



Vulnerability and Adaptation to Climate Extremes in the Americas

Summer 2012

Inside this Issue

Page 1

Director's Message

Page 2

Fieldwork Update
by Amber Fletcher

Page 3

Researcher Profile: Elaine Wheaton
Student Profile: Erin Knuttila

Page 4

Personal Experience In the field
by Bruno Hernani

About VACEA

The overall objective of VACEA is to improve the understanding of the vulnerability of rural agricultural and indigenous communities to shifts in climate variability and to the frequency and intensity of extreme climate events, and to engage governance institutions in Canada, Argentina, Brazil, Chile and Colombia in enhancing their adaptive capacity to reduce rural community vulnerability.

The interdisciplinary research program will have three major themes:

- 1) Regional Vulnerability Assessment,
- 2) Climate and Agro-Ecological Variability,
- 3) Integrative Risk Analysis.

Learn more on the VACEA website:
www.parc.ca/vacea

Director's Message

The first year of the VACEA project was completed at the end of April. During Year 1, we created frameworks for managing the project, working with external partners, and using common methods among the research teams in the five countries. We began gathering primary data by meeting with stakeholders in the communities and collected large amounts of data from other sources. Internal reports were written to document the outcomes of stakeholder meetings and to describe the physical and social characteristics of the study communities. A 21-page report was submitted to IDRC documenting our progress after one year.

Over the past several months one focus of the Canadian research has been the community vulnerability and governance assessments. This work has involved a large number of interviews with rural residents in and around Rush Lake and Shaunavon, Saskatchewan, and Pincher Creek and Taber, Alberta. The interviews were conducted by a very competent and dedicated team of graduate students: Amber Fletcher, Bruno Hernani, Erin Knuttila and Jessica Vanstone. In the newsletter, they recount their experiences in the communities this past spring and early summer, and provide some insights and preliminary observations. We also profile Erin.

Another major and time-consuming research activity has been compiling and documenting a large amount of weather and water data. This database is required for our modeling of recent and future climate variation and the consequences for water supplies. Stefan Kienzle in Lethbridge and Elaine Wheaton in Saskatoon are leading this work. There is a feature about Elaine in this newsletter.

Currently we are busy preparing for a full week of meetings to be held at the Crowsnest Mountain Resort in the headwaters of the Oldman River basin, one of our two Canadian study areas. About eleven of the Southern American researchers and collaborators are able to join us. A 2.5-day VACEA project meeting will begin on September 12. It will include a full-day field tour of the upper Oldman River Basin. September 9 through 11, immediately prior to the project meeting, researchers, and invited partners and speakers, will participate in a workshop to discuss "Knowledge Mobilization at the Science/Policy Interface". The results from this workshop will be the basis for a knowledge communication and dissemination strategy for the VACEA project. This strategy will be very necessary and important as we approach the later years of the project when the focus will be delivering the science to the communities and our external partners.

Dave



VACEA Fieldwork Update

By Amber Fletcher

The year 2012 has been an interesting and productive one for the VACEA graduate student researchers. Interviewing was completed in the small community of Rush Lake, Saskatchewan, during the winter months. We interviewed 21 people from the community, which has a total population of only 50, and its surrounding area. This high response rate is a testament to both the generosity of the community and the relevance of the VACEA project's focus. In March, we were honoured to be invited to attend the annual ratepayers' dinner in the Rural Municipality of Excelsior and to provide a presentation on our research. Accompanied by Dr. Dave Sauchyn and Dr. Polo Diaz, we presented a summary of our research process and some initial observations. The supper provided us with another opportunity to answer questions about the project and, importantly, to say "thank you" to all the residents who shared their experiences with us.

From late May to mid-June, three student researchers (and one dog) moved to the community of Pincher Creek, Alberta, a beautiful setting located just between the mountains and the prairie. The project was met with almost overwhelming interest from the community, whose members are currently negotiating a delicate balance between environment and industrial development. In total, we interviewed 53 people in the Pincher Creek area. Participants included those working in governmental or non-governmental organizations, retirees and country residents, environmentalists, ranchers, and of course, environmentalist ranchers. Pincher Creek is a dynamic community with a strong network of local organizations and producer groups, which can be crucial to a community's resilience during times of weather-related crisis or stress.

Late June to early July was a good time to visit the community of Shaunavon. We spent several weeks living just west of this prairie community, which also welcomed us with great interest. We interviewed 43 members of the community and its local governance institutions, and learned a great deal about the community's strategies for adapting to climate extremes, particularly drought. Community members emphasized the centrality of informal networks to their adaptation strategies, with neighbours often helping each other in the face of drought or wildfire. We also had a first-hand experience with extreme weather events, as several tornado warnings were issued for the area during our visit.

We spent several weeks of July living near Taber, Alberta. Although the corn had not yet begun, we were able to take in some trick riding, saddle bronc, and also some mutton-busting at the Taber Pro Rodeo, and saw a great show of community pride at the rodeo parade. Our time in Taber wasn't all play, however: we interviewed 43 people from the community and local organizations, which extended from the MD of Taber into the northern portion of County Lethbridge, where we were able to view the effects of locally implemented Beneficial Management Practices and to tour some new innovations in the Intensive Livestock Operation (ILO) sector.

