

**The Ministry of Education**  
**THE CROPPER FOUNDATION**  
**The Environmental Management Authority**

**Seminar for CAPE and CXC Science Teachers**

**Environmental Management Authority Conference Room**

**Friday 16<sup>th</sup> June 2006**

**9:00 a.m. – 3:30 p.m.**

**Seminar Objectives**

1. To provide preliminary insights and guidance to teachers on meeting some of the requirements under the CXC and CAPE syllabi with components related to environment/ sustainable development:
  - to bring to the attention of secondary school teachers the findings of three ecosystem assessments: the Northern Range, Caribbean Sea and Millennium Ecosystem Assessments; and
  - to discuss how these Assessments can be used to support various aspects of the CAPE and CXC syllabi;
2. To identify ways in which The Cropper Foundation can continue to support teachers in meeting curriculum requirements.

**Proposed Programme**

8:30 a.m.	Registration
9:00 a.m. – 9:30 a.m.	<ul style="list-style-type: none"><li>▪ Introduction and opening remarks (<i>Angela Cropper</i>)<ul style="list-style-type: none"><li>- objectives of the seminar</li></ul></li><li>▪ Remarks from the Ministry of Education (<i>Henry Saunders</i>)</li><li>▪ Remarks from the Environmental Management Authority (<i>John Agard</i>)</li></ul>
9:30 a.m. – 10:15 a.m.	Overview of the existing CXC and CAPE science syllabi ( <i>Declan Hive</i> ) <ul style="list-style-type: none"><li>- requirements under the environmental sciences, geography, biology, chemistry, and Caribbean studies syllabi</li><li>- main challenges faced by teachers in meeting the requirements outlined</li></ul>
10:15 a.m. – 10:30 a.m.	<i>Coffee break</i>

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10:30 a.m. – 12:30 p.m.	Resource information available from The Cropper Foundation in support of the CXC and CAPE science syllabi: <ul style="list-style-type: none"><li>▪ presentations on the main findings of:<ul style="list-style-type: none"><li>- the Millennium Ecosystem Assessment – MA (<i>Angela Cropper</i>)</li><li>- the Northern Range Assessment (<i>Keisha Garcia</i>)</li><li>- the Caribbean Sea Assessment – CARSEA (<i>John Agard</i>)</li></ul></li><li>▪ viewing of a DVD on the Biodiversity of the Northern Range (35 minutes)</li></ul>
12:30 p.m. – 1:00 p.m.	Discussion <ul style="list-style-type: none"><li>- use of the Northern Range, Caribbean Sea and Millennium Ecosystem Assessment material in meeting requirements under the CAPE and CXC syllabi</li></ul>
1:00 p.m. – 2:00 p.m.	<b><i>Lunch</i></b>
2:00 p.m. – 3:30 p.m.	Discussion <ul style="list-style-type: none"><li>- characterization of the needs of teachers in meeting syllabus requirements</li><li>- identification of the ways in which The Cropper Foundation can continue to support teachers</li></ul> <p style="text-align: right;">Summary and Closing remarks (<i>Angela Cropper</i>)</p>
3:30 p.m.	Adjourn

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## **SEMINAR FOR CAPE AND CXC SCIENCE TEACHERS**

### **Synthesis of the Meeting**

Environmental Management Authority Conference Room  
#8 Elizabeth Street, St. Clair  
Friday 16<sup>th</sup> June 2006  
9:00 a.m. – 3:30 p.m.

*Chair: Mr. Henry Saunders<sup>1</sup>*

#### **Item 1: Introductions**

Angela Cropper<sup>2</sup> welcomed participants (list attached as Annex 1) and provided an overview of the objectives of the meeting, as follows:

1. To provide preliminary insights and guidance to teachers on meeting some of the requirements under the CXC and CAPE syllabi with components related to environment/sustainable development:
  - to bring to the attention of secondary school teachers the findings of three ecosystem assessments: the Northern Range, Caribbean Sea and Millennium Ecosystem Assessments; and
  - to discuss how these Assessments can be used to support various aspects of the CAPE and CXC syllabi;
2. To identify ways in which The Cropper Foundation can continue to support teachers in meeting curriculum requirements.

