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INTERNATIONAL COMMUNITY UNIVERSITY RESEARCH ALLIANCES (ICURA) MID-TERM REPORT

C-Change ICURA MID-TERM REPORT

PART A (Quantitative results and short responses)

PART A: Appendices

The material in the appendix below are the appended elements of the Mid-Term Report for **Part A: Quantitative results and short responses** that provides the overview of the evolution of the ICURA's community and university partnerships, research training, research and knowledge production, and knowledge mobilization. The **Part A** appended elements provided below include:

Appendix A1 – The List of major research papers, thesis or postdoctoral research projects that have been or will be produced by C-Change team members.

Appendix A2 – The bibliography of publications sorted by peer reviewed and non peer-reviewed research outputs and the type of publication (e.g., book, book chapter, article, news article, video/audio materials on or produced by teams) and their status (i.e., submitted; accepted for publication; published). This bibliography is provided as per the publication guidelines of the IDL Library.



Appendix A1: Major Research Papers, Theses, and Research projects

This Part A appendix provides the appended a list of: major research papers, thesis or postdoctoral research projects that have been or will be produced following the students or researchers' involvement in the C-Change ICURA research activities. The list is compiled in designated Table A1 below and includes the list of completion dates and/or anticipated completion dates as well as the project titles.

The major research papers, thesis and research projects identified in Table A1 are fully cited in the Appendix A3 below, C-Change – Bibliography of Research Outputs.

TABLE A1: Major Research Papers, Theses, and Research Projects

C-Change Researchers	Paper/Thesis/Project Title	Researchers Affiliation	Research Lead/Supervisor	Completion Date
Caribbean				
Alexander, Safiya	Determining sea level trends and their impact upon coastal communities	BSc. Geomatics, UWI, St. Augustine	Michael Sutherland	Completed July 2011
Beard, Tracey	To be determined	M.Sc. Urban and Regional Planning, UWI, St. Augustine	Michelle Mycoo	Expected completion 2012
Bowen, Kyana	Physical Planning and other adaptations measures to Seal Level rise in Grande Rivière	MSc Urban and Regional Planning, UWI, St. Augustine	Michelle Mycoo	Thesis submitted December 2011, under review
Finch, Keston	Modelling Shoreline Change in the Face of Sea Level Rise	MSc Coastal Engineering, UWI, St. Augustine	Deborah Villarroel-Lamb	Expected completion September 2012
Fortune, Hannah	To be determined	MSc Urban and Regional Planning, UWI, St. Augustine	Michelle Mycoo	Expected completion September 2013
Ganase, Sherry Ann	Environmental Vulnerability of Small Island Developing States	MPhil Economics, UWI, St. Augustine	Sonja Teelucksingh, Martin Franklin, Patrick Watson, Sandra Sookram	Expected completion September 2013
Ganase, Sherry-Ann	Linking Vulnerability, Adaptation and Mitigation in SIDS: Climate Change	MSc Economics, UWI, St. Augustine	Sonja Teelucksingh, Martin	September 2011



C-Change Researchers	Paper/Thesis/Project Title	Researchers Affiliation	Research Lead/ Supervisor	Completion Date
	and the Community of Grande Riviere		Franklin	
Gossai, Gopnauth	Vulnerability to Sea Level Rise in an Urban Center of a Developing Country: A Case Study of Georgetown, Guyana	MSc Economics, UWI, St. Augustine	Patrick Watson, Martin Franklyn	September 2010
Grant, Sade	Assessing the socioeconomic impact of sea level rise on coastal communities	BSc Geomatics, UWI, St. Augustine	Michael Sutherland	Completed July 2011
Hosein, Farah	Assessment and validation of sea level rise threat-Grand Riviere, Trinidad	BSc Geomatics, UWI, St. Augustine	Michael Sutherland	Completed December 2011
Joseph, Alana	An Assessment of the Potential Effects of Beach Morphology on the Spatial and Temporal Nesting Patterns of <i>Dermchelys coriacea</i> at Matura and Grand Riviere, Trinidad	MPhil Geography, UWI, St. Augustine	Paul Shaw	Thesis to be submitted
Leung, Kira-Lise	Physical Planning Adaptation to Flooding and Climate Change in Georgetown, Guyana	MSc Urban and Regional Planning UWI, St. Augustine	Michelle Mycoo	Completed December 2011
Lynch, Nolan	The Impact of Sea Level Rise on the Ecosystem and Economy of Bequia, St Vincent and the Grenadines.	MPhil Tropical Earth and Environmental Science, UWI, St. Augustine	Mark Wuddivira	Expected completion September 2013
Osuala, Dickson Chiedozie	Managing the effect of Climate Change on Coastal Communities: a Caribbean Perspective.	PhD Economic Development, UWI, St. Augustine	Sonja Teelucksingh Patrick Watson, Sandra Sookram	Expected completion September 2013
Rampersadsingh, Rachel	Assessing the political impact of sea level rise on coastal community land use	BSc Geomatics, UWI, St. Augustine	Michael Sutherland	Completed July 2011
Seeram , Amit	Developing a Predictive GIS Model of Sea Level Rise for a Selected Coastal Community	BSc. Geomatics, UWI, St. Augustine	Michael Sutherland	Completed July 2011
Seeram, Amit	No project yet.	MSc Geo-informatics, UWI, St. Augustine	Michael Sutherland	Expected completion Dec 2012



