

At a glance

Bioproducts Development in Canada

an emerging sector to better shape the future

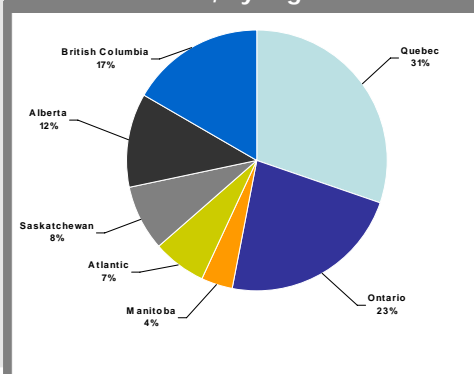
Recent advances in information and communication technology (ICT), biochemistry and engineering are creating a new range of environmentally-friendly replacement products which can be made from agricultural and other renewable feedstock. Referred to as bioproducts, these products are biologically-based commercial or industrial products other than food, feed and medicines made with biological or renewable agricultural (plant or animal), marine or forestry materials. With the ability to grow renewable raw materials and a number of leading-edge science-based companies that are at the forefront of the bio-based economy, Canada is well poised to be competitive in the new bio-based economy of the 21st century.

Development of the emerging bioproducts sector in Canada offers many economic, environmental and social opportunities and benefits. The development of new products from agricultural commodities provides an excellent opportunity for diversification into new markets increasing the demand for raw agricultural products. To better understand the Canadian bioproducts sector and to aid in better policy formation, Agriculture and Agri-Food Canada (AAFC) commissioned Statistics Canada to undertake the first national survey on bioproducts development or production activities. This survey is the first conducted by a national statistical agency in any of the member countries of the Organisation for Economic Co-operation and Development (OECD) countries.

Characteristics of firms

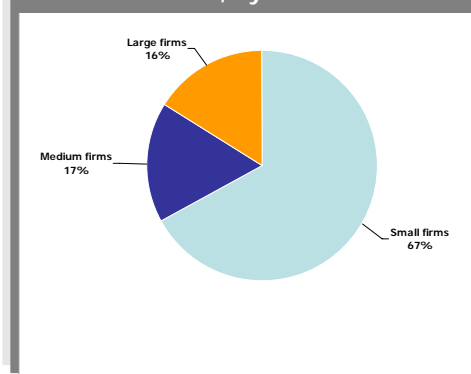
Based on data from the Bioproducts Development Survey, there were an estimated 232 Canadian-based firms involved in the development or the production of bioproducts in 2003. The sector is mostly made up of young (65% involved less than 10 years) and small firms (less than 50 employees) and nearly 30% of all the firms were publicly traded. Four provinces, Québec, Ontario, British Columbia and Alberta, were home to nearly 82% of firms with Québec being the leader with 31% of all the firms.

Figure 1: Distribution of bioproduct firms in Canada, by region



Source: Statistics Canada Bioproducts Development Survey

Figure 2: Number of bioproduct firms in Canada, by size



Source: Statistics Canada Bioproducts Development Survey



Agriculture and
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Bioproducts development or production

Over 1,000 bioproducts were being made or developed in Canada in 2003; 632 bioproducts were at the production or market stage, implying that they were bringing in some revenues or were about to enter the market. Bio-chemicals was by far the largest category of bioproducts being developed and produced, both in terms of the number of firms involved (77) and the number of products (432). Bio-fuels/bio-energy was ranked second with 201 products in development or in the market. Agricultural crop and forestry biomass were the top two biomass types used by Canadian firms. They were used by 93 and 77 firms respectively, more than twice the number of firms using any other single type of biomass. Almost half of firms used by-products as biomass input and most of the remaining firms used primary products. Bioproducts produced in Canada, in 2003, were used internally, sold directly to consumers and distributors or were used as inputs by other firms.

Findings on bioproducts development sector

One of the key findings from this survey is that bioproducts are just one part of a firm's business activities in Canada and the proportion of activities related to bioproducts decreases with firm size. For all firms, approximately one-third of total firm employees were involved in bioproducts-related activities and just over one-quarter of total firms revenues were derived from bioproducts-related activities. Approximately 40% of total research and development (R&D) expenditures were spent on bioproducts of which 11% were contracted out. In general, Canadian firms were not very involved in bioproducts-related collaborative arrangements.

More than half of firms attempted to raise capital from various sources in 2003. Of the firms attempting to raise capital, 77% were successful with R&D cited most often as the purpose. Government sources were the most common source of capital, followed by angel investors/family and Canadian-based venture capital. However, only 47% of all the firms used the Scientific Research and Experimental Development (SR&ED) tax program. Canadian firms still ranked the lack of financial capital as the most important constraint to developing and producing bioproducts, followed by the high cost and timeliness of regulatory approval.

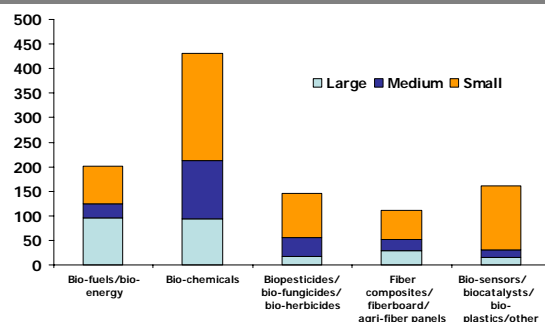
In terms of benefits from bioproducts development and production, increased sales/market share and development of new market niches/new products were ranked as the top two benefits for all bioproduct firms surveyed.

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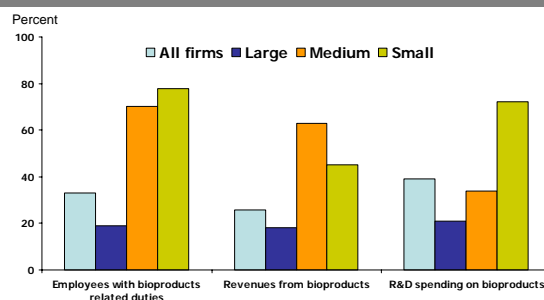
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Figure 3: Number of bioproducts under development, by type and firm size



Source: Statistics Canada Bioproducts Development Survey

Figure 4: Percentage of revenue, R&D spending and labour devoted to bioproducts activities, by firm size, 2003



Source: Statistics Canada Bioproducts Development Survey