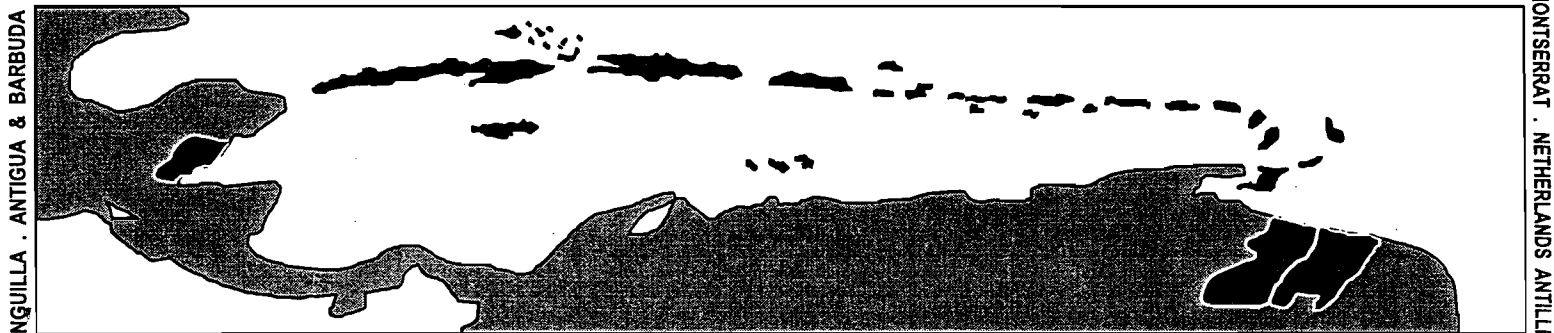




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PUERTO RICO . SAINT KITTS & NEVIS . SAINT LUCIA . SAINT VINCENT & THE GRENADINES . SURINAME . TRINIDAD & TOBAGO . U.S. VIRGIN ISLANDS .

Workshop on the development of
Indicators of Science & Technology
For the Caribbean
15-16 March 2001
Port of Spain, Trinidad and Tobago

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**REPORT OF THE
WORKSHOP ON THE DEVELOPMENT OF INDICATORS OF SCIENCE AND
TECHNOLOGY FOR THE CARIBBEAN**



UNITED NATIONS
ECONOMIC COMMISSION FOR LATIN AMERICA AND THE CARIBBEAN
Subregional Headquarters for the Caribbean

CARIBBEAN DEVELOPMENT AND COOPERATION COMMITTEE



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*Port of Spain, Trinidad and Tobago,
15 – 16 March 2001*

Introduction

In late 1999, meetings were held in Port of Spain, Trinidad and Tobago, and Santo Domingo, Dominican Republic, to agree on those indicators of science and technology that would be of importance to very small States. This was in the context of participation in the regional programme managed by the Iberoamerican Network on Science and Technology Indicators (RICYT). Since it had been agreed that indicators identified for large States would be of little value to very small States and that the present literature focused primarily on large States and their activities, the meetings were conducted to develop a set of indicators and a preliminary questionnaire for consideration and discussion. Representatives from Barbados, Guyana, Jamaica, Saint Lucia, and Trinidad and Tobago participated in the meeting in May 2000 to develop the indicators and prepare the questionnaire. Between July and October 2000 a pilot programme was conducted where officers from the five Caribbean countries embarked on a data collection exercise. In November 2000 a meeting was held in Grenada to discuss the data collection efforts in the five pilot programme countries, as well as possible strategies for promoting the programme in other Caribbean countries. Based on the outcome of the November meeting, and the results of the data collection exercise from the countries that participated in the pilot project, it was determined that the programme could begin in the other Caribbean countries. It was also decided that training would be provided to other Caribbean countries in the development of the programme at the national level.

Representatives from eight Caribbean countries were invited to participate in the two-day workshop. However, participants came from five countries - Antigua and Barbuda, the Bahamas, Dominica, Grenada and Saint Vincent and the Grenadines. The workshop agenda (Annex I) and a list of participants are attached. (Annex II).

Objectives

The specific objectives of the workshop were as follows:

- (a) To promote the collection and use of indicators of science and technology in the Caribbean.
- (b) To use the data for the development and promotion of innovation, policy and implementation of programmes.
- (c) To develop a strategy to ensure consistency in the collection and interpretation of science and technology indicators for the Caribbean subregion.

(d) To provide an opportunity for participants to become fully knowledgeable with all aspects of the Canberra manual from which the indicators on human resources were selected.

