ASIA-PACIFIC NETWORK FOR GLOBAL CHANGE RESEARCH

CAPaBLE Programme Final Report

Project Reference Number: CBA2016-05SY-Kang

Facilitating the attendance, interaction and training of young and developing nation scientists from Asia-Pacific at the International Conference on Regional Climate – CORDEX 2016 (ICRC – CORDEX 2016)

The following collaborators worked on this project:

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3. Boram Lee, World Climate Research Program, Geneva, Switzerland, blee@wmo.int
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Final Report submitted to APN

OVERVIEW OF PROJECT WORK AND OUTCOMES

1. Project Information

Project Duration	**:**	1 year
Funding Awarded	**:**	USD 25,000
Key organizations involved	**:**	Prof. Fredolin Tangang from the Universiti Kebangsaan, Malaysia, Prof. W.J. Gutowski from the Iowa State University, Iowa, USA, Dr. Boram Lee from the World Climate Research Program, Geneva, Switzerland, and Prof. Erik Kjellström from the Swedish Meteorological and Hydrological Institution, Norrköping, Sweden are involved in this project.

2. Project Summary

The International Conference on Regional Climate – CORDEX 2016, held in Stockholm, Sweden on 17-20 May 2016, was jointly organized by the Swedish Meteorological and Hydrological Institution and the World Climate Research Programme (WCRP), and was attended by over 300 participants from 38 countries. Thanks to the conference sponsors such as APN, about 90 participants were supported financially to attend the conference. Participation via web streaming and Twitter made it possible for the community at large to participate and interact remotely with the conference and its participants.
The conference brought together the international community of regional climate scientists and stakeholders with a particular emphasis on the added value, vulnerability, impact and assessment issues and the use and future of Regional Climate information and CORDEX results. This landmark event offered a platform for addressing the following key topics:
(1) CORDEX in Action: Achievements and lessons learned, status and future perspectives;
(2) Benefits of Downscaling, including added value and distillation issues;
(3) Frontier downscaling tool including human-climate interactions and ESD;
(4) Impacts and Applications with extremes and, coupled systems and the path from observations over models to applications;
(5) Domain specific and cross-domain issues.

Keywords: CORDEX, Added Value, Vulnerability, Impact and Adaptation, Policymaking.

3. Activities Undertaken

Approximately 120 applications for financial support to attend the conference were received by the organizers, whereof 46 came from the Asian-Pacific region. A review process to evaluate these applications was established which was carried out by a panel of experts representing the domains and areas of expertise within CORDEX. The panel, chaired by the CORDEX co-chairs, assessed the applications based on three major criteria:
1) Scientific Background (based on CV and supporting letters for each candidate applicant);
2) Scientific quality / relevance (based on the submitted abstract);
3) Scientific Impact (judged according to abstract and applicant provenience).

From the total pool of applicants, about 90 were identified as eligible to receive financial support to attend the conference. Thirty-five of the final award recipients were from the Asian-Pacific Region. Fourteen of them were supported directly by the APN grant and the remaining selected candidates were sponsored by the SMHI, WCRP and the other co-sponsors of the conference.

As a part of the conference activities, a competition on best poster presentations by students and early-career scientists was organized. This competition and evaluation process was coordinated by an independent panel of experts. The scientific content and presentation skills of authors/speakers were the base for judgement which was carried out by a group of independent judges chosen from the conference participants with the appropriate scientific expertise. The evaluation results were then synthesized by a smaller group. The best posters were identified and recognized at the last day's summary plenary session. The award winners (see http://icrc-cordex2016.org/index.php) received a "Best Poster Award" certificate, and a complimentary handmade glass bowl.

4. Key facts/figures

The conference results in short:

- Jointly organized between the WCRP and the SMHI
- Attendance: 300+ participants from 38 countries
- Featured scientific results from CORDEX – Phase II
- Conference conclusions will form the basis for the continued development of CORDEX CORE, CORDEX Science Challenges and CORDEX contributions to the next IPCC special reports and assessment report
- ICRC-CORDEX 2106 served as an excellent platform for Asian-Pacific attendees to interact with their peers and the wider CORDEX network and to contribute to the evolution of CORDEX.

5. Potential for further work

The CORDEX goals to better understand relevant regional/local climate phenomena, their variability and changes, to evaluate and improve regional climate downscaling models and techniques, to produce coordinated sets of regional downscaled projections worldwide and to foster communication and knowledge exchange with users of regional climate information requires platforms for communication and exchange and the conference proved to be a very efficient such. Furthermore, in line with this the International Project Office for CORDEX was established in 2015. The office will aid in the vision to advance and coordinate the science and application of regional climate downscaling through global partnerships and in this together with the CORDEX community continue to engage conference participants and others in CORDEX future activities. In turn the CORDEX community anticipates that conference participants including the APN funded ECS will contribute in networking and engaging their peers and colleagues, thus having a sustained impact on all CORDEX regions. The intent of CORDEX leadership is to regularly convene such a conference but with enough time in between to allow sufficient progress on the scientific and technical priorities.

6. Publications

In addition to the coverage of the conference by the media, web and social networks, an extensive conference report is available from the conference web page at http://www.icrc-cordex2016.org/ as well as individual session notes. All presentations and abstracts are available at the same web site. In addition, videos of all plenary and several other sessions have been published, making it possible to exploit them as training or teaching material. During the conference numerous papers were discussed and initiated and specific editions are expected to evolve.

7. Awards and honours

N/A

8. Pull quote

N/A

9. References

- APN Fourth Strategic Plan (2015-2020), 20pp
- Third International Conference on Regional Climate, ICRC-CORDEX 2016, http://www.icrc-cordex2016.org/index.php.