Opening remarks and greetings were also provided by Mr. Henry Saunders on behalf of the Ministry of Education, and by Dr. John Agard on behalf of the Environmental Management Authority.

#### **Item 2: Presentations**

*Mr. Declan Hive<sup>3</sup> provided an overview of the CAPE and CXC science syllabi, including environmental sciences, geography, biology, chemistry and Caribbean Studies.* He highlighted:

1. the requirements under the syllabi as they relate to sustainable development/ environment
2. the main challenges faced by teachers
3. some ideas for support that can be provided to teachers by The Cropper Foundation.

A copy of this presentation is attached as a pdf file.

Discussions arising out of points 2 and 3 above are reflected under Item 3.

***Presentations on the Northern Range, Caribbean Sea, and Millennium Ecosystem Assessments were also provided,*** and these are attached. A few overarching points were noted:

- The Northern Range Assessment, the Caribbean Sea Assessment (CARSEA), and the Millennium Ecosystem Assessment (MA)<sup>4</sup> considered: the resources (or services) provided by the ecosystem(s), and how these resources are linked to human well-being; the factors that have been impacting these services, and the changes occurring within the ecosystem(s)

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<sup>1</sup> Curriculum Officer (Science, Technology and Tertiary Education), Ministry of Education

<sup>2</sup> President, The Cropper Foundation

<sup>3</sup> Geography teacher – IERE High School, and President of the Geography Teachers' Association.

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as a result; and the effectiveness of past and current responses (or policies and actions) to ecosystem degradation. On this basis, several options and recommendations relating to what might be done to better manage the resources of the ecosystem(s) have been proposed.

- The Northern Range Assessment Report was published as the Environmental Management Authority's State of the Environment Report 2004. The Caribbean Sea Assessment is close to completion, and will be published later this year.
- The Cropper Foundation initiated a Programme in Environment and Resource Education (IERE) on the basis of these three scientific assessments
- These assessments have provided opportunities for both capacity building and development of learning materials through their content. There are also specific case study requirements under the CAPE science syllabi which are fulfilled by the Northern Range and Caribbean Sea Assessments related to:
  - sustainable use of natural resources
  - investigate at least two ecosystems in a territory
  - benefits of natural ecosystems
  - dependence of people on ecological systems and processes
  - ways in which people impact negatively on the environment
  - water sources; water pollution; watershed destruction
  - an analysis of options for the use of resources

Presentations, and copies of the Northern Range and Caribbean Sea Assessment Reports<sup>5</sup> are available from The Cropper Foundation. More information on the Millennium Ecosystem Assessment (MA) is available on the MA website ([www.millenniumassessment.org](http://www.millenniumassessment.org)).

*Professor Julian Kenny introduced the DVD on the Biodiversity of the Northern Range explaining that this DVD:*

- is based mainly on the findings of the Northern Range Assessment, but makes use of his (Professor Kenny's) extensive collection of Northern Range photographs
- was developed for use especially at the CAPE and CXC levels, and for subjects with some component related to ecology/ environmental sciences
- adopted an approach where students were actively involved in the DVD scripting and narrating processes, which provided an opportunity for capacity building, and for learning by doing.

Copies of the DVD on the biodiversity are available from The Cropper Foundation<sup>6</sup>.