(e) To provide an opportunity for participants to answer and explain any queries which may arise in the exercise of data collection.

Opening remarks

The representative of the Economic Commission for Latin America and the Caribbean/Caribbean Development and Cooperation Committee (ECLAC/CDCC) secretariat welcomed participants on behalf of the Director. In his opening remarks, he expressed confidence that by the end of the workshop the persons present would be qualified to implement the indicators programme, including the data collection exercise in their respective countries.

Role of indicators in development and recent initiatives in Latin America and the Caribbean – ECLAC/CDCC secretariat

With regard to the regional programme on indicators, the ECLAC/CDCC secretariat advised participants that the indicators programme went beyond that of collection of data for use in comparative exercises. The data collected must also be used to determine the policies that were needed for development. He added that implementation of policy was not possible without sound data and analysis of that data. The indicators programme was therefore aimed at determining the status in the Caribbean at present, whereby information might be made available to address areas that required specific attention. Because of limited resources, both financial and human, prioritization in the implementation of programmes could also be determined. He offered the opinion that had any serious analytical work been done before the banana diversification programme was undertaken in the subregion, the outcome might have been different and might have made a more significant impact on the agricultural industry. He observed that early attempts at policy implementation were not necessarily based on analysis of data but more on the perception of the technocrats. He also noted that produce chemist laboratories were established in most Eastern Caribbean countries in the late 1970s/early 1980s with no serious thought as to the purpose and needs of the laboratories. As a result, with the exception of those in Antigua and Barbuda and Grenada, produce chemist laboratories were no longer functional. Because of limited financial resources, the Caribbean could no longer afford to derive and implement policy without careful analysis. Another example of determining policy direction without proper analysis was the current situation facing the subregion with regards to the marginalisation of the young adult male population. The secretariat suggested that these problems might have arisen as a result of the establishment of export processing zones in most countries, and noted that many of the enterprises established (small electronics assembly, for example) were more suited to young women and since at that time no concurrent training programmes were established for young men, this could be a possible cause of the present situation. The above examples highlighted the urgent need for readily available and reliable data upon which informed decisions might be based. However, given the financial and institutional constraints, the secretariat indicated that a first priority would be the collection of data on human resources in science and technology.

In closing this session, the secretariat noted that by the end of the workshop the persons present would be in a position to take the programme to their respective countries, and informed the workshop that each country would receive US \$1000 to assist in the data collection exercise. It was hoped that data from 14 Caribbean countries would be available by November 2001. The data would be compiled for the publication of a comprehensive document on indicators of science and technology in the region in 2002. This publication would be the first of a series of annual publications and it was expected that data collected would be used in policy-making decisions and in the implementation process.

Report on May 2000 workshop on indicators of science and technology and innovation – NIHERST

The representative of NIHERST reported that the main purpose of the workshop held in May 2000 was to develop a questionnaire that could be used to collect relevant data on science and technology in the region. The questionnaire was subsequently used to collect data in five countries, Barbados, Guyana, Jamaica, Saint Lucia, and Trinidad and Tobago. She emphasized the importance of the data collection efforts and the potential use of the data. The ECLAC/CDCC secretariat also cited the situation that presently existed in Vancouver, British Columbia, Canada, where 500,000 copies of a manual on the data collected were published annually. The demand for the manual was quite high and not limited to policy makers and government, but was also sought by the private sector. For ministers of government, the data are used to gain support for policies that have been put into place. Indicators were used as instruments of accountability, to determine allocation of resources and as tools for evaluation. Indicators were also used to give some insight or draw attention to development trends, which could also help to inform policy. Indicators therefore, were very useful and could serve several purposes. It was important, however, to understand that they should be used and not simply collected and published.

With regard to the questionnaire that was developed for use in the Caribbean, participants were advised that it should be adapted to suit the situation in each country. It would be necessary, however, to remember that definitions and concepts would have to remain the same, if only for the purposes of comparison.

Country reports

Country representatives were of the view that there were agencies within their countries with the capability to collect the data and each person noted that they would more than likely have lead responsibility for the programme. It was also noted that science and technology councils were to be established very shortly in Antigua and Barbuda and Dominica. The establishment of those councils would assist in the conduct of the programmes in those two countries. The representative from Bahamas stated that one of the mandates of the research unit of the College of the Bahamas was to conduct surveys in various areas. She noted that the indicators programme would therefore be given some measure of priority since it fell within the mandate of the college.