C-Change Researchers	Paper/Thesis/Project Title	Researchers Affiliation	Research Lead/ Supervisor	Completion Date
Singh, Anushka	Mitigating the effects of potential disasters upon coastal transportation infrastructure	BSc Geomatics, UWI, St. Augustine	Michael Sutherland	Completed July 2011
Singh, Demi	Assessing threats to the health of Buccoo Reef, Tobago	BSc Geomatics, UWI, St. Augustine	Michael Sutherland	Completed July 2011
Singh, Demi	Spatial modeling implications upon socioeconomic impact analysis: Bequia Case Study	MSc Geo-informatics, UWI, St. Augustine	Michael Sutherland	Expected completion July 2012
Udika, Rudo	Physical Planning Adaptation in Belize City in response to climate change	MSc Urban and Regional Planning, UWI, St. Augustine	Michelle Mycoo	Thesis to be submitted.
Wilson, Michael	Spatial analyses of socioeconomic impact of sea level rise threat-Grand Riviere, Trinidad	BSc Geomatics, UWI, St. Augustine	Michael Sutherland	Completed July 2011
CANADA				
Barghi, Sara	Modelling Wastewater Management Systems using SWMM5	MSc Systems Science, UOttawa	Daniel Lane	Expected completion 2013
Braun, Heidi	TBD on Completion of Comprehensive Exams	PhD Geography, UOttawa	Robert McLeman, Daniel Lane	Expected completion 2015
DiFrancesco, Darryn	TBD on Completion of Comprehensive Exams	PhD Resource Management and Environmental Studies, UBC	Ralph Matthews	Expected completion 2015
Fahandezhsaadi, Houman	No title yet	MEng Geodesy and Geomatics Engineering, UNB	Susan Nichols	Expected completion 2014
Hartt , Maxx	Geographic Information Systems and System Dynamics - Modelling the Impacts of Storm Damage on Coastal Communities	MSc Systems Science, UOttawa	Daniel Lane	February 2011
Hatcher, Scott	Waterfront development and coastal hazards under climate change in Iqaluit, NU	MSc Geography, MUN	Donald Forbes	Expected completion 2012
Liu, Yuan	National Transfer Accounts for Canada 2006; Phosphorus Management on the South-Nation; Climate	PhD Economics, UOttawa	Philippe Crabbe	Expected completion 2013



C-Change Researchers	Paper/Thesis/Project Title	Researchers Affiliation	Research Lead/ Supervisor	Completion Date
	Change Adaptation in Charlottetown, using Systems Dynamics			
Matamakaya, James	No Title yet	UNB	Susan Nichols	
Mostofi, Hooman	Multicriteria Decision Evaluation of Adaption Strategies for Vulnerable Coastal Communities	MSc Systems Science, UOttawa	Daniel Lane	July 2011
Nadimi, Ilghelich		MSc Systems Science, UOttawa	Daniel Lane	Expected completion July 2012
Pakdel, Sahar	System Dynamics and GIS in the Simulation of Environmental Change to Coastal Communities	MSC Systems Science, UOttawa	Daniel Lane	August 2011
Tienaah, Titus and Rak, Andriy	Real Time Kinematic Survey Report for Isle Madame Vulnerable Sites (Surveyed July 2011)	MSc Geodesy and Geomatics Engineering, UNB	Susan Nichols	November 2011
Tienaah, Titus	Design and Implementation of a Coastal Collaborative GIS to Support Sea Level Rise and Storm Surge Adaptation Strategies	MScE Geodesy and Geomatics Engineering, UNB	Susan Nichols	Completed June 2011
Tienaah, Titus	No title yet	PhD Geodesy and Geomatics Engineering, UNB	David Coleman	Expected completion 2015
Matthews, R., Vadeboncoeur, N.	A New Institutional Approach to Adaptation Research: Involving Social Science in the Study of Climate Change. University of the West Indies, Trinidad	PhD Resource Management and Environmental Studies, UBC	Ralph Mathews	In review, expected completion 2013



Appendix A2: C-Change – Bibliography of Research Outputs

This Part A appendix provides the appended bibliography of publications sorted by peer reviewed and non peer-reviewed research outputs and the type of publication (e.g., book, book chapter, article, news article, video/audio materials on or produced by teams) and their status (i.e., submitted; accepted for publication; published).

The C-Change Bibliography of Research Outputs is presented in the 2012 Mid Term Report as the project's on-going contribution to the IDRC Digital Library (IDL) and following the IDL publication guidelines for providing access to the current, comprehensive and multilingual collection of research results and documents generated by IDRC-funded projects.

As per the guidelines of the IDRC Digital Library (IDL, <http://idl-bnc.idrc.ca/dspace/>), the C-Change Bibliography of Research Outputs is presented as a source of research literature and a way to make the work of the project publicly available. By working to remove economic, social, and geographic barriers, the C-Change Bibliography of Research Outputs, through the IDL, helps IDRC research partners gain visibility for their research, share knowledge, and participate in global open access.

It is understood that as a grant agreement signed after January 2008, C-Change is obligated to make all funded research accessible in full text, and give permission to IDRC to disseminate research outputs via the IDL. It is also understood that C-Change researchers are expected to publish their research in open access journals that give immediate access or delayed access.

To this end, this appendix submits the developing list of the comprehensive bibliography of C-Change research outputs created during the reporting period (2009 through January 2012). This list is recognized as an ongoing compilation of research documents (by type of research output as per the IDL guidelines). These documents, submitted to the IDL, are also made available publicly on the C-Change website (at URL: www.coastalchange.ca) and at the C-Change Social Networking site (at URL: www.facebook.com/coastalchange/).

The full text of selected research outputs defined in this appendix and presented below are made available (under separate cover) to the IDL, and are made available electronically at either the C-Change website, or the C-Change Social Networking site, either as links, or as MS Office or PDF formatted files. Information on content and sources by the list of types of research indicated in the IDL are provided in the itemized bibliographic table below.

The C-Change project is pleased to announce that the C-Change Bibliography of Research Outputs prepared in the IDL style and format (as first notified in the initial email concerning the IDL to the C-Change Co-Directors, December 14, 2010) is being developed by the C-Change Administrator (Canada) as per those guidelines. The C-Change Bibliography of Research Outputs will be duly reported for all subsequent C-Change reports to IDRC and SSHRC. At the same time, the C-Change website, and the C-Change Social Networking site will continue as the project's own ongoing public depository of research output and communication among co-applicants, collaborators, community partners, administrators and research associates and students.



