



**Caribbean Planning for Adaptation to Global Climate Change Component #3:
Inventory of Coastal Resources & Uses**

Component #3: Inventory of Coastal Resources and Uses

Report of the Training Workshop on:

**FEATURE EXTRACTION FROM IKONOS
SATELLITE IMAGERY**

Held on: November 3-4, 2000

At PRT Barbados Ltd, Bridgetown, Barbados

Submitted by

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November 06, 2000

Training Workshop on Feature Extraction from IKONOS Satellite Imagery

INTRODUCTION

The training workshop on “Feature Extraction from IKONOS Satellite Imagery” was held at PRT Barbados Ltd, Harbour Industrial Park, Barbados from November 3-4, 2000. The workshop was conducted under UWICED/CPACC Service Contract No. 99017.

The workshop attracted 23 participants from the 12 participating countries. The list of participants is in **Appendix I** of this report. The following resource persons provided instruction to the Workshop: Jacob Opadeyi, Shahiba Ali, Eva Chin, and Nigel Marshall.

Mr, Ian King of the CPACC/RPIU provided effective on-site coordination for the workshop. All the logistic arrangements were well delivered.

Each participant was taken through the tutorials required to reinforce the learning. **Appendix II** gives the workshop schedule.

Evaluation of the Workshop by the Participants

An evaluation of the workshop was conducted using the questionnaire in **Appendix III**. The participants were asked to rate their opinion on the following evaluation parameters on a scale of **1** to **5** (where **1** indicated **very poor** and **5** indicated **very good** or **very well**). A rating of less than **3** is considered to be an indication of a serious problem. The following is an analysis of the responses:

The Course

1a. On how valuable was the workshop,

- 50% gave a score of **5**,
- 35% gave a score of **4**,
- 5% gave a score of **3** and
- 10% did not respond

1b. On how valuable were the lecture sessions,

- 40% gave a score of **5**,
- 45% gave a score of **4**,
- 5% gave a score of **3**, and
- 10% did not respond

1c. On how valuable were the tutorial sessions,

- 45% gave a score of **5**,
- 40% gave a score of **4**,
- 5% gave a score of **3**, and

- 10% did not respond.

1d. On the level of knowledge of the instructors,

- 80% gave a score of **5**,
- 5% gave a score of **4**,
- 5% gave a score of **3**, and
- 10% did not respond.

1e. On the quality of instruction,

- 55% gave a score of **5**,
- 30% gave a score of **4**,
- 5% gave a score of **3**, and
- 10% did not respond.

Results

2a. On whether the participants felt that they were capable of designing spatial databases for GIS,

- 30% gave a score of **5**,
- 50% gave a score of **4**,
- 15% gave a score of **3**, and
- 5% gave a score of **2**.

2b. On whether the participants felt that they were capable of digitizing and editing errors in mapped data,

- 35% gave a score of **5**,
- 55% gave a score of **4**, and
- 10% gave a score of **3**.

2c. On whether the participants felt that they were capable of extracting thematic data from IKONOS imagery,

- 35% gave a score of **5**,
- 55% gave a score of **4**, and
- 10% gave a score of **3**.

2d. On whether the participants felt that they were capable of managing spatial databases,

- 25% gave a score of **5**,
- 55% gave a score of **4**, and
- 20% gave a score of **3**.

Resources and Facilities

3a. The adequacy of the schedule was rated as follows:

- 30% of the participants gave a score of **5**,
- 50% gave a score of **4**,
- 15% gave a score of **3**, and
- 5% gave a score of **2**.

3b. The audio-visual materials were rated as follows:

- 60% of the participants gave a score of **5**,
- 35% gave a score of **4**, and
- 5% gave a score of **3**.

3c. The course binder and printed materials were rated as follows:

- 70% of the participants gave a score of **5**,
- 20% gave a score of **4**,
- 5% gave a score of **3**, and
- 5% did not respond.

3d. The training facility was rated as follows:

- 80% of the participants gave a score of **5**,
- 15% gave a score of **4**, and
- 5% did not respond.

Course Instructors

The participants gave the following scores in evaluating the instructors in terms of:

4a. Their knowledge of the subject matter:

- 85% gave a score of **5**, and
- 15 % gave a score of **4**.

4b. Their ability to convey the knowledge:

- 80% gave a score of **5**, and
- 20 % gave a score of **4**.

4c. Their ability to stimulate class interest:

- 75% gave a score of **5**,
- 20 % gave a score of **4**, and
- 5% gave a score of **3**.

Course Material

5a. On the question on whether the course materials were used effectively in the classroom,

- 100% of the participants said '**Yes**'.