Discussion on the elements of the questionnaire – NIHERST

NIHERST explained in some detail all elements of the questionnaire. Participants were informed that while the questionnaire could be adapted to suit their country situation, elements and definitions had to remain the same. It was also pointed out that the companies and/or institutions to which the questionnaire was forwarded might differ from country to country. It was noted that in Trinidad and Tobago, for example, there was a predominance of manufacturers, therefore the questionnaire was forwarded to companies representing key manufacturing industries. One of the purposes of the data collection exercise was to give persons doing the survey an opportunity to report on the data collection exercise. That would serve to streamline the process, since in the future, it was to be an ongoing one. The ECLAC/CDCC secretariat observed that it was important to pay close attention to the questionnaires, especially in the interpretation of the questions and therefore definitions and concepts. This was especially important when comparisons were to be done. NIHERST stated that while an attempt had been made to derive a common questionnaire, the data collection process in all the countries was very important. Once data from all the countries were collected there would be analysis and tabulation. The definitions and concepts were all standard and taken from the Canberra and Frascati manuals, the definitive documents for indicators of science and technology all over the world.

The following elements of the questionnaire were discussed:

Page 1 - Identification

- (i) The name of questionnaire – this may be changed
- (ii) The name of the contact person may not be necessary, especially if it is not the same as the one completing the questionnaire. In the public service, however, the contact person may have to be included even if he or she is different from the person completing the questionnaire.
- (iii) Major activities of the organization – guidelines may be necessary and organizations should identify the product manufactured or service provided.

Question 1

- (i) With regard to whether the company is engaged in scientific activities, it was found that respondents were not always clear on this. It was therefore important that the person responsible for data collection be fully knowledgeable on all aspects of the questionnaire, concepts and definitions. Concerning the definition of scientific activities, the traditional approach was to leave out information relating to the social sciences although the new approach includes this sector, with definitions in both the Canberra and Frascati manuals. In the case of the university all departments are surveyed. Some examples of non-science and technology institutions were educational institutions at the primary and secondary levels. It was observed that some organizations had the capability to undertake research, but did not have the capacity.

Question 2

- (i) Human resources – a reference period was necessary and should be standard.
- (ii) Classification of personnel – focus should be on the activities and job description and not the job title.

Question 3

Expenditure – The module is divided into expenditure on research and development (R&D) and scientific and technological services (STS). For higher institutions of learning, scientific and technological education and training (STET) had to be included. The sum of S&T plus STET will give total expenditure on science and technology activities.

Other

Participants were reminded that there were four main elements of research and development activity, specifically creativity, novelty, innovation and scientific methods that should all result in new knowledge. The question of individuals conducting their own research and innovation outside of an organization or institution was raised. NIHERST noted that while those could not be captured in the present format of the questionnaire, it could be considered in the future. It was observed, however, that while there were such persons, research and development tended to be an expensive process that required significant capital resources and it was hardly likely that an individual would have those resources at his or her disposal.

Confidentiality with regard to the information captured was a primary requisite and had to be stressed to respondents.

Data collection

With regard to the actual data collection, participants were reminded that some funding would be available for the pilot phase from RICYT, while the European Union could be a possible source of funds for the ongoing exercise. The sample size and focus of the questionnaire would depend on the country. The ECLAC/CDCC secretariat noted that possible sources of information in the Eastern Caribbean countries would be the National Development Foundations (NDFs), the National Development Corporations (NDCs) and the Small Enterprise Development Units (SEDUs). It was suggested that data collection should commence no later than 1 July 2001 in order to facilitate the publication of data from all countries before the end of 2001. The exercise should be completed within three months after which a follow-up meeting would be held with all participating countries.

Closing session

Before the workshop was closed the representative of NIHERST informed participants that there was funding available for a regional project in science and technology and asked for some suggestions as to the type of project that might be considered. Some suggestions included a programme for poverty alleviation, improved institutional capacity in the management of science and technology in the Caribbean and a community development project.

In closing the workshop, the ECLAC/CDCC secretariat thanked participants for their positive contributions and expressed confidence in the participants' abilities to commence the programme in their respective countries in a timely manner. Special thanks were reserved for the NIHERST representatives for taking their time to assist in facilitating the present and other workshops on indicators of science and technology.