The table provided below lists the count and type of C-Change project-related documents considered as research outputs amassed by the project to date (2009 through 2011).

Type of Research Output	Description	IDRC Digital Library*	C-Change Document Count	C-Change Public Output**
Progress or interim report	Concise description of the activities that were planned and completed during the period covered by the report	N	5	W
Journal article, book, book chapter	Published copy or final version of the text produced for publication in a scientific journal or as a book	Y	3	W
Newspaper article	Final version of the text produced for publication in a newspaper or scanned copy of a newspaper article	N	7	W, F
Bulletin, newsletter, pamphlets	Communication material produced to inform the community about a project or IDRC activities	Y (if produced for external audience)	3	W, F
Project briefs, project profiles	Pre-project brief highlighting the project in journalistic style normally produced by Communication Division or the Program Initiative	N	1	W
Workshop report	Notes on a workshop reporting its organization, the program and the list of participants and presenters	Y	14	W
Thesis, Projects, Working papers	Literary composition or dissertation embodying IDRC research results or on a scientific topic which refers to an IDRC research project	Y	13 (Theses); 39 (WPs)	W
Conference proceedings, speech, slide presentation	Text of speakers communication presenting research findings	Y	4 (Proceed); 42 (Pres'n)	W
Photograph, film	Pictures or moving images relating project activities or use as a document supporting the project	Y	402+	W, F

* As per the IDL Guidelines provided by IDRC, December 14, 2010 email.

** Designates the current electronic availability of Research Output Types in the C-Change project, i.e., the C-Change website (denoted "W" for "Website") and/or the C-Change Social Networking site (denoted "F" for "Facebook" Group Social Networking site).

The preliminary list of the bibliography of C-Change research outputs below corresponds to the counts of the C-Change research output types referred to in the table above. As noted previously and in the table above, the C-Change research output types are currently made available publicly on the project's Website and/or the Social Networking site developed for the purpose of communication among team and community members.



C-Change Bibliography (to January 2012)

1. Progress or interim reports

- Boudreau, A. 2011. C-Change Isle Madame Research Project: Isle Madame Historical Documentation and Storm Monitoring (2011-2012). Université Sainte-Anne. 10 pp + appendices.
- Lane, D.E., Watson, P.K., and Clarke, J.D., Joseph, C.A., and Cunningham, K. 2012. The 2012 C-Change ICURA Mid-Term Report. To be submitted to IDRC, January 16, 2012. Parts A, B, and C + appendices.
- Lane, D.E., Watson, P.K., and Clarke, J.D. 2011. The 2011 C-Change ICURA Milestone Report. Submitted to IDRC, January 17, 2011. 19p + appendices.
- Lane, D.E., Watson, P.K. 2010. The C-Change ICURA Milestone Framework. Submitted to IDRC, January 15, 2010. 15p + appendices.
- Tienaah, T., and Rak, A. 2011. The RTK Survey to Map Precise Positions: Arichat and Petit-de-Grat, Isle Madame, Nova Scotia. Department of Geodesy and Geomatics Engineering, UNB.

2. Journal article, book, book chapter

- Forbes, D.L. (editor). 2011. *State of the Arctic Coast 2010 – Scientific Review and Outlook*. International Arctic Science Committee, Land-Ocean Interactions in the Coastal Zone, Arctic Monitoring and Assessment Programme, International Permafrost Association. Helmholtz-Zentrum, Geesthacht, Germany, 178 p. <http://arcticcoasts.org>
- James, T.S., Simon, K.M., Forbes, D.L., Dyke, A.S., and Mate, D.J. 2011. *Sea-level Projections for Five Pilot Communities of the Nunavut Climate Change Partnership*. Geological Survey of Canada, Open File 6715, 23 p.
- Seeram, A. 2011. *Developing a Predictive GIS Model of Sea Level Rise for a Community: Grande Riviere, Trinidad and Tobago*. LAP LAMBERT Academic Publishing GmbH & Co., Saarbrücken, Germany.
- Sutherland, M. (2011). "Sea Level Rise Modelling in a Caribbean Small Island Developing State". In Hydro International, 2011, Volume 15, Number 6. Accessed January 13, 2012: http://www.hydro-international.com/issues/articles/id1308-Sea_Level_Rise_Modelling.html

3. Newspaper articles

- MacPhail, Dana. 2011b. Researchers provide update of coastal study. *The Port Hawkesbury Reporter*. December 21, 2011, Vol. 34, No. 48, p.10.



MacPhail, Dana. 2011a. No further help coming for Little Anse. *The Port Hawkesbury Reporter*. March 23, 2011, Vol. 34, No. 12, p.3.

Baboolal, Yvonne. 2011. City Corp can't do it alone: Lee Sing wants help to tackle flooding. *Trinidad and Tobago Guardian*. June 6, 2011. 31616, p.A12.

Author. 2010. SALISES Conference at Hyatt Regency. (with SALISES Director and C-Change (Caribbean) Co-Director Patrick Watson's picture with the President of Trinidad and Tobago during the March 2010 Conference.) *Trinidad and Tobago Guardian*. March 25, 2010.

MacPhail, Dana. 2010. Big opportunities from international study. *The Port Hawkesbury Reporter*. March 3, 2010. Accessed January 11, 2012
at: <http://www.porthawkesburyreporter.com/2010/03/03/big-opportunities-from-international-study/> .

MacPhail, Dana. 2010. Little Anse part of international study. *The Port Hawkesbury Reporter*. February 18, 2010. Accessed January 11, 2012
at: <http://www.porthawkesburyreporter.com/2010/02/18/isle-madame-part-of-international-study/>

CBC Radio. 2009. Cape Breton Morning CBC program interview with C-Change (Canada) Co-Director Dan Lane. Accessed via the CBC. ca Player, December 2009
at: <http://www.cbc.ca/video/player.html?category=News&zone=canada&site=cbc.news.ca&clipid=1679124338>

Telile. 2010. Richmond County News program: Interview with C-Change (Canada) Co-Director Dan Lane.. August 2009. Available in DVD Format.

