

Section 1 - Research and development expenditures, 2004

1. For year 2004, did you have research and development (R&D) expenditures directed towards developing countries?

- 001 3 No → Please go to question 5
 1 Yes
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2. For year 2004, please indicate total research and development (R&D) expenditures performed in Canada by your enterprise. (in thousands of Cdn \$)

002 \$,000

3. A) For year 2004, please report total research and development (R&D) expenditures directed towards developing countries. (in thousands of Cdn \$)

003 \$,000

B) Please, distribute the amounts from question 3A according to the following selected objectives listed. (in thousands of Cdn \$)

	Research and development (R&D)
004 Health sciences (HIV/Aids, medicine, detection of disease, vaccination, etc.)	\$ <input type="text"/> ,000
005 Science and technology of food production (Food processing, food safety, etc.)	\$ <input type="text"/> ,000
006 Agricultural science and technology (Fertilizers, silviculture, forestry, chemical pesticides, research activities on the promotion of production and improvement of agriculture, water, soil, plants, animals, mechanization of agriculture, etc.)	\$ <input type="text"/> ,000
007 Biotechnologies and bioproducts (DNA Genomics, genetics, cellular culture, bioprocess and industrial nanotechnology, biopesticides, biomass, biofiltration, bioremediation, etc.)	\$ <input type="text"/> ,000
008 Environmental science and technology (Systems into the control of pollution in water, air and soil, elimination and treatment of wastes, collector, purifying, filter, etc.)	\$ <input type="text"/> ,000
009 Energy science and technology (Renewable resources, solar, photovoltaic, geo thermal, wind energy, nuclear, CO ₂ capture and storage, etc.)	\$ <input type="text"/> ,000
010 Information technology and communications (Telecommunication, software, Internet, networking and communication material, etc.)	\$ <input type="text"/> ,000
011 Advanced materials (Superalloys, purified metals, polymers, optical fibres, graphite and carbon products, etc.)	\$ <input type="text"/> ,000
012 Other (specify): <input type="text"/>	\$ <input type="text"/> ,000
013 Total (total reported in question 3A)	\$ <input type="text"/> ,000

4. For year 2004, please indicate which countries your research and development expenditures were directed towards. (check all applicable responses)

- 014 China 1 Yes 3 No
 015 India 1 Yes 3 No
 016 Mexico 1 Yes 3 No
 017 Brazil 1 Yes 3 No
 018 South Africa 1 Yes 3 No

Section 2 - Exportation

5. For year 2004, did your enterprise export goods or services?

019 ³ No → Please go to section 3

1 Yes



6. For year 2004, please indicate the total of your revenues that came from the export of goods and services.

(in thousands of Cdn \$)

020 \$,000

If you indicated "No" at question 1 (page 2), please go to section 4, thank you.

7. For year 2004, please indicate in percentage the portion of your exports of goods and services directed to developing countries.

021 %

Section 3 - Cooperative arrangements with foreign partners

Cooperative arrangements in research and development involve the active participation in projects between your enterprise and other enterprises or organizations in order to develop or continue work on new or significantly improved goods and services, processes or products, related to research and development. Pure contracting-out work is not regarded as cooperative.

8. For year 2004, did your enterprise participate in one or more cooperative arrangements with a developing country related to research and development (R&D)?

022 ³ No → Please go to section 4, thank you for your assistance

1 Yes



9. Please indicate the total number of research and development (R & D) collaborative projects engaged with your enterprise and a developing country by type of partner.

(check all applicable responses)

		Type of partner (Please check) 1	Number of projects 2
023	Foreign universities	<input type="radio"/> →	<input type="text"/>
024	Foreign research institutes or associations	<input type="radio"/> →	<input type="text"/>
025	Foreign hospitals	<input type="radio"/> →	<input type="text"/>
026	Foreign enterprises	<input type="radio"/> →	<input type="text"/>
027	Other foreign government or department	<input type="radio"/> →	<input type="text"/>
028	Other (please specify): <input type="text"/>	<input type="radio"/> →	<input type="text"/>
029	Total	<input type="radio"/> →	<input type="text"/>

Section 4 - Survey completion time

Approximately, how much time did you spend completing this questionnaire?

030 Minutes →

Section 5 - Comments and suggestions

We invite your comments or suggestions to help us to improve this questionnaire or any other topics related to this survey.

Instructions

General:

This questionnaire measures Canada's contribution to investment in research and development (R&D) for developing countries. It is important to note that the focus of this survey is direct investment in R&D. In particular, we are interested in enterprises whose R&D is intended for developing countries. Exports of goods or services with R&D content to developing countries are not considered direct investment.

Interpretation of industrial research and development (R&D)

Research and experimental development (R&D) comprise creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications. (Frascati Manual 2002, OECD)

Generally speaking, industrial R&D is intended to result in an invention which may subsequently become a technological innovation. An essential requirement is that the outcome of the work is uncertain, i.e., that the possibility of obtaining a given technical objective cannot be known in advance on the basis of current knowledge or experience. Hence much of the work done by scientists and engineers is not R&D, since they are primarily engaged in "routine" production, engineering, quality control or testing. Although they apply scientific or engineering principles their work is not directed towards the discovery of new knowledge or development of new products and processes. However, work elements which are not considered R&D by themselves but which directly support R&D projects, should be included with R&D in these cases. Examples of such work elements are design and engineering, shop work, computer programming, and secretarial work.

If the primary objective is to make further technical improvements to the product or process, then the work comes within the definition of R&D. If however, the product, process or approach is substantially set and the primary objective is to develop markets, to do pre-production planning or to get a production, or control system working smoothly, then the activity can no longer be considered as part of R&D even though it could be regarded as an important part of the total innovation process. Thus, the design, construction and testing of prototypes, models and pilot plants are part of R&D. But when necessary modifications have been made and testing has been satisfactorily completed, the boundary of R&D has been reached. Hence, the costs of tooling (design and try-out), construction drawings and manufacturing blueprints, and production start-up are not included in development costs.

Interpretation of developing countries

The term "developing countries" should be interpreted broadly to include less fortunate countries and exclude developed countries.

In this questionnaire, we have intentionally chosen not to provide a list of all developing countries. The expression "developing country" is only one term among others to designate the same type of problem. The way of designating these countries changes, depending on the angle from which they are approached and the solutions envisioned for solving their problems.

We therefore leave it up to respondents to judge which countries they consider to be developing countries, since even the official United Nations definition is constantly changing. However, the following are a few concepts that might help respondents to make their own judgement:

To say that a country is developed means that it has gone beyond a critical threshold and can compare its growth stage with that of other countries. The term development, in the present case, is often taken as shorthand for economic development, but also has to do with human development, which covers other parameters considered beneficial to society (education, health, life expectancy, etc.).

A country's development is measured using statistical indicators such as per capita income, the illiteracy rate and access to water. Accordingly, the UN makes a ranking of countries based on an indicator called the "human development index" (HDI). The following are a few examples of rankings according to the human development index:

Examples of medium human development countries ($0.8 > \text{HDI} > 0.5$): Mexico, Thailand, Brazil, China, Lebanon, Turkey, India...

Examples of low human development countries ($0.5 > \text{HDI}$): Haiti, Laos, Senegal, Niger, Pakistan, Yemen...

Please return this questionnaire in the accompanying prepaid return envelope within 20 days of receipt.