- 5b. On the question on whether the course materials will serve as a useful reference,
- 100% of the participants said 'Yes'.

Compatibility with Job Responsibility

6a. Ninety-five per cent (95%) of the participants felt that their interests, prior skills and job responsibilities were compatible with the course material and training objectives, while 5% did not respond.

General Atmosphere of the Workshop

8. Ninety per cent (90%) of the participants felt that the atmosphere of the course allowed them to relate well to each other, while 10% did not respond.

Follow-up activities to the course:

- With respect to CRIS, four participants expressed the need for training, development of applications and user support for CRIS in each country.
- With respect to GIS training, three participants requested training in the use of ArcView, and the evaluation and implementation of GIS in their agencies.
- With respect to IKONOS imagery, one participant requested workshops on image interpretation and another wanted to acquire the relevant images for his country.

Conclusion

From the analysis of the participants' evaluation, it can be seen that the participants gave a high rating to the quality of the workshop as demonstrated by their responses.

In general, the workshop instructors benefited from the prior knowledge of some of the participants, who regularly used the software for on-screen digitizing. Most of the participants were already exposed to on-screen digitizing and error editing in *ArcView 3.1* from an earlier workshop held in St. Lucia. However, they used the tutorials to refresh their knowledge of the techniques.

Overall, the participants were keen to acquire knowledge on feature extraction from an IKONOS image and add to their knowledge on digitizing and error editing in *ArcView 3.1*. The consultant was glad to have been involved in the workshop. The eagerness of the participants and the high quality of the logistical arrangements will always be remembered.

APPENDIX I

List of Participants

PARTICIPANTS OF THE CPACC TRAINING ACTIVITY

OCTOBER 29 - NOVEMBER 05, 2000

NUMBER	NAME	AGENCY	COUNTRY	FUNCTION	EMAIL ADDRESS
1.	Mr. Philmore James	Fisheries Division	Antigua	Trainee	fisheries@candw.ag
2.	Mr. Alvah Guishard	DCA	Antigua	Trainee	authority@candw.ag
3.	Ms. Nakira Gaskin	BEST	Bahamas	Trainee	ngaskin@hotmail.com
4.	Ms. Tamica Rahming	Dept. of Fisheries	Bahamas	Trainee	trahming@hotmail.com
5.	Mr. Ron Goodridge	CZMU	Barbados	Trainee	rgczmu@yahoo.com
6.	Mr. Ryan Brathwaithe	CZMU	Barbados	Trainee	docfray@hotmail.com
7.	Mr. Ian Gillett	CZMI	Belize	Trainee	iagillett@hotmail.com
8.	Ms. Jiselle Allport	Fisheries Division	Dominica	Trainee	allpy@cwdom.dm
9.	Ms. Annie Edwards	Phy. Plan. Div.	Dominica	Trainee	phyplanning@cwdom.dm
10.	Mr. Michael Mason	Land Use Div.	Grenada	Trainee	elvmason@netscape.net
11.	Mr. Fabian Purcell	Phy. Plan. Unit	Grenada	Trainee	fmpurcell@netscape.net
12.	Mr. Rajkumar Singh	EPA	Guyana	Trainee	raj3singh@yahoo.com
13.	Mr. Zainool Rahaman	Hydromet. Service	Guyana	Trainee	zainoolm@yahoo.com
14.	Mr. Ainsley Henry	NRCA	Jamaica	Trainee	ahenry@nrca.org
15.	Mr. Anthony Murray	NRCA	Jamaica	Trainee	amurray@nrca.org
16.	Mr. Graeme Browne	Phy. Plan. Div.	St. Kitts	Trainee	mastergraeme@hotmail.com
17.	Mr. Austin Farier	Phy. Plan. Div.	St. Kitts	Trainee	jay_farier@hotmail.com
18.	Ms. Susanna Scott	Dept. of Fisheries	St. Lucia	Trainee	
19.	Ms. Rebecca Rock	Phy. Planning	St. Lucia	Trainee	gisunit@hotmail.com

20.	Mr. Edmund Jackson	Min. of Health & Env	St. Vincent	Trainee	svgenv@caribsurf.com
21.	Ms. Cheryl Jardine	Fisheries Division	St. Vincent	Trainee	fishdiv@caribsurf.com
22.	Mr. Gerard Alphonso	EMA	Trinidad	Trainee	galphonso@hotmail.com
23.	Ms. Yosha Ragbirsingh	IMA	Trinidad	Trainee	yragbirsingh@hotmail.com
24.	Ms Shahiba Ali	CGS-UWI	Trinidad	Trainer	shahibaa@hotmail.com
25.	Ms. Eva Chen	CGS-UWI	Trinidad	Trainer	gce@trinidad.net
26.	Dr. Jacob Opadeyi	CGS-UWI	Trinidad	Trainer	jopadeyi@hotmail.com
27.	Mr. Nigel Marshall	Geocaribe	Barbados	Trainer	nrmarsh@sunbeach.net
28.	Mr. Ian King	CPACC RPIU	Barbados	CPACC	kingcpacc@sunbeach.net