4. Bulletin, newsletter, pamphlets

Cunningham, K. 2012. C-Change Newsletter. Volume 3. February. C-Change (Canada) Secretariat. 4p. (to appear)

Fahey, K. 2011. C-Change Newsletter. Volume 2. February. C-Change (Canada) Secretariat. 4p.

Fahey, K. 2010. C-Change Newsletter. Volume 1. April. C-Change (Canada) Secretariat. 4p.

5. Project briefs, project profiles

IDRC. 2009. Announcements of the 2008 ICURA Competition. Accessed January 15, 2011
at: www.idrc.ca



6. Workshop reports/Meetings

The following table provides a list of meetings of C-Change Co-Applicants, Partners, Collaborators and Research Associates. In the far right column are listed the agendas and minutes available for download as PDF files on the website

link: <http://www.coastalchange.ca/index.php/documents/meetings>. (This table also appears in Part B of the Mid-Term Report, Appendix B-II, Table B.4, “C-Change Integration Meetings” in response to Section II of Part B, Community and University Partnerships.

Date	Meeting and Location	Agenda / Minutes
June 22-25, 2008	Canada - Caribbean ICURA Team Workshop & LOI Full Proposal Preparation (Ottawa, ON)	2008.06.22 Agenda 2008.06.22 Minutes
June 4, 2009	ICURA Pre-announcement (Ottawa, ON)	2009.06.04 Agenda 2009.06.04 Minutes
June 28-July 2, 2009	IDRC-SSHRC Formal ICURA Announcements. (Ottawa, ON)	2009.06.28 Agenda
December 13-15, 2009	Milestone Framework Meeting. (Ottawa, ON)	2009.12.13 Agenda 2009.12.14 Minutes
December 15, 2009	General Team Meeting. (Ottawa, ON)	2009.12.15 Agenda 2009.12.15 Minutes
February 18, 2010	Canada-Caribbean Team, (Ottawa, ON)	2010.02.18 Agenda
March 23-26, 2010	C-Change meetings pre-SALISES Conference, Port-of-Spain, Trinidad, (Watson, Lane, Sutherland, Henry, Mycoo, Teelucksingh, students) (St. Augustine, T&T)	2010.03.23 Agenda
April 22, 2010	Presentation as a keynote speaker at Prince Edward Island Climate Change Symposium (Charlottetown, PEI) (Forbes)	Presentation file available
April 26 – 27, 2010	Presentation of C-Change M.Sc. thesis work at the Statistics Canada Socio-economic Conference 2010 (Gatineau, PQ) (Hartt, Mostofi, Pakdel)	Presentations and Abstracts available
May 9-11, 2010	C-Change Meeting with UOttawa and UNB Fredericton Research Associates (Tienaah invited), (Ottawa, ON)	2010.05.09 Agenda
May 31, 2010	C-Change UOttawa Meetings on Systems Dynamics (Crabbé, Lane and students) (Ottawa, ON)	2010.05.31 Agenda
July 25-29, 2010	Coastal Zone Canada conference on Healthy Oceans - Strong Coastal Communities (Charlottetown, PEI) (Mercer Clarke, Clarke, Lane, Nichols, students)	Conference Program & Abstracts Available
June 28 to July 2, 2010	Participation in the Fourth World Congress of Environmental and Resource Economists (Montreal, PQ) (Watson, Sutherland, Teelucksingh)	Conference Program & Abstracts Available
October 4-6, 2010	SSHRC-IDRC ICURA Workshop (Ottawa, ON)	2010.10.04 Agenda
Nov 31-Dec 1, 2010	C-Change Presentation to IDRC (Ottawa); meetings with Sutherland, Watson, Teelucksingh (Ottawa, ON)	Presentation file available
June 1-3,	The Sustainable Development of Coastal Communities:	Conference Program &



Date	Meeting and Location	Agenda / Minutes
2011	Challenges and Solutions Conference, (Port-of-Spain, T&T)	Abstracts Available
June 4-6, 2011	Grande Riviere C-Change Community meetings (Grande Rivière, T&T)	Minutes & Agenda available in draft
June 13-17, 2011	World Congress of the Natural Resource Modeling Association on the Adaptation to the Changing Climate (Ottawa, ON)	Conference Program & Abstracts Available
July 14-17, 2011	Annual Congress of the Canadian Society of Landscape Architects, (Iqaluit, NU)	Conference Program & Abstracts Available
November 24, 2011	SSHRC-IDRC ICURA Meetings—C-Change (Canada) Advisory Board meeting on Curriculum (Ottawa, ON)	2011.11.24 Agenda 2011.11.24 Minutes
November 25-26, 2011	SSHRC-IDRC ICURA Meetings - Co-Applicants and Partners, (Ottawa, ON)	2011.11.24-26 Agenda 2011.11.25 Minutes 2011.11.26 Minutes
November 25, 2011	SSHRC-IDRC ICURA Meetings - Research Associates (Ottawa, ON)	2011.11.25 Agenda 2011.11.25 Minutes

7a. Graduate Theses and Undergraduate Final Projects

Alexander, S. 2010. Determining sea level trends and their impact upon coastal communities. B.Sc. Final Project. Department of Geomatics Engineering and Land Management, UWI (St. Augustine).

Ganase, S.A. 2011. Vulnerability, adaptation and mitigation in small island developing states: Climate change and the community of Grande Riviere, Trinidad. M.Sc. Thesis Economics, UWI (St. Augustine) (poster).

Gossai, B. 2010. Vulnerability to Sea Level Rise in an Urban Centre of a Developing Country: A Case Study of Georgetown, Guyana. M.Sc. Thesis Economics, UWI (St. Augustine).