10. Acknowledgments

We would like to acknowledge the Bolin Centre and The Swedish Research Council Formas for their tremendous contribution to the success of the conference. We thank the scientific committee of the conference who put a lot of effort into developing the conference programme and identifying invited speakers and session chairs. We thank the young scientist volunteers who supported the oral and poster sessions. We thank the expert panels who took o the evaluation of abstracts and best posters. We acknowledge the in-kind web and logistics support from Catherine Michaut, IPSL. Last but not least, we are truly grateful for the financial support from the APN in particular, and from FORMAS, EUMETSAT, ESA, ECRA that made the participation of more than 300 scientists from 38 countries possible. This APN grant was implemented by different collaborating institutions:

National Institute of Meteorological Research, Korean Meteorological, Jeju, South Korea, World Climate Research Program (WCRP), Geneva, IOWA State University, Iowa, USA, Universiti Kebangsaan, Malaysia, Swedish Meteorological and Hydrological Institution, Norrköping, Sweden.

A final word of gratitude goes to the CORDEX community at large and all of the participants, who made this conference an enjoyable and memorable event.

Table of Contents

1. Introduction

Policy and decision makers need information about climate, climate change and impact and vulnerability assessments at the right scales and communicated in an understandable way to make sure the knowledge is used intelligently for adaptation, mitigation and risk management. The understanding of the response of regional and local climate systems to global climate, and the influence of the regional and local systems on the global system is in focus in the Coordinated Regional Climate Downscaling Experiment (CORDEX) community. To predict the future changes and to analyze past changes and trends, earth/climate system models are the primary tools. Global scale models are however too coarse to resolve the questions that decision makers encounter daily why advanced downscaling methods are required to translate this coarse global scale information into finer and more adapted regional and local information.

The World Climate Research Program (WCRP) initiated the worldwide effort CORDEX in 2009 to address these issues. This complements the corresponding CMIP global scale effort aiming at supporting climate assessments such as the IPCC.

The International Conference on Regional Climate – CORDEX 2016, held in Stockholm, Sweden 17-20 May, was jointly organized by the Swedish Meteorological and Hydrological Institution and the World Climate Research Programme (WCRP), and was attended by over 300 participants from 38 countries. The attendance of about 90 participants was made possible by the financial support from conference sponsors such as the APN. Remote participation and interaction with the conference and the audience via web streaming and Twitter Questions and Answers was available for the community at large.

The conference offered a platform for scientists, policy makers and the full spectrum of end-users from around the world to interact with the CORDEX research communities from the

fourteen domains over all continents and thus to discuss and develop research on high resolution climate information and its applications to vulnerability, impacts and adaptation on the appropriate regional and local scales. The participation of early-career scientists from around the world and particularly so from developing regions is a key to future success in order to foster capacity development, training and knowledge exchange as well as to offer an opportunity to expand or build new collaborations.

The **International Conference on Regional Climate - CORDEX 2016** laid ground for enhanced cooperation and exchange as well as dialogue and discussion among the diverse international regional climate downscaling, and vulnerability, impact and adaptation research communities. Specifically, the conference aimed to:

- bring together the international regional climate research community, focusing on high resolution climate information and its applications to vulnerability, impacts and adaptation and the full spectrum of potential end users of regional climate information;
- offer a platform for further capacity development, training and knowledge exchange for developing nation scientists;
- offer an opportunity to expand existing, or build new, collaborations;
- demonstrate success both broadly across the discipline and through case studies ('CORDEX in Action');
- facilitate cross domain collaboration around CORDEX Challenges with potential for keynote speakers to address more broadly one of the CORDEX challenges;
- launch, discuss and develop future plans (including Flagship Pilot Studies, Challenges, and Coordinated Output for Regional Evaluations).

2. Methodology

WCRP, SMHI and CORDEX continuously work with capacity building on multiple scales and are engaged in training the next generation of climate experts. The conference thus had a special focus on active participation of students and early-career scientists, where many of those are active in regions highly vulnerable to climate change and variability.
To ensure worldwide representation in this major international climate conference much effort was put into fund raising for travel support. WCRP, SMHI, APN and other conference sponsors thus joined their efforts in providing support for aspiring early-career scientists and students where the conference served as a forum for them to initiate new partnerships in their research/education and to gain insight into the challenges of regional climate science and applications on multiple scales as well as the overall policymaking implications.

Grants were assigned based on the financial need, scientific background and scientific quality/relevance/impact of the submitted abstracts to the conference. Priority was given primarily to:

- Early-career Scientists: postgraduates and researchers who received their highest degree in 2011 or later
- Scientists from emerging and developing economies

Second priority was for Students: those pursuing their graduate studies (MSc, PhD).

In order to qualify for financial support, the applicant had to:

1. Submit an abstract of a paper to the conference, of which he/she was the principal author
2. Submit a complete financial support application.

Financial support applicants had to provide and submit the following information:

- Summary of CV (education, professional experience, selected publications)
- A short motivation statement (e.g. expected benefits from attending the conference)
- Pdf files containing the signed recommendation letter from the supervisor or director of the host laboratory, a full CV, and any evidence of partial support to cover travel and/or accommodation expenses.

The number of financial support awards was limited why applicants were recommended to provide all useful information and supporting documentation to make their case. For grantees it was mandatory to attend the entire conference in order to benefit from the financial support which covered the registration fees and reasonable travel and accommodation expenses or parts of those.

The announcement for applications was posted on the conference webpage with a deadline set for 30 November 2015.

About 120 applications for financial support to attend the conference were received within the deadline; about 46 of them were from the Asian-Pacific region. A review process to evaluate these applications was established and was carried out by a panel of experts representing the domains and areas of expertise within CORDEX. The panel was chaired by the CORDEX co-chairs. The review process was completed by the beginning of February 2016 and the applicants were notified on the results of the process by 5 February.

From the total pool of applicants, the evaluation panel identified about 90 as eligible to receive financial support to attend the conference based on the available budget. Thirty-five of the final award recipients were from the Asian-Pacific Region. Fourteen of them were supported directly by the grant from APN and the remaining selected candidates were sponsored by the SMHI, WCRP and the other co-sponsors of the conference.