Throughout the course of the fieldwork, we interviewed a grand total of 140 participants from a variety of backgrounds. Thank you to everyone who participated in the research or who helped us out with finding local contacts, spreading the word, or even offering tips about what to see and do in the community. We are confident that the results of this research will be helpful to communities and governments alike, and we look forward to bringing the results back to the communities in the near future.



Photos from the field courtesy of Bruno Hernani



Researcher Profile: Professor Elaine Wheaton

Elaine is climate scientist, an adjunct Professor at the University of Saskatchewan (Geography and Planning, School of Environment and Sustainability) and Researcher Emeritus at the Saskatchewan Research Council (SRC). She is a co-investigator on the VACEA research team. She held the Distinguished Scientist position at the SRC from 2008 to 2011, and was a Senior Research Scientist previous to this position. She is a Fellow of the Royal Meteorological Society and the Royal Canadian Geographical Society. Elaine worked on the Board of Trustees for the Canadian Foundation for Climate and Atmospheric Sciences and the Canadian Institute for Climate Studies, as well as many advisory boards. She holds a MSc in climatology and Bachelor of Science (High Honours and Great Distinction) in physical geography from the University of Saskatchewan. She has co-supervised several graduate students at the Masters and PhD levels.

Elaine's research interests are climate change, impacts, adaptations, hazards (especially droughts and excessive moisture) and vulnerability. Her research topics include: the 1999-2005 Canadian drought, its various impacts and adaptations; climate impacts on agriculture and water resources; vulnerabilities and adaptations of rural communities to drought; causes of Canadian prairie droughts; biomass and wind erosion impacts of droughts; and climate change scenarios. She has given many invited presentations on such topics in Canada and internationally.

Photo provided courtesy of the Saskatchewan Research Council Elaine's awards include the 2007 Nobel Peace Prize certificate for substantial contributions to the work of the Intergovernmental Panel on Climate Change, Wolbeer Award for contributions to water resources research, Distinguished Scientist appointment at the Saskatchewan Research Council, Alberta Trade Book of the Year, and the YWCA Science and Technology award. She is widely published in referred science journals and the author of the award-winning book, "But it's a Dry Cold! Weathering the Canadian Prairies."



Student Profile: Erin Knuttila

Born and raised in Saskatchewan, Erin has a B.A. Honours in Sociology from the University of Saskatchewan (1999) and a M.A. in Sociology from the University of Regina (2006). During her time as a master's student, Erin was involved as a research assistant on PARC's International Adaptation to Climate Change Project. Erin has also taken several courses in Environmental Management from the University of Toronto and courses in conservation biology at the University of Regina. Erin is currently working towards a PhD in Sociology under the supervision of Dr. Polo Diaz. In her current studies, she is combining her sociological background with issues related to climate extremes and the environment focusing specifically on issues related to gender.

Experience in the field *by Bruno Hernani*

A total of 140 interviews were carried out with a great enthusiasm from the participants of the four communities in Alberta in Saskatchewan. The fieldwork included two sets of interviews. The Community Vulnerability Assessment (CVA) has the objective of developing a systematic understanding of the present and past vulnerabilities of rural actors to extreme climate events. On the other hand, the government assessment is an exploration of the entire network of actors, institutions, relationships, organizations, and entities involved in managing the resources of water and responding to climate variability, hazards and extreme events.

I personally was involved in the both sets of interviews with a large and friendly response from the participants for both the CVA and the government assessments. I had the opportunity to listen interesting experiences from a large range of different people, including small and large producers, business people, local government agencies, and residents. Mainly, interviews had a duration of an hour. However, in some cases, interviews lasted three and even four hours showing a great engagement of the participant in sharing experiences and stories related to extreme climate events such as flooding and drought. These long interviews were also followed by short tours in the fields, concluding the interviews with a final explanation in the actual location of the occurrence of the events.

I had the opportunity to closely learn about climate extreme events that affect farming and ranching activities, and rural life in general. It was very valuable spending time with participants in the field, their homes, work places and coffee shops to strengthen the systematic understanding of present and past vulnerabilities in rural areas. Some of my own experiences increased my understanding about local knowledge, which has been evolving over several decades. For instance, in Taber, I had the opportunity to closely learn about the technical implications of irrigation systems and how they have evolved over time to constantly improve to use water more efficiently. In Pincher Creek, I witnessed the strong connection the residents have with the local challenges and opportunities, always looking for the better of the overall community. In Shaunavon, it was great to hear about the strong cooperation that exists among the residents to deal with extreme climate events. Our fieldwork in Shaunavon was extended to the point to experience a large storm with several tornado warnings. In Rush Lake, it was great to be welcomed with a warm hospitality and the openness to share experiences about their adaptation to ongoing changes and learn also about the strong cooperation that exists in the community.

Overall, it was a very positive fieldwork with an extensive amount of information collected. The cooperation of the four communities was very valuable to accomplish this step and it will certainly be valuable for the next steps of the VACEA project and for its completion. On behalf of the research team, I would like to thank to all the participants involved. Thank you for your vivid warmth and great welcoming attitude toward the research team. We look forward to keep working with you.



Photos from the field courtesy of Bruno Hernani

Get more information about
the project on the VACEA
website: www.parc.ca/vacea

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