Grant, S. 2010. Assessing the socioeconomic impact of sea level rise on coastal communities. B.Sc. Final Project. Department of Geomatics Engineering and Land Management, UWI (St. Augustine).

Hartt, M. 2010. Geographic Information Systems and System Dynamics: Modelling the Impacts of Storm Damage on Coastal Communities. M.Sc. Thesis Systems Science, University of Ottawa.

Hosein, F.A. 2011. Assessment and validation of the sea level rise threat to Grande Riviere, Trinidad. B.Sc. Final Project. Department of Geomatics Engineering and Land Management, UWI (St. Augustine).



- Leung, K.L. 2010. Adaptation Measures to Climate Change and Sea Level in Georgetown, Guyana. M.Sc. Thesis Urban and Regional Planning, UWI (St. Augustine).
- Mostofi, H. 2011. Multicriteria decision evaluation of adaptation strategies for vulnerable coastal communities. M.Sc. Thesis Systems Science, University of Ottawa.
- Nadimi, I. 2012. Community based protocols for adaptation planning in coastal communities. (tentative). M.Sc. Thesis Systems Science, University of Ottawa. (expected completion – July 2012)
- Pakdel, S. 2011. Spatial – temporal modelling for estimating impacts of storm surge and sea level rise on coastal communities. M.Sc. Thesis Systems Science, University of Ottawa.
- Rampersadsingh, R. 2010. Assessing the potential impact of sea level rise on coastal community land use. B.Sc. Final Project. Department of Geomatics Engineering and Land Management, UWI (St. Augustine).
- Seeram, A. 2010. Developing a predictive GIS model of sea level rise for a selected coastal community. B.Sc. Final Project. Department of Geomatics Engineering and Land Management, UWI (St. Augustine).
- Tienaah, T. 2011. Design and implementation of a coastal collaborative GIS to support sea level rise and storm surge adaptation strategies. M.Sc.E. Thesis Geodesy and Geomatics Engineering, University of New Brunswick.
- Wilson, M. 2011. Spatial analyses of socioeconomic impact on sea level rise threat – Grande Riviere, Trinidad and Tobago. B.Sc. Final Project. Department of Geomatics Engineering and Land Management, UWI (St. Augustine).

7b. Working Papers (Completed or in progress)

- Cunningham, K. and Lane, D. (in progress). C-Change working paper series : List of existing and proposed papers. C-Change Working Paper Series. No. 1. 13 pp.
- Hartt, M., Fahey, K., Mercer Clarke, C., Clarke, J., Crabbe, P., Nichols, S., and Lane, D. (in progress). C-Change community profiling: Describing coastal community systems. C-Change Working Paper Series. No. 2. 14 pp.
- Lane, D. (in progress). C-Change Research Process: Development and integration of research activities. C-Change Working Paper Series. No. 3. 6 pp.
- Lane, D. and Watson, P. 2011. Managing adaptation to environmental change in coastal communities: Canada and the Caribbean. C-Change Working Paper Series. No. 4. 18 pp.
- Lane, D. 2011. Toward adaptive fisheries management: Is the current fisheries management toolbox sufficient to address climate change? C-Change Working Paper Series. No. 5. 37 pp.



- Clarke, J., Mercer Clarke, C., and Lane, D. 2010. Proactive adaptation to climate change: Building bridges between science and local government. C-Change Working Paper Series. No. 6. 16 pp.
- Fahey, K. (in progress). Community environmental by-laws and best practices. C-Change Working Paper Series. No. 7. (in progress).
- Harrt, M., Fahey, K., Mercer Clarke, C., Clarke, J., Crabbe, P., Nichols, S., and Lane, D. (in progress). Community profile metadatabase. C-Change Working Paper Series. No. 8. (in progress).
- Teelucksingh, S. et al. (in progress). The importance of nature to rural communities in developing countries: Community perceptions of biodiversity and ecosystem services in Grande Riviere, Trinidad. C-Change Working Paper Series. No. 9. (in progress).
- Teelucksingh, S. et al. (in progress). A rural community perspective of climate change in developing countries: State of knowledge, level of concern and perception of risk. C-Change Working Paper Series. No. 10. (in progress).
- Teelucksingh, S. et al. (in progress). Raising awareness of climate change in rural communities of developing countries: The role of social media. C-Change Working Paper Series. No. 11. (in progress).
- Teelucksingh, S. et al. (in progress). Costing adaptations to climate change and sea level rise: The case of turtle nesting sites at Grande Riviere. C-Change Working Paper Series. No. 12. (in progress).
- Teelucksingh, S., Sutherland, M. et al. (in progress). GIS applications and coastal setbacks as an adaptation measure to climate change and sea level rise: Sea turtle nesting in Grande Riviere. C-Change Working Paper Series. No. 13. (in progress).
- Teelucksingh, S. et al. (in progress). Implications of climate change impacts for community-based ecotourism: Grande Riviere Toco. C-Change Working Paper Series. No. 14. (in progress).
- Sutherland, M. (in progress). Sea level rise modelling in support of socio-economic impact analysis: Grande Riviere, Trinidad and Tobago. C-Change Working Paper Series. No. 15. (in progress).
- Mycoo, M. (in progress). Building resilience in Georgetown, Guyana: Adaptation measures for climate change and sea level rise. C-Change Working Paper Series. No. 16. (in progress).
- Mycoo, M. (in progress). Vulnerability to sea level rise in an urban centre of a developing country: A case study of Georgetown, Guyana. C-Change Working Paper Series. No. 17. (in progress).