The financial support grantees had their fees waived automatically. Those who were not selected had the possibility to enjoy the early bird rate by paying before 17 March 2016 or the student rate (where applicable) viable until the registration deadline or to participate remotely via web-streaming and to interact via Twitter.

As a part of the conference activities, a best poster presentation competition was organized for students and early-career scientists. Scientific content and presentation skills of authors/speakers were the base for judgement which was carried out by a group of independent judges chosen from the conference participants with the appropriate scientific expertise. A smaller group then synthesized the evaluation results. The best posters were identified and recognized at the last day's summary plenary session. The three award winners (see http://icrc-cordex2016.org/index.php) out of the 45 that entered the competition received a "Best poster Award" certificate, and a complimentary handmade glass bowl.

3. Results & Discussion

The conference brought together the international community of regional climate scientists and stakeholders with a particular emphasis on the added value, vulnerability, impact and assessment issues and the use and future of Regional Climate information and CORDEX

results. The first day of this important gathering featured an Opening Session with the participation of Jan Olsson, the Swedish Environment Ambassador, where a general discussion on challenges related to climate and climate change was discussed. In the following Plenary Session on CORDEX Achievements and lessons learned the future of CORDEX was the main issue and among the speakers were IPCC WGI and WGII co-chairs talked about IPCC needs and the best use of CORDEX. Distillation of climate information and how to communicate tailored messages at the appropriate scales to users was a recurring theme during the whole week.

The following days were organized in parallel sessions with four major themes:

- Benefits of downscaling, including added value and distillation issues;
- Frontier downscaling tools including human-climate interactions and empirical-statistical downscaling;
- Impacts and Applications with extremes and, coupled systems and the path from observations over models to applications;
- Domain-specific and cross-domain issues.

This four-day conference dedicated to regional climate science and its added value, vulnerability, impact (VIA) and assessment issues clearly demonstrated, through the broad international presence of speakers and poster presenters, the vast achievements of CORDEX where without any doubt CORDEX results are relevant for and required by the VIA communities. CORDEX is a global framework where scientists around the world cooperate to advance and coordinate science and application of regional climate downscaling. This has led to common protocols both in the development of high-resolution Regional Climate Model (RCM) and empirical statistical downscaling (ESD) projections, and the inter-comparison of these projections as well as in how to archive and make accessible the results.

Valerie Masson Delmotte and Filippo Giorgi during the first Plenary Session.

A snapshot of the poster session

The conference oral presentations, the pictures and videos are all accessible from the conference webpage http://icrc-cordex2016.org/index.php. All plenary sessions were broadcasted on-line via web streaming, thereby allowing people not able to attend the conference to follow the presentations and discussions remotely. A twitter account was setup to allow remote questions to be forwarded to the speakers and audience in real-time. Poster sessions throughout two of the science days facilitated interaction amongst the participants especially between the students and early-career scientists (ECS) and the more senior researchers.

The program featured a special CORDEX-Asia and Australasia session 'Regional monsoon hydrological cycle over Asia and Australasia' chaired by J. Sanjay, F. Tangang and J. Evans. More information on the session can be found here http://www.icrc-cordex2016.org/index.php/programme/parallel-sessions-d/asia-and-australasia-monsoon-session.

A special event for students and ECS' was organized in order to promote the networking and the mentoring needed for those who are beginning a career in regional climate. Focus of this event, occurring on the eve of Wednesday the 17th May, was on science communication – as Asher Minns expressed it 'How you are heard instead of what you are saying'. The students, early-career scientists and senior participants were invited to try to explain to their neighbors what their research is about in a simple and non-technical way. After the initiating

presentation and discussion four early-career scientists presented their experiences of science communication and suggestions on how to improve the same. Finally, a discussion on communication related topics such as miscommunication and ECS communication opportunities followed.

The early-career scientists funded by APN participated actively at the ICRC-CORDEX conference, during the poster sessions, oral presentations and at the early-career scientists side event. The poster sessions gave the early-career participants a great way to showcase their own research, to gain new ideas and to discuss their research with other participants. Anubhav Choudhary mentions in his conference report (Annex C): '*during my poster presentation, I got an opportunity to seek suggestions on improvement of my work design as well as through discussions, exchange knowledge and ideas to design further part of my work.'* A few APN funded early-career participants got the chance to give an oral presentation during parallel and plenary sessions. Shreta Ghimire had the honour to present her research on Monsoonal precipitation over the Himalayan region during the plenary session at the opening day of the conference.

The conference offered the early-career participants an opportunity to talk with other young scientists as well as senior scientists, resulting in a great expansion of their network internationally. *'I got the chance to establish a network with some experts and institutions which are really renown and inspiring'*, pointed out by Jeeban Panthi in his conference report.

The dedicated early-career side event referred to above, focusing on science communication, provided an interesting learning opportunity as well as an opportunity to actively participate and share thoughts and ideas. Shazwin Mat Taib was one of the four early-career scientists who presented her vision on science communication in front of the audience.

Shazwin Mat Taib presenting her ideas on science communication during the ICRC-CORDEX early-career scientists side event.

Overall, the early-career participants showed great gratitude towards the APN for funding their participation and thanked the ICRC-CORDEX organisers for the inspiring conference.

Mohit Prakash Mohanty described his experience as: *'The conference shall remain special for me as a means for gaining new skills and a great exposure to the international community.* Anubhav Choudhary stated in his conference report: *'Without such a generous support from the funding bodies and organizers it would have been really difficult for me to attend the conference.'* Mohan Kumar Das expressed: *'A final word of gratitude goes to CORDEX community and the conference sponsors such as the APN, who made this conference an enjoyable and exciting event.'*

Among the participants, there were numerous students, early-career scientists (ECS) and senior scientists from developing countries, accounting for the larger part of the recipients of the travel grant to attend the conference.