APPENDIX II

Workshop Schedule

FEATURE EXTRACTION FROM IKONOS SATELLITE IMAGERY

Course Objectives

This course is designed to expose the participants to the methodology used to extract thematic data from IKONOS satellite imagery. At the end of the training programme the participants would be able to:

- design spatial databases for GIS
- extract thematic spatial data from IKONOS satellite imagery
- edit errors in spatial data
- create topological databases

Target Group

Persons directly responsible for the creation, maintenance, and management of CPACC's Component 3 GIS databases in their respective countries.

COURSE SCHEDULE

Day One

1330 - 1430: Introduction to Remote Sensing Concepts and to IKONOS Imagery

1430 - 1500: Review of Maps, Map projection, & Coordinate System concepts

1500 - 1530: *TEA BREAK*

1530 - 1600: Georeferencing and Raster Images

1600 - 1700: Logical design of spatial databases

Day Two

<i>Time</i>	<i>Group 1</i>	<i>Group 2</i>	<i>Group 3</i>	<i>Group 4</i>
0830-1030	T1	T2	T1	T2
1030-1100	Break			
1100-1200	T2	T1	T2	T1
1200-1300	Lunch			
1300-1400	T2	T1	T2	T1
1400-1500	T3	T3	T3	T3
1500-1530:	<i>Break</i>			
1530-1600:	Quality Control and Quality Assurance			
1600-1700:	Review and Course Evaluation			

<i>Tutorial Code</i>	<i>Activity</i>
T1	Extraction of point and linear features
T2	Extraction of polygon features
T3	Error editing and topology

APPENDIX III
WORKSHOP EVALUATION FORM

CPACC

Caribbean Planning for Adaptation to Global Climate Change Component #3:
Inventory of Coastal Resources & Uses

Training Workshop:

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Nov. 3rd-4th, 2000
Barbados

WORKSHOP EVALUATION FORM

This course is designed to expose the participants to the methodology used to extract thematic data from IKONOS satellite imagery. At the end of the training programme the participants would be able to:

- design spatial databases for GIS
- extract thematic spatial data from IKONOS satellite imagery
- edit errors in spatial data and create topological databases
- manage spatial databases

1. The Course

Please indicate your response using the following rating scale by circling the appropriate number: 1, 2, 3, 4, 5. [1 = very poor (or not very well); 5 = very good (or very well)]

	Poor			Good	
How valuable was the workshop to you?	1	2	3	4	5
The lecture sessions were:	1	2	3	4	5
The tutorial sessions were:	1	2	3	4	5
The knowledge level of instructors was:	1	2	3	4	5
The quality of instruction was:	1	2	3	4	5

2. Results

Do you feel capable of:		Not capable					Very capable			
▪ designing spatial databases for GIS	1	2	3	4	5					
▪ digitize and edit errors in mapped data	1	2	3	4	5					
▪ extract thematic data from IKONOS	1	2	3	4	5					
▪ manage spatial databases	1	2	3	4	5					

3. Resources and Facilities

Rate the adequacy of the following:		Poor					Good			
The schedule was:	1	2	3	4	5					
The audio-visual materials were:	1	2	3	4	5					
The course binder and printed materials were:	1	2	3	4	5					
The training facility was:	1	2	3	4	5					

4. Course Instructors

Evaluate the instructors on the following criteria:		Poor					Good			
Knowledge of subject matter	1	2	3	4	5					
Ability to convey the knowledge	1	2	3	4	5					
Ability to stimulate class interest	1	2	3	4	5					

5. Course Material

5a. Were the course materials used effectively in the classroom?

YES

NO

5b. Will the course material serve as a useful reference?

YES

NO

5c. Specify, how will material learnt on this Course be of benefit to you in your daily operation?

6a. Were your interests, prior skills, and job responsibilities compatible with the course material and training objectives?

6b. If NOT what do you think were the major deficiencies and what are your suggestions for improvement?

7. What activity would you like to see as a follow-up to this Course?

8. In general, do you think that the atmosphere of the course allowed participants to relate well to each other?

YES

NO

9. Please comment on any specific problems you experienced during this workshop.

NAME OF PARTICIPANT: _____

OFFICIAL POSITION: _____

PLACE OF EMPLOYMENT: _____