**Item 3: Discussions**

The main categories of problems/ needs expressed by teachers, during the course of Mr. Declan Hive's presentation and during discussions, are summarized as follows:

1. Inadequate resource materials for meeting the requirements under the new CAPE syllabi
2. In some cases, the requirements under the CAPE syllabi are vague, and there is a mismatch between the syllabi requirements and examination questions
3. Unrealistic timeframe for completing syllabi
4. Poor networking among teachers
5. Meeting fieldwork requirements is difficult

*Ideas relating to the nature of support that can be provided by The Cropper Foundation to assist teachers in meeting their needs are categorized as follows:*

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<sup>4</sup> The Millennium Ecosystem Assessment was a five-year global project that considered the state of the world's ecosystems. See [www.millenniumassessment.org](http://www.millenniumassessment.org)

<sup>5</sup> The Caribbean Sea Assessment Report is still in draft form.

<sup>6</sup> Tel: 626-2628.

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***1. Resource Materials***

*Identification of suitable resource material*

Assistance can be provided to teachers by the IERE Advisory Committee through the identification and assimilation of relevant, existing resource materials for meeting the requirements specified under the following syllabi: Environmental Sciences, Geography, Caribbean Studies, Biology and Chemistry.

*Production of learning materials*

The Cropper Foundation will continue to develop learning materials for use in schools (similar to the DVD on the Biodiversity of the Northern Range), especially at the fifth and sixth form levels, based on identification of information gaps in the syllabi.

One idea is to produce a series of DVDs on a variety of syllabus topics, involving teachers and students of different schools, in the scripting, narrating and recording of each topic. In doing this, The Foundation would an approach that would facilitate learning-by-doing through involvement of users of the materials in the process of production.

A process will have to be developed through which schools, teachers and students interested in undertaking research of this type will be identified. The Cropper Foundation will assist in matching these interests with the needs identified in the syllabi and with field exercises that might be undertaken and which have potential for replicating. Upon agreement with the Ministry of the field exercises to be undertaken the Foundation will then organize and manage the activity.

Using these experiences and the information that they generate, it may also be possible to develop other teaching tools, such as a case study booklet, and brochures and posters, but this will depend on financial arrangements.

*Resource-base for environment/sustainable development*

The Cropper Foundation is seeking to make its bank of resource material relating to environment/sustainable development issues available at its library<sup>7</sup> which:

- is situated at The Foundation's office, and will be open for use to teachers and students by arrangement
- will be catalogued online allowing users easy access to the database
- will be linked to other libraries' (including NALIS) resources and other useful websites so that the searchable resource base is as comprehensive as possible.

To facilitate accessing its library, The Foundation will also seek to make computers and internet resources available at its education space for online researching.

***2 Seminars/ Workshops/ Tutorials for teachers***

A series of seminars, workshops and tutorials can be designed for teachers with the following objectives:

- to advise teachers, in subject areas related to environment/ sustainable development, about how available information could be used to effectively meet their syllabi requirements
- to encourage and facilitate cross-disciplinary, cross-school discussions and learning among teachers
- to provide hands-on experience for teachers through field trips
- to get feedback from teachers on issues relating to their syllabi
- to motivate teachers through the above objectives

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<sup>7</sup> Located at The Cropper Foundation's offices.

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*Tutorials for students*

Tutorial sessions for school students can also be offered in small, focused groups, either at schools or at The Cropper Foundation. In some cases, these will be designed to assist teachers who are unable to, or uncomfortable with, covering specialized aspects of their syllabi. It is envisaged that these will be offered upon request, but will depend on the availability of resource personnel.

***3 Technical support***

The Cropper Foundation can also provide technical support to teachers and the Ministry of Education in the following ways:

- The Foundation's Advisory Committee for IERE will assess the CAPE syllabi, as they are revised, and provide feedback to the Ministry of Education, making suggestions for improvement.
- In the early stages of the Programme, where teachers are required to undertake fieldwork and need technical guidance to do so, The Cropper Foundation could assist by, for example, identifying suitable ecosystems, or by trying to organize for an expert to accompany the teacher on the field trip
- The Advisory Committee for IERE could also seek to make technical inputs into teachers' networks, for example the Geography Teachers' Association.

*The Cropper Foundation  
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