The following students and ECS were selected to receive the APN travel grant (see Appendix A for complete contact details information):

Dr Shaukat	Ali	Pakistan	Male
Mr Md. Abul	Basher	Bangladesh	Male
Mr Anubhav	Choudhary	India	Male
Dr Faye Abigail	Cruz	Philippines	Female
Mr Mohan	Das	Bangladesh	Male
Kumar	Ghimire	Nepal	Female
Ms Shreta	Khalid	China/Pakistan	Female
Ms Bushra	Magnaye	Philippines	Female
Ms Angela Monina	Mandal	India	Male
Mr Shailendra	Mohanty	India	Male
Mr Mohit Prakash			
Mr Jeeban	Panthi	Nepal	Male
Ms Tarul	Sharma	India	Female
Dr Shazwin	Mat Taib	Malaysia	Female
Ms Yaoping	Wang	USA	Female

Recipients of the Best Poster Award of Poster: Andreas Prein, Raul Wood and Csaba Zsolt Torma surrounded by CORDEX co-chairs William Gutowski and Filippo Giorgi and the head of the Rossby Centre at SMHI, Erik Kjellström.

4. Conclusions

Our firm belief and conviction is that the conference was a big success in achieving the objectives to promote the CORDEX vision to advance and coordinate the science and application of regional climate downscaling as well as the specific conference objectives, for instance; demonstrating and sharing tools, knowledge and methods for capacity development, sharing best practices and featuring discussions on communication with users and stakeholders. The conference also showcased high resolution climate information and its applications to vulnerability, impacts and adaptation and the full spectrum of potential end users of regional climate information. All this would not have been possible without the financial support from several contributors, among them the APN. New constraints on travel for many institutions worldwide prevented many from attending but nevertheless the conference met its objectives in overall attendance. To our understanding the conference also had good international visibility and, as witnessed by many participants, well met the goals of networking and research capacity development in all domains.

In addition to the students and early-career scientists sponsored by APN, the WCRP and SMHI, sponsored a number of senior scientists from Asia and Pacific regions who greatly contributed to the success of the conference. Scientists and experts form the APN region pitched in by giving oral presentations, demonstrating posters, participating in side events

such as the Early-career Scientist event and in workshops where one, led by APN region scientists, targeted the regional monsoon hydrological cycle over Asia and Australasia.

Friday, the last day, began with a conference summary by the CORDEX co-chairs Bill Gutowski and Filippo Giorgi. Key outcomes from the conference included:

- The CORDEX community worldwide continues to advance scientific understanding of regional climate and regional downscaling
- Growing IPPC interest in information for regions is providing new opportunities for CORDEX contributions
- The interface between regional climate science and climate services needs further exploration in order to make optimum use of climate research and experience with providing services
    - The CORDEX community demonstrated the added value of regional downscaling and recognized the need to further communicate this with policymakers.
    - A coordinated set of CORDEX experiments, CORE, will be designed and performed and will among others be used as input to AR6;

Some recurring dilemmas stood out during the wrap-up discussion:

- Lack of observations;
- Coordination of modeling/modelers;
- Distillation of information from data;
- Links to other initiatives;
- Interface/communication with users and stakeholders, including
- how to make sure results are understood and implemented in an intelligent way;
- Organization with respect to societal issues;
- Where does CORDEX end? How far into services does CORDEX go and where are the boundaries towards the VIA community?

It was agreed that there is a need and demand for definitions of the role, the priorities and the boundaries of CORDEX as well as the need to demonstrate and communicate the added value of CORDEX outputs and different downscaling methods.

Participants deliberated on a framework of Coordinated Output for Regional Evaluations (CORE), in consideration on the next steps for CORDEX – a succinctly structured set of simulations for each region in support of IPCC needs (IPCC calling for a larger role of CORDEX in the next report); including choosing scenarios, GCMs, RCMs, archiving and required coordination with CMIP6. The present CORDEX framework has large inhomogeneity in information and simulations across domains and also relatively coarse resolution in relation to the planned CMIP6. CORE design and output would be directed towards the AR6.

The CORDEX Scientific Advisory Team (SAT) announced the first set of endorsed Flagship Pilot Studies (FPSs), selected from the applications to the first FPS call. The idea behind setting up FPS and the criteria for the studies was explained; to focus on sub-continental-scale targeted regions so as to allow a number of capabilities towards addressing key scientific questions, see more on cordex.org under Experiment Guidelines. The five

proposals were briefly presented and the procedure for submitting new proposals for the coming calls outlined.

The breadth and depth of oral and poster presentations illustrated the relevance of and need for CORDEX on the climate change agenda. CORDEX contributions to impacts, vulnerability and adaptation applications in areas such as all the WCRP Grand Challenges, where for instance the Food Basket regions where pointed out, are increasingly demanded as well as direct input to the IPCC assessment and special reports.

5. Future Directions

Whereas CORDEX has contributed vastly to the development and production of regional climate data and information, there are still gaps in the regional climate downscaling, both knowledge gaps and coverage gaps. To refine and add to what is existing further development of models, infrastructure, tools and knowledge exchange are needed. The demand for uncertainty estimates, training and capacity building and more tailored information is continuously increasing thus also calling for more interaction with users and definition of boundaries as to how far CORDEX products/services reach.
Some of the topics discussed as necessary to account for and/or to include in future work were:

- Resolution versus computational costs
- The risk of losing information in ensembles
- Uncertainties and risk analysis and informed use of climate information/model output
- Understanding feed-back mechanisms due to LULC and aerosols
- Advantages and combination of different downscaling methods
- The need for development of earth system models for a more complete understanding of regional and local change in response to climate change
- Challenges in representing and projecting extremes at the accurate scale for users and scale mismatch models/observations and models/impact
- potential climate change implications for hydro/thermo/wind/solar-power generation and RCMS challenges and possibilities in facilitating planning
- Model inter-comparison and assessment
- Altered rain and dry spell patterns.