- Sutherland, M. (in progress). GIS modelling and socioeconomic impact analysis. C-Change Working Paper Series. No. 18. (in progress).
- Tienaah, T. and Nichols, S. (in progress). Volunteered geographic information. C-Change Working Paper Series. No. 19. (in progress).
- Sutherland, M. (in progress). Difficulties in sea level rise modelling in SIDS. C-Change Working Paper Series. No. 20. (in progress).
- Matthews, R. and Vadeboncoeur, N. (in progress). Community surveys – Questions and response. C-Change Working Paper Series. No. 21. (in progress).
- Matthews, R. and Vadeboncoeur, N. (in progress). Community governance and climate change. C-Change Working Paper Series. No. 22. (in progress).
- Hatcher, S., Forbes, D. and Manson, G. 2011. Coastal hazard assessment for adaptation planning in an expanding Arctic municipality. C-Change Working Paper Series. No. 23. 15 pp.
- Forbes, D., Hatcher, S., Nichols, S., and Webster. (in progress). Elevation data updating – Atlantic communities. C-Change Working Paper Series. No. 24. (in progress).
- Hartt, M., Pakdel, S., Mostofi, H., Forbes, D. and Lane, D. (in progress). Severe coastal storm event modelling. C-Change Working Paper Series. No. 25. (in progress).
- Hartt, M., Pakdel, S., Mostofi, H., Forbes, D. and Lane, D. (in progress). Estimating the impacts of coastal storm events in Atlantic Canada. C-Change Working Paper Series. No. 26. (in progress).
- Mostofi, H., and Lane, D. (in progress). Decision prioritization and risk profiling in coastal communities. C-Change Working Paper Series. No. 27. (in progress).
- Mostofi, H., and Lane, D. (in progress). Multidimensional measurement of vulnerability and resilience in coastal communities. C-Change Working Paper Series. No. 28. (in progress).
- Liu, Y., and Crabbe, P. (in progress). System dynamics modelling of the impacts on communities of coastal storm surge and sea level rise. C-Change Working Paper Series. No. 29. (in progress).
- Hartt, M., Pakdel, S., Liu, Y., Crabbe, P. and Lane, D. (in progress). Applications of system dynamics to Canadian Communities. C-Change Working Paper Series. No. 30. (in progress).
- Lane, D. (in progress). Multicriteria decision making for a new emerging fisheries case study: Twinkly Twinkly. C-Change Working Paper Series. No. 31. (in progress).
- Sookram, S., and Sutherland, M. 2011. The vulnerability of coastal communities to sea level rise: A case study of Grande Riviere, Trinidad and Tobago. C-Change Working Paper Series. No. 32. 25 pp.



- Mycoo, M., and Sutherland, M. 2010. Climate change and physical development threats, challenges and adaptation responses in coastal communities: Grande Riviere, Trinidad. C-Change Working Paper Series. No. 33. 22 pp.
- Mycoo, M., and Sutherland, M. 2010. Climate change and physical development threats, challenges and adaptation responses in coastal communities: Grande Riviere, Trinidad. C-Change Working Paper Series. No. 33. 22 pp.
- Sutherland, M. and Seeram, A. 2011. Sea level rise modeling in support of socioeconomic impact analysis: Grande Riviere, Trinidad and Tobago. C-Change Working Paper Series. No. 34. 12 pp.
- Tienaah, T., Nichols, S., Forbes, D., and Sutherland, M. 2011. Mobilizing local knowledge to bridge information gaps in climate change adaptation planning. C-Change Working Paper Series. No. 35. 9 pp.
- Sookram, S., and Sutherland, M. 2011. Grande Riviere, Trinidad and Tobago: The vulnerability of a coastal community to sea level rise. C-Change Working Paper Series. No. 36. 24 pp.
- Mycoo, M., and Sutherland, M. 2011. New approaches to sustainable development of coastal rural communities and economies: climate change and sea level rise in Grande Riviere, Trinidad. C-Change Working Paper Series. No. 37. 21 pp.
- Sutherland, M. 2010. Towards mitigating climate change threats to small island states coastal communities: Geomatics contributions in a holistic governance approach. C-Change Working Paper Series. No. 38. 12 pp.
- Clarke, A. 2012. Canada-Caribbean communities' schools curricula project: Developing C-Change lesson plans. C-Change Working Paper Series. No. 39. 18pp.

8a. Conference proceedings

- Clarke, J., Mercer Clarke, C., and Lane, D.E. 2010. Proactive adaptation to climate change: Building bridges between science and local government. Proceedings of the BIOECON 12th annual conference From the Wealth of Nations to the Wealth of Nature: Rethinking Economic Growth, Venice, Italy, September 27-28, 2010. 16p.
- Hatcher, S., Forbes, D. and Manson, G. 2011. Coastal hazard assessment for adaptation planning in an expanding Arctic municipality. Submitted to the Sustainable Development of Coastal Communities: Challenges and Solutions International Conference, Port-of-Spain, Trinidad & Tobago, 1-3 June 2011. C-Change Working Paper Series. No. 23. 15 pp.
- Lane, D.E., and Watson, P.K. 2011. Managing adaptation to environmental change in coastal communities: Canada and the Caribbean. Proceedings of the 11th Annual Conference of the Sir Arthur Lewis Institute of Social and Economic Studies (SALISES), St. Augustine Campus, University of the West Indies, March 24-26, 2010. 16p.



- Lane, D.E. 2010. Toward Adaptive Fisheries Management: Is the current fisheries management toolbox sufficient to address climate change? Paper presented to the International Workshop on "The Economics of Adapting Fisheries to Climate Change", OECD Committee for Fisheries and the Fisheries Policies Division, 10-11 June, 2010 in Busan, Korea. 41p.
- Matthews, R., Vadeboncoeur, N. (*in review*) A New Institutional Approach to Adaptation Research: Involving Social Science in the Study of Climate Change. University of the West Indies, Trinidad.
- Rak, A., Coleman, D., and Nichols, S, 2012. Legal liability concerns surrounding Volunteered Geographic Information applicable to Canada. Completed paper submitted to "Enabling Government, Industry and Citizens" Global Geospatial Conference 2012, Quebec City, May 14-17 (currently under review).
- Sutherland, M. and Nichols, S. 2010. Further Steps toward the Administration of Marine Spaces. Published in the Proceedings of the International Federation of Surveyors' (FIG) Congress, Sydney, Australia, May 2010, 11 p.
- Sutherland, M. and Nichols, S. 2010. St. Margaret's Bay Marine Cadastre Prototype Case Study. In Spatial Planning in Coastal Regions: Facing the Impact of Climate Change. FIG Publication No. 55, International Federation of Surveyors, Copenhagen, pp. 47-49.
- Sutherland, M. and Nichols, S. 2009. Developing a Prototype Marine Cadastre for Chedabucto Bay, Nova Scotia. Published in the Proceedings of the International Federation of Surveyors' (FIG) Working Week, Eilat, Israel, May, 11 pages..