Annex I**AGENDA**

Thursday 15 March 2001 Day 1	Friday 16 March 2001 Day 2
<p>9:00 – 9:10 Remarks Ms Len Ishmael Director, ECLAC/CDCC secretariat</p> <p>9:10 – 10:10 Role of Indicators in development And recent initiatives in the Latin America And the Caribbean Mr. Donatus St. Aimee Economic Affairs Officer, ECLAC/CDCC</p> <p>10:10 – 10:20 Report on Workshop on S&T Indicators May 2000 Ms. Elizabeth Lloyd</p> <p>10:20 – 10:30 - Coffee Break</p> <p>10:30 – 11:00 Report on data collection and statistical Capabilities in each country Antigua & Barbuda – Mr. Franck Jacobs Bahamas – Ms. Denise Samuels Dominica – Ms. Vanya Jones Grenada – Mr. Osmore Gall St. Vincent & the Grenadines – Ms. N. Bonadie</p> <p>11:00 – 12:00 Discussion of the relevant manuals (Canberra & Frascati) Mr. Rakesh Chetal/Mr. Daniel Deen/Mr. St. Aimee</p> <p>12:00 – 1:30 – Lunch</p> <p>1:30 – 4:00 Introduction of questionnaire and discussion On collection methodology</p>	<p>9:00 – 10:00 Discussion on the common questionnaire for use in the Caribbean Mr. Chetal/Mr. Deen/Mr. St. Aimee</p> <p>10:00 – 10:45 Discussion on the data collection phase; Sampling Mr. Deen/Mr. Chetal/Mr. St. Aimee</p> <p>10:45 – 11:00 Coffee Break</p> <p>11:00 – 12:00 Agreement on time table for the exercise Mr. St. Aimee</p> <p>12:00 – 1:30 Lunch</p> <p>1:30 – 2:30 Programme for follow-up meeting November 2001</p> <p>End of Workshop</p>

Annex II**LIST OF PARTICIPANTS****Member countries****Antigua and Barbuda**

Mr. Franck Morgen Jacobs, Director of Statistics
 Department of Statistics
 1st Floor ACT Building
 Church and Market Streets, St. John's
 Tel: (268) 462-4775
 Fax: (268) 462-9338
 E-mail: anustats@candw.ag

Bahamas

Ms. Denise S. Samuels, Senior Research Assistant
 Research Unit, College of the Bahamas
 PO Box N-4912, Nassau
 Tel: (242) 326-4501/2
 Fax: (242)-326-4502
 E-mail: susam@gohip.com

Dominica

Ms. Vanya Jones, Statistician
 Education Planning Unit
 Ministry of Education, Science & Technology
 Government Headquarters
 Kennedy Avenue, Roseau
 Tel: (767) 448-2401 Ext 3061
 Fax: (767) 448-1701
 E-mail: vjones@cwdom.dm

Grenada

Mr. Osmore Gall, Consultant
 CEL Research Centre
 Morne Jaloux, St. George's
Grenada
 Tel: (473) 440-1782
 Fax: (473) 443-5081
ojgall@caribsurf.com, osmore@hotmail.com

St. Vincent & the Grenadines

Ms. Nazaket Bonadie, Laboratory Technician
 Bureau of Standards
 Campden Park
 Tel: (784) 457-8092
 E-mail: svbs@caribsurf.com

Institutions/organizations**National Institute of Higher Education, Research, Science and Technology (NIHERST)**

Mr. Daniel Deen, Senior Statistician
#8 Serpentine Road
St. Clair
Trinidad and Tobago
Tel: (868) 628-1154
Fax:: (868) 622-8343
E-mail: st_research@niherst.gov.tt

Mr. Rakesh Chetal, ITEC Consultant
#8 Serpentine Road
St. Clair
Trinidad and Tobago
Tel: (868) 628-1154
Fax:: (868) 622-8343
E-mail: st_research@niherst.gov.tt

Ms. Elizabeth Lloyd, Research Officer I
#8 Serpentine Road
St. Clair
Trinidad and Tobago
Tel: (868) 628-1154
Fax:: (868) 622-8343
E-mail: st_research@niherst.gov.tt
lizlloyd@yahoo.com

**Economic Commission for Latin America and the Caribbean
Subregional Headquarters of the Caribbean**

Mr. Donatus St. Aimee, Economic Affairs Officer (Science and Technology)
Third Floor, CHIC Building
Park and Edward Streets
Port of Spain
Trinidad and Tobago
Tel: (868) 623-5595 Ext 370
Fax: (868) 623-8485
E-mail: dstaimee@eclacpos.org

Ms. Joanne C. Mora, Technical Cooperation Assistant
Tel: (868) 623-5595 Ext 381
Fax: (868) 623-8485
E-mail: jmora@eclacpos.org