In the discussions of the next steps of CORDEX and this second part of CORDEX, it is of essence to discuss and revise scientific targets. Some of the comments included the notion that CORDEX is still not well defined under WCRP and also need better integration with other WCRP programs. There is also the question on the difference between regional information and information for regions and how an integrated holistic approach may be necessary to deliver what the user needs so the user understands. New emphasis from WCRP on food basket regions was lifted as well as the demand for underlay targeting the corresponding water issues. CORDEX needs to contribute more to the AR6 than was the case for AR5.

Some CORDEX-specific scientific challenges have been presented and will act as guidance for the next CORDEX phase. The aim is to target specific regional fine-scale features; added

value, human element, coordination of regional coupled modelling, precipitation and local wind systems, not embedded in but partly with the WCRP grand Challenges in mind. The statistical downscaling needs to be more visible under CORDEX and attempts to integrate ESD groups have been initiated.

The sharing of information from CORDEX is developing and hopefully in the future all will be available on the common platform ESGF.

CORDEX CORE (the Common Regional Experiment framework) design and carry-through will be a main task the coming years. A CORDEX based 'Atlas'-like product could be useful. Thus a succinctly structured core set of RCMs to downscale a core set of GCMs for each CORDEX domain and for a core set of scenarios would constitute this CORE. This would in the future be incrementally enlarged with further models and simulations. It is essential to examine what has already been done and start with that.

The work with further streamlining and coordination of the work in the CORDEX domains will continue and is of essence for the unified voice towards the user/policy community.

References

- APN Fourth Strategic Plan (2015-2020), 20pp
- Third International Conference on Regional Climate, ICRC-CORDEX 2016, http://www.icrc-cordex2016.org/index.php.

Appendix

Appendix A - Contact Details of APN Sponsored Young Scientists

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Appendix B – List of conference main organizers and co-sponsors

CONFERENCE ORGANIZERS

Swedish Meteorological and Hydrological Institute

CO-SPONSORS

Additional financial support for the conference and related activities has been generously provided by the organizations listed below. EUMETSAT, ESA, ECRA, Bolin Centre, Formas. SMHI and the World Climate Research Programme (WCRP), its network of scientists and the conference participants are grateful for their contribution.

European Space Agency

Asia-Pacific Network for Global Change Research

Evaluation Report
ICRC CORDEX 2016
Tarul Umakant Sharma PhD Student,
Indian Institute of Technology Bombay, India

I would like to take this opportunity to thank the CORDEX committee and the APN for awarding me the travel grant for attending the prestigious ICRC CORDEX 2016 conference in Stockholm. I feel very elated after having a great interaction with eminent researchers and luminaries from all over the world at a common platform. The whole conference trip and stay were equally enjoyable. Being involved in a research area, which tries to connect the climate changes impacts water resources, this conference, undoubtedly provided me with a whole new experience. To begin with, the plenary session 1 on the CORDEX in action: achievements and lessons learnt gave a good start to the conference. I could gather lot of inputs from the presentations which were delivered. Especially, the need of CORDEX and how various researches have used it to study different phenomenon in their research areas, particularly South Asia was very interesting. The benefits from CORDEX in terms of added value was a new research component which I would like to incorporate in my research domain at some point of time. A special interest to me was of the plenary session B where the talks on the (1) Cross comparisons and links of GCM and (2) RCM and statistical downscaling for very high resolution were presented. The elaborate and interactive talks on the idea of the impacts of land use on hydro climatic extremes was interesting.
The plenary session C mainly focused on the theme of "Regional scale hydro climate: from observations to modelling to applications on Water resources/hydrological cycle", which mainly covered topics on Cascade of information from GCM to RCM and to hydrological impact models, Water management for floods & other water flow issues. This session was mainly based on the application part of CORDEX data along with the uncertainties lying in it. Since I am in initial stage of my doctoral degree with research interests mainly focusing on studying the climate change impacts on water resources of India, this session gave me newer views on how other researchers look into the same problem. The impacts of climate change and methodologies on how they apply to study it on hydrological scale was a good research learning for me. Since I was having oral presentation, I got excellent comments and suggestions which will help to improve my quality of work. I also extended this learning by discussing with the luminaries during lunch breaks. It was a very informative session and I enjoyed a lot by not only interacting with the prominent scientists but also with fellow research scholars who attended this conference.
All the sessions of the conference provided a very good learning opportunity and a great platform to develop communication skills of research achievements to inter-disciplinary community.

Scientific Tour Report

	Particulars of the Participant *a. Name:* *b. Designation:*	*Md. Abul Basher* *Ph.D. Student, IWFM, BUET, Bangladesh*
	Particulars of the session attended *a. Title of Meeting:* *b. Duration of the session* *c. Name(s) of the Institution(s) with location where the session*	*ICRC: CORDEX 2016* *17-20 May 2016* *Aula Magna, Frescativägen 6/Universitetsvägen 6* *Bolin Centre, Stockholm University - SE-10691 Stockholm*
	Session *a. General scope of the session:* *b. Practical utility of this session:*	*The ICRC: CORDEX 2016 conference was jointly organized by The WCRP, APN, EUMETSAT and the esa. The sessions of the conference have been divided into four thematic areas: (A) Benefit of downscaling; (B) Frontier downscaling tools, (C) Impacts and applications and (D) Domain and cross domain sessions. I have participated all these sessions and also presented a poster. In this sessions, an interactive discussion has been made on-* ***Regional downscaling techniques, status and progress. There was a training session on Regional climate model downscaling technique for early career scientist. I have attended to the training session also. This training session was very fruitful for me. It will use this knowledge for my research.*** *The workshop helps researchers to perform excellent scientific work, and end user interaction, being achieved the scientific challenges by the scientists under the CORDEX umbrella. The main achievement of the conference was:* *• Showcase the excellent scientific work, and end user interaction, being achieved by Asia-Pacific scientists under the CORDEX umbrella;* *• Raise awareness of the scientific and other challenges being faced and address by CORDEX teams in the region;* *• Provide the opportunity for Asia Pacific CORDEX teams to work with representatives*