8b. Conference presentations

The following table presents a list of presentations to date, as well as (tentative presentations for 2012) that members of the C-Change Project have made in various areas, with reference to the C-Change/ICURA project. Most presentations listed below are accessible on our website <http://www.coastalchange.ca/index.php/documents/presentations> as PowerPoint files converted to PDF files for download. Full authorships, affiliations and event details are obtainable on download from the C-Change Web. If an asterisk (*) is indicated in the File Type column, the files are not yet available.

Date	Presentation	File Type
Mar 2012	Abstract accepted for Conference on 'Planet Under Pressure', London, UK. <ul style="list-style-type: none"> <i>Addressing five grand challenges for islands at risk.</i> 	*
Mar 2012	Abstract accepted for UCCI/ICCI Caribbean Conference 50-50 Surveying the Past, Mapping the Future. Cayman Islands Mar 2012 <ul style="list-style-type: none"> <i>Weathering the Storm: Building a Canada-Caribbean community of practice on coastal adaptation to climate change.</i> 	*
Apr 2012	Abstract submitted to IPY 2012 Conference 'From Knowledge to Action', Montreal, Apr 2012 <ul style="list-style-type: none"> <i>Changing exposure to coastal hazards in Iqaluit, Nunavut.</i> 	*
Dec 2011	A Presentation to Richmond County Council, Isle Madame, Dec 12, 2011 <ul style="list-style-type: none"> <i>C-Change Updates</i> 	PDF
Nov 2011	A presentation made to Canada-Nunavut Geoscience Office, Government of Nunavut (Environment), Aboriginal Affairs and Northern Development Canada, and Nunavut Research Institute, Iqaluit, NU, Nov. 24, 2011 <ul style="list-style-type: none"> <i>Coastal hazards and sea-level change in Nunavut communities and ports.</i> 	*
Nov 2010	Invited speaker (D. Lane) to International Forum for Ecosystem: Adaptability Science III Adaptability of Human Societies to Perturbation. Tohoku University, Sendai, Japan <ul style="list-style-type: none"> <i>Managing Adaptation for Coastal Communities subject to Storm Surge and Sea Level Rise in Canada and the Caribbean Region</i> 	*
Oct 2011	A presentation made to the Third Age Centre, St. Thomas University, Fredericton, NB, 13 October 2011 <ul style="list-style-type: none"> <i>Sea-level rise and coastal impacts of climate change.</i> 	*
Sep 2011	Presentations made at LOICZ Open Science Conference, Session A4, Yantai, China, September 2011 <ul style="list-style-type: none"> <i>Physical Basis of Vulnerability in Small Island Developing States</i> <i>Managing Adaptation to Environmental Change in Small Islands and Analogous Coastal Communities</i> 	PDF PDF
Jul 2011	Presentations made at the Annual Congress of the Canadian Society of Landscape Architects, Iqaluit, Nunavut, July 15 2011 <ul style="list-style-type: none"> <i>Coastal hazards and sea-level change in Nunavut communities</i> <i>Coastal hazards in a changing Arctic municipality: Iqaluit, NU (Canadian Society of Landscape Architects</i> 	*
Jul 2011	Presentations made at the 2011 Coastal CURA Conference, Halifax, NS	



Date	Presentation	File Type
	<ul style="list-style-type: none"> • <i>Climate Change and Physical Development Threats, Challenges and Adaptation Responses in Coastal Communities: Grand Riviere, Trinidad.</i> • <i>Tourism, Sea Turtles and the Environment as a Catalyst for Developing Sustainable Communities: The Grande Riviere Case.</i> 	PDF PDF
May 2011	C-Change Partner Update, Arichat	PDF
Apr 2011	C-Change Partner Update, Charlottetown	PDF
Apr 2011	Presentation made to the International Center for Land Policy Studies and Training, Taiwan, April 18-22, 2011 <ul style="list-style-type: none"> • <i>Coastal Zone Management/Ocean Governance with Special Reference to Sea Level Rise</i> 	*
Mar 2011	Fishermen and Scientists Research Society 18th Annual Conference: <ul style="list-style-type: none"> • <i>C-Change Poster Presentation</i> 	PDF
Feb 2011	Presentation made to the Workshop on Nunavut Climate Change Partnership, Iqaluit, 15 February 2011 <ul style="list-style-type: none"> • <i>Coastal hazards and sea-level change predictions in Nunavut communities</i> 	*
*	* <ul style="list-style-type: none"> • <i>Coastal hazard mapping in an expanding Iqaluit –ArcticNet Annual Science Meeting 2010</i> 	* *
	<ul style="list-style-type: none"> • <i>Arctic Coastal Dynamics Under Changing Relative Sea Level and Environmental Forcing, Canadian Arctic Archipelago, Northwest Territories and Nunavut – Presented to the Geological Survey of Canada</i> 	*
Nov 2010	Presentation to IDRC by C-Change Caribbean Team	PDF
Nov 2010	Presentation to IDRC by C-Change Canada Team	PDF
Oct 2010	Presentation made at the C-Change Partners Meeting, Ottawa, ON	PDF
Sep 2010	Presentation made at the BIOECON Conference in Venice, Italy, Sep 2010 <ul style="list-style-type: none"> • <i>Proactive Adaptation to Climate Change: Building Bridges Between Science and Local Government</i> 	PDF
Jul 2010	Presentations made at the 2010 Coastal Zone Canada Association Annual Conference, Charlottetown, PEI <ul style="list-style-type: none"> • <i>The C-Change Project Workshop</i> 	PDF
	<ul style="list-style-type: none"> • <i>Spatial planning and legal interests: Lessons from the St. Margaret’s Bay, Nova Scotia marine cadastre plot</i> 	*
	<ul style="list-style-type: none"> • <i>Coastal Planning and Governance Charette</i> 	
Jun 2010	Presentation made at the OECD International Workshop on The Economics of Adapting Fisheries to Climate Change, Busan, Korea - June 10-11, 2010 <ul style="list-style-type: none"> • <i>Toward Adaptive Fisheries Management: Is the current fisheries management toolbox sufficient to address climate change?</i> 	PDF
Jun 2010	Presentation made to the International Center for Land Policy Studies and Training, Taiwan,, May 3-7, 2010 <ul style="list-style-type: none"> • <i>Land administration and special issues in land policy, including coastal zone management and aboriginal rights</i> 	*
May 2010	Presentation made to Dept. of Geomatics, National Central University, Jhongli, Taiwan, May 11, 2010 <ul style="list-style-type: none"> • <i>The Role of Geomatics in Coastal and Ocean Governance</i> 	*
Apr 2010	Presentation made at the C-Change Canadian Partners Meeting, Ottawa, ON	PDF
Apr 2010	Statistics Canada Socio Economic Conference 2010, Gatineau, Quebec	



