, and services

70343 Cannabis-related corrections

70735 Cannabis-related use of hospital services

70762 Cannabis-related health prevention programs

Canadian Government Finance Statistics (CGFS)

1142.4 Cannabis taxes

1143.4 Remitted profits from cannabis sales

11452.8 Cannabis licences and permits

7.3 Personal Expenditures

In the Canadian System of Macroeconomic Accounts (CSMA), the classification system used to classify household final consumption expenditures is reflected by the Canadian version of the Classification of Individual Consumption by Purpose (COICOP). COICOP is an international system included in the 2008 SNA as the recommended classification system to use when classifying household expenditures. Based on the COICOP 2018, cannabis is classified as follows:

Division 02 – Alcoholic beverages, tobacco and narcotics

02.3.4.0.0 Narcotics

Includes: Cannabis for non-medicinal use

Excludes: cannabis for medicinal use.

Division 06 – Health

06.1.1 Medicines

Includes: cannabis for medicinal use.

Excludes: cannabis for non-medicinal use.

11.1.1.2 Restaurants, cafés and the like

Includes: cannabis-infused food or drink.

The CSMA there is a classification of household final expenditures (final demand) which is aligned with COICOP by a concordance. The classification of household final consumption expenditure will include new specific codes to cover for household final consumption of cannabis products for non-medical use (licensed and unlicensed), as well as for medical use.

8. Educational programs

In the Canadian statistical system, the Classification of Instructional Programs (CIP) is designed to classify postsecondary instructional programs. CIP is used to classify both administrative and survey data on student enrolment by program, postsecondary graduates by program and by institutional type. A classification variant of the CIP 2016 is proposed for data on cannabis-related instructional programs. *The Variant of CIP 2016 – Cannabis groupings* provides twelve new 6-digit CIP codes for instructional programs directly related to cannabis (see Table 3).

Table 3
Variant of CIP 2016 - Cannabis groupings

CIP 2016	Title
71.010	Cannabis processing and inspection
71.010	Cannabis production operations and management
71.010	Cannabis product development and breeding
71.010	Cooking with cannabis, general
71.011	Cannabis culinary arts/cannabis chef training
71.011	Cannabis health policy analysis
71.011	Cannabis abuse/cannabis addiction counselling
71.011	Cannabis public health, other
71.011	Cannabis health professions and related clinical sciences, other
71.011	Cannabis selling skills and sales operations
71.011	Cannabis marketing and marketing operations
71.020	Cannabis, other

9. Labour market information

The National Occupational Classification (NOC) is used to classify occupations in the Canadian labour market. NOC is used to classify both administrative and survey data on employees, the labour market in general and career paths. Cannabis-related job titles include many generic titles such as 'supply-chain manager', 'production technician' and 'greenhouse worker'. Such titles are already part of the NOC. A review of job titles that are specific to cannabis was part of the update of NOC 2016 version 1.2 in 2018.

These are NOC Unit groups that relate to Cannabis occupations:

0212 Architecture and science managers

0621 Retail and wholesale trade managers

0822 Managers in horticulture

2121 Biologists and related scientists

2211 Chemical technologists and technicians

2225 Landscape and horticulture technicians and specialists

3233 Licensed practical nurses

6421 Retail salespersons

7514 Delivery and courier service drivers

8255 Contractors and supervisors, landscaping, grounds maintenance and horticulture services

8432 Nursery and greenhouse workers

9213 Supervisors, food and beverage processing

9461 Process control and machine operators, food and beverage processing

9617 Labourers in food and beverage processing.

10. Conclusion

When cannabis for use other than medical purpose was officially legalized in Canada on October 17, 2018, Statistics Canada was ready to appropriately classify the various products (goods and services) and activities related to the introduction of cannabis in the Canadian economy and society. Statistics Canada will continue monitoring the evolution of the cannabis industry making sure the classification systems are adapted to future changes. On the international front of statistical classifications, Canada did not have much to borrow from other countries, and will be looked at as a pioneer in classifying cannabis activities and products within the broad-spectrum supply chain.

Normally, Statistics Canada updates its classification systems in an 'as-timely-as-possible', but 'after-the-fact' fashion. We try to observe the emerging on-the-ground marketplace characteristics before classifying the products and industries. In the case of cannabis, there are compelling reasons for us to do things differently by trying to get ahead of the game. We are introducing new classifications for cannabis products for non-medical use now so we can begin producing statistics quickly that will allow Canadians to monitor the transition from illegal to legal non-medical cannabis as it happens. This is to some extent a risky strategy because we are trying to anticipate what a new marketplace will look like before that marketplace actually arrives on the scene. Accordingly, the new classifications must be regarded as "work in progress" and updates and revisions to them must be expected.

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