		of the many other regional CORDEX initiatives and WCRP core projects' regional activities (under CLIVAR, GEWEX, SPARC and CliC) with respect to key scientific and global change challenges for the Asia Pacific region; • *Facilitate networking with the international science community, with others from the Asia Pacific region, with other major global change initiatives, and the VIA, policy/decision maker and end user communities from across the world;* • *Enable knowledge creation of the latest developments and progress in the regional climate science community and promote the contribution of Asia Pacific participants to these high level discussions;* • *Provide a professionally delivered training opportunity for early career scientists from the region to develop skills in how to communicate their science to a range of end users; and* • *Offer opportunities for early career scientists from the region to develop new knowledge, gain new skills and exposure to the international community.*
	Any suggestion to make this particular session more beneficial for south Asian region	*As participation in the workshop provides the opportunity to gather updated knowledge about numerical modelling as well as seasonal and climate prediction. Participation in the CORDEX workshop may continue in future for capacity enhancement of early career and developing nation scientists.*

Jeeban Panthi – Nepal

CORDEX Conference Report

Showcase the excellent scientific work, and end user interaction, being achieved by Asia-Pacific scientists under the CORDEX umbrella;

- *Raise awareness of the scientific and other challenges being faced and address by CORDEX teams in the region;*

I was able to learn the new development in climate modeling and its progresses through some panel discussion and keynote speeches. Also, it was very interesting to see some papers from our region done by scientists from other regions which are really analytical and can be replicated to other parts of my region.

- *Provide the opportunity for Asia Pacific CORDEX teams to work with representatives of the many other regional CORDEX initiatives and WCRP core projects' regional activities (under CLIVAR, GEWEX, SPARC and CliC) with respect to key scientific and global change challenges for the Asia Pacific region;*

Actually the conference was one of the best platforms for me as I got an opportunity to showcase my research work via posters to an international scientific community. I have got some critical but constructive comments to my paper, which I will encompass while submitting the same paper for publication in a journal.

- *Facilitate networking with the international science community, with others from the Asia Pacific region, with other major global change initiatives, and the VIA, policy/decision maker and end user communities from across the world;*

I got chance to establish network with some experts and institutions which are really renown and inspiring. For instance, ICTP, SMHI, WCRP/WMO etc. Also, I found few colleagues from Africa region coming to the conference; we are now in contact to develop a cross-continental project in climate adaptation.

- *Enable knowledge creation of the latest developments and progress in the regional climate science community and promote the contribution of Asia Pacific participants to these high level discussions;*

The conference itself was to share and discuss the latest scientific findings among wider networks including modeling as well as user groups. I am on the user side, and I used the climate model data for analyzing the relationship with vegetation cover.

- *Provide a professionally delivered training opportunity for early career scientists from the region to develop skills in how to communicate their science to a range of end users; and*

The science communication workshop, specially targeted to young researchers like me, was one of the career milestones for me. It opened our eyes to think of differently about the science communication to different stakeholders.

- *Offer opportunities for early career scientists from the region to develop new knowledge, gain new skills and exposure to the international community.*

Hands-on-training organized on Regional Climate Model Evaluation System (RCMES) by NASA was very interesting, though the time was very short. I will apply the tool to my research area in Nepal.

Scientific Tour Report

	Particulars of the Participant *a. Name:* *b. Designation:*	*Mohan Kumar DAS* *Research Fellow, IWFM, BUET, Bangladesh*
	Particulars of the session attended *a. Title of Meeting:* *b. Duration of the session* *c. Name(s) of the Institution(s) with location where the session*	*ICRC: CORDEX 2016* *17-20 May 2016* *Aula Magna, Frescativägen 6/Universitetsvägen 6* *Bolin Centre, Stockholm University - SE-10691 Stockholm*
	Session *a. General scope of the session:* *b. Practical utility of this session:*	*The WCRP, APN, EUMETSAT and the esa jointly organized the ICRC: CORDEX 2016. The main aim of this programme is to bring the research group together to advance Earth Systems Models for more accurate climate projections and for reduced uncertainty in the prediction of climate and climate change in the next decades. The sessions of the conference have been divided into four thematic areas. Undersigned has participated all these sessions. The workshop helps researchers to perform excellent scientific work, and end user interaction, being achieved the scientific challenges by the scientists under the CORDEX umbrella.* *The undersigned has participated actively in the workshop sessions- A: Benefit of downscaling; B: Frontier downscaling tools; C: Impacts and applications and D:* ***Domain and cross domain sessions****, presented a poster. In this session discussions have been made on-* ***Regional downscaling techniques, status and progress.*** *Sessions were very much interactive. The knowledge gathered during the sessions will be helpful to conduct research works on seasonal to decadal and climate prediction at my Institute for Climate Research Program*

			which is being implemented for the Asia Pacific region. *The Training sessions was more fruitful for the research communities.*
		Any suggestion to make this particular session more beneficial for south Asian region	*As participation in the workshop provides the opportunity to gather updated knowledge about numerical modelling as well as seasonal and climate prediction. Participation in the CORDEX workshop may continue in future for capacity enhancement of early career and developing nation scientists.*

1 My Participation and Presentations

The undersigned has participated actively in the conference sessions-
A: Benefit of downscaling; B: Frontier downscaling tools;
C: Impacts and applications, D: Domain and cross domain sessions
and also participated in the ECS event, ECS best poster competition and training session.
Poster presented in the Poster Session C:
Das, Mohan K *et al., (2016) Predictability of Pre-Monsoon*
Heavy Rainfall Events over Bangladesh using WRF under the
Changing Climate.