Date	Presentation	File Type
	<ul style="list-style-type: none"> <i>Multicriteria Evaluation of Vulnerable Coastal Communities to Climate Change</i> 	PDF
Mar 2010	Presentations made at C-Change Partners meeting, SALISES, St. Augustine, Trinidad & Tobago <ul style="list-style-type: none"> <i>Grande Riviere Community Study Status Update and Work in Progress</i> <i>Managing Adaptation to Environmental Change in Coastal Communities: Canada and the Caribbean</i> 	PDF PDF
Dec 2009	C-Change Canadian Co-applicants' Meeting	
Sep 2009	Presentation made to the International Center for Land Policy Studies and Training, Taiwan, September 14-18, 2009 <ul style="list-style-type: none"> <i>Coastal Zone Management/Ocean Governance with Special Reference to Sea Level Rise</i> 	*
Jul 2009	ICURA Start-Up Preliminary Discussion with IDRC	PDF
Jun 2009	ICURA Start-Up Preliminary Discussion	PDF
Jun 2009	Presentations made at "The Rights Stuff" Community Marine Cadastre Workshop – St. Margaret's Bay Demonstration Project for a Marine Cadastre, July 6 2009 (Nichols, Sutherland and Tienaah)	*
Oct 2008	C-Change: Managing Adaptation to Coastal Environmental Change, Presentation to Richmond County Council	PDF

9. Photograph, film

The C-Change Website and the Social Networking site ("Facebook" photo postings by C-Change researchers, collaborators, partners, and research assistants) contains collections of photos documenting storm events in C-Change communities in 2009, 2010 and 2011, as well as photos on C-Change activities, e.g., local and regional research team meetings, integrating meetings, conferences attended, and community meetings, visits, and facilities tours.

Photos are also accessible from the C-Change website, www.coastalchange.ca, in the "Gallery" section accessible from the main "home" page.

The Facebook URL link to view these photos is: <http://www.facebook.com/#!/media/albums/?id=282668675785>

The following table itemizes the Photo Album listing from the C-Change Facebook site and notes the album title, dates, and number of photos in each album. To date there are over 400 photos that have been compiled at part of the C-Change Albums posted and noted in the table below.

Album Number	Title of Album	Date	Numbers of photos
1	Centre de Recherche Marine, Université Sainte Anne, Petit de Grat, Isle Madame	Dec 13, 2011	34
2	C-Change Canada Meetings with Community Partners, November 2011	Nov 24-26, 2011	17
3	Ongawa, Japan – November 2011	Nov 2011	14
4	Wall photos	ongoing	7



Album Number	Title of Album	Date	Numbers of photos
5	Georgetown, Guyana Presentation	Nov 25, 2011	6
6	International Conference Centre, Japan – November 2011	Nov 2011	2
7	Iqaluit, NU, June 2011	Jun 2011	30
8	SALISES Conference, Trinidad, June 2011 (Album 2)	Jun 1-3, 2011	37
9	SALISES Conference, Trinidad, June 2011 (Album 1)	Jun 1-3, 2011	44
10	Isle Madame Surveying July 2011	Jul 2011	34
11	Surveying Crab Plant July 2011	Jul 2011	10
12	2011 World Conference on Natural Resource Modeling	Jun 14-17, 2011	17
13	Isle Madame, by G. Bennett – DIMA Board Member	Winter and Spring 2011	10
14	Hurricane Igor hits Newfoundland Sept. 21, 2010	Sep 2010	15
15	December 2010 Storm Surge in Charlottetown	Dec 2010	14
16	Meeting May 13, 2010 (Gibsons, BC)	May 13, 2010	8
17	Coastal Zone Canada Conference 2010, July 25-29, 2010	July 25-29, 2010	10
18	Belize Snapshots	various	10
19	Grande Riviere Community Photos	various	31
20	Ottawa Meeting May 10-11	May 10-11, 2010	2
21	Island of Bequia	various	5
22	Grande Riviere Beach	March 22-23, 2010	15
23	11 th SALISES Conference, Port-of-Spain, Trinidad	March 24-26, 2010	6
24	Trinidad Photos September 2008 C-Change Meeting	September 2008	14
25	C-Change Sites	various	18