2 My experiences and networking opportunities

The conference was a marvelous success in achieving its scientific,
technical and capacity development objectives. The conference brings the research group together for reduced uncertainty in the prediction of climate and climate change in the next decades. The workshop helps researchers to perform excellent scientific work, and end user interaction, networking being achieved the
scientific challenges by the scientists under the CORDEX umbrella. Sessions were very much interactive. The knowledge gathered during the sessions will be helpful to conduct research works on seasonal to decadal and climate prediction at my Institute for Climate Research Program which is being implemented for the Asia
Pacific region. ECS event and the Training session were more fruitful for the research communities.

3 Suggestions for WCRP/CORDEX for future conferences

As participation in the conference provides the opportunity to gather updated knowledge about numerical modeling as well as seasonal and climate prediction.
The demand for training activities that build capacity for interaction among practitioners, policymakers, scientists and other societal decision making groups need to enhance.
Participation in the CORDEX conference may continue in future
for capacity enhancement of early career and developing nation
scientists.

A final word of gratitude goes to CORDEX community and the conference sponsors such as APN, who made this conference an enjoyable and exciting event.

Mohan Kumar Das
Research Fellow
IWFM, BUET

Evaluation and reflection report - *Angela Monina T. Magnaye*

Before anything else, I would like to say that I am truly grateful to the organizing team and funding institutions to be able to join the ICRC-CORDEX 2016 as a fully funded participant. As a young scientist from the Philippines, it was very inaccessible for me initially to share my research to the international community due to lack in resources. Yet, the financial support helped me participate in the conference since the venue is far away and the travel and lodging costs can be very expensive in Stockholm. This grant gave me the opportunity to represent my country and the research I am doing for the CORDEX-Southeast Asia, which is one of the regions that need capacity building especially that the members are developing countries.
It was first difficult for me to pay first for the flight and accommodation booking expenses because my personal savings cannot cover everything. However, I was fortunate enough to have my family members to cover for my expenses in the light that the funding institutions will reimburse the expenses after the conference. I understand that the no-cash policy has its merits on security and other matters, but there is also a downside, especially on the possibility of the delay of the reimbursements.

Nevertheless, the system on the per diem (prepaid credit cards) was very efficient and safe. It is one of the financial matters I enjoyed and hopefully this practice will be used by your conference in the future and will also be adapted by other events as well.

Prior to the event itself, the organizing team was replying very quickly with matters that needed attention. Even after the event, the organizers led by Dr. Irene Lake still had open communication with the participants. Communication for me is one of the most important roles of the organizing team, which was done very well.
The conference itself is well-organized – from the program to venue layout and even to meals – and this I have to commend the organizing team. The program did not start too early and ended also in the right time for supper, so I was able to go around Stockholm and see the city with my colleagues.
The venue was not also difficult to find because Stockholm University had its own train station, which is a huge plus for someone who is not exactly familiar with the city like me. Aula Magna is one of the best auditoriums I've been to, and I was glad that the conference was held there.

The meals were also very filling and interesting. I am not familiar with the local cuisine, but I enjoyed having a meal that is very healthy and delicious. I am thankful for the coffee breaks with snacks that are also filling, and the servers were very organized and helpful.

As a poster presenter in the conference, I found the poster areas scattered, so not all posters were not visible enough for all participants. Some backdrops were also made out of cartons which were not stable for other participants to place their posters.
As a participant in the conference, I was glad to have the chance to listen to several experts and interact with young scientists from around the world who share the same field with me. Even the ECS session helped me find new contacts with similar

research interests and made me learn so much about communicating with science – not just within the circle of scientists and researchers, but also to the laymen, to the vulnerable who need the information.

I had the time to communicate to others our region's progress, and make the rest aware of our strengths and weaknesses in our modeling capabilities and issues we've encountered that may not be the same for other regions. For instance, our region still lacks in a unified ground observational dataset because of issues on data sharing. In contrast, I was able to talk to members of other regions that have observation datasets that are free of use to the public, so they do not have problems in validating their model results. I am uncertain for the main reason why our region has this issue – maybe it is the lack of resources or related to something political which is beyond our reach – but I do hope it is something that can be addressed to benefit our region and not become a hindrance to our research.

In summary, I was able to achieve one of my goals to share my research to the international scientific community through the help of the financial grant by the organizers. My experience has led me to learn from the senior scientists and experts in respective fields, and also meet other young scientists from different regions.
I am inspired more to do quality work after the event, and I would very much like to attend this conference again in the future. I do hope that the organizing team and the funding institutions will still continue to support the scientific community from developing countries in the years to come.

Sincerely,
Angela Monina T. Magnaye
Ateneo de Manila University, Philippines
and Manila Observatory, Philippines
Fully funded participant of ICRC-CORDEX 2016

CORDEX Conference Report - ANUBHAV CHOUDHARY

I am an early stage PhD student of Climate Sciences at JNU, Delhi, India. My PhD work is based on the assessment of CORDEX-South Asia experiments for monsoon climatology over Indian region and its future projections. Therefore, this international conference on CORDEX provided me the best and most appropriate platform at the most appropriate time to enhance my knowledge and awareness on the current state of developments in my field of research. Through the RCMES workshop/hands on session I got a chance to build upon my skills and capacity to smartly and speedily analyze the model data. I had presented my work earlier in my country in different conferences but never outside my country. This conference gave me for the first time a proper and the exact platform to showcase my work and findings that I have made till now on CORDEX models over my domain – South Asia/India. Simultaneously through interaction with my peers, expert scientists and researchers from other corners of the world especially during my poster presentation, I got an opportunity to seek suggestions on improvement of my work design as well as through discussions, exchange knowledge and ideas to design further part of my work. All of these gave me the broad idea of making my contribution in achieving the true goal of CORDEX in my country and its benefits to society especially with respect to impacts of climate change. Now, I can foresee to some extent that how I can get involved in CORDEX future plans and actions. I would mention that a sort of achievement for me after attending this conference would be that I was able to establish a few contacts which I hope would be helpful for me in future.

A comfortable stay arrangement for me in Stockholm, an excellent conference venue and a selection of informative oral presentations were the things I had expected and thankfully I experienced the same. I am very grateful to all the individuals and bodies who were involved in organizing this conference in giving me the chance to participate. Without such a generous support from the funding bodies and organizers it would have been really difficult for me to attend the conference.

(ANUBHAV CHOUDHARY, Doctoral student, JNU, Delhi, India)

CORDEX Conference Report

By: Shaukat Ali

Global Impact Studies Centre, Ministry of Climate Change, Islamabad,Pakistan.

I have completed my PhD in Meteorology from the Institute of Atmospheric Physics (IAP), Chinese Academy of Sciences (CAS). My research work is on Regional Climate Models and The Hydroclimate Projections in Typical Regions of South Asia where I used CORDEX output data.

The recent ICRC CORDEX 2016 was closely related to my research work. The conference broadens my knowledge about the CORDEX activities which I will utilize positively for my country. The conference surely promotes the global and regional partnership especially helpful for developing country young scientists. All the session and lectures of invited speakers were very informative.

As developing countries have limited computational and data storage resources to run Regional Climate Models models, so outputs of CORDEX like a blessing for us to explore future climate for our region. It requested for sharing of CORDEX data on time.

I also attend RCMES training programme, it was also good and the trainers were cooperative and helpful but the time was too short for such training and all the laptops didn't install the prerequisite required software.

I also attended the Early Career Scientist Event, it was also very useful for motivation and I hope that it will provide us the base for to construct a group of young scientist for our region under the umbrella of Future Earth. The real motivation was due to Gaby Langendijk, she keeps the interest of the young scientist until the end, Asher Minss involved the young scientists in interactive communicating process.

I would like appreciate organizers for fruitful and successful conference. I am voluntarily promoting CORDEX and FUTURE EARTH projects by delivering lectures in different universities in Pakistan. I have no funding for such activities sometime difficult to arrange tea for the participants. But still I am straggling to promote awareness of climate change among the public especially in educational institutes. I would like if we can write some proposal to APN for the awareness program on Climate Change under the umbrella of Future Erath Project. I am also interested to bring together the young scientist on Climate Change of South Asia to help the society.

International Conference on Regional Climate – Coordinated Regional Downscaling Experiments
ICRC-CORDEX 2016
17th – 22nd May 2016
Stockholm, Sweden
Submitted by: ***Shreta Ghimire****, International Center for Integrated Mountain Development, Kathmandu, Nepal*

The International Conference on Regional Climate (ICRC-CORDEX 2016) produced a huge platform for the scientists (including Early Career Scientists) by bringing together the international science community involved in regional climate research focusing on high resolution climate information. It brings out a huge platform for the scientists around the world to present and discuss their work also giving a huge opportunity to everyone to update themselves on research regarding the high resolution climate information.

Highlights

- *Plenary Session: During the plenary session we got a broad picture of CORDEX, its past, present and its upcoming future. The history of CORDEX was never known to me in detail so for me it was a good bunch of information. In this one whole day plenary session, we had a brief idea about CORDEX achievements, its status and challenges faced. Also, we have got to see the results from different domains of CORDEX, North America, Europe, Africa and South Asia. I personally had a very good experience and it was a good opportunity for me to present in this session. The title of my presentation was "****Assessment of the performance of CORDEX-South Asia experiments for monsoonal precipitation over the Himalayan region during the present climate****". For me to present my work in front of a large scientific community and to discuss my work in a common platform for the scientists coming from around the world was a great opportunity.*
- *Parallel Session A1: Talking about the added value of downscaling we came to know about the challenges faced by RCMs to perform dynamical downscaling of coarse-resolution boundary conditions; which is yet to be explored. The finer resolution simulations produce more detailed and main features showing systematic improvements for studying present climate as well future estimations over complex topography. However, we can draw the conclusion that the added value of RCMs depends on the strong influence of boundary conditions, climate variable and topography of region of interest.*
- *Parallel Session B1: During the session of very high resolution climate modelling it has been clear that simulations produced by convection-permitting models have potential to provide climate information on regional to local scales compared to the traditional large-scale models. Also CPM allows more accurate and realistic representation of surface and orography features. We can draw the conclusion that CPM can be used a promising tool for future predictions.*
- *Parallel Session C1: With the advancement of research on geophysical aspects of weather and climate extremes, it's understanding and prediction is faced as a great challenge. Extreme weather events represent serious risks for human activities. Also the climate extreme indices provide a basis for an improved gridded observational datasets of climate parameters like temperature and precipitation extremes. Characterization of temperature and precipitation extremes is a difficult task as they become more frequent and intense in a warmer climate on a global scale. However, the information on these extremes are very essential on a regional to local scale including time scales from sub-seasons to decades.*

- *<u>Parallel Session D2</u>: In this session we learnt about Regional Climate model evaluation system, which is very useful tool to evaluate regional climate model. It is good for early career scientists to learn such tools and it is great to use this tool over the region of our interest.*

Conclusions

The conference was very informative and lots of knowledge gaining was there. The facilitators were very helpful and the information provided was also good. The conference was managed in the proper way, without leaving any places to questions. I would like to sum of some important points as follows:

- *It provided us a huge platform to gain and share scientific knowledge, to interact with scientists around the world and to keep oneself updated about different research that has been carried on over the world.*
- *After attending the conference, we are aware about the challenges faced and was properly addressed to participants during the event.*
- *During the tea/coffee break we were able to have one to one interaction with scientists to broaden our knowledge and discuss our work.*

Such conferences should take place more often to bring a huge scientific community under one roof. We are all familiar with the saying "your knowledge grows when it is shared". For me this statement has brought its in-depth meaning when I attended the conference and I am looking forward to be its part in the future as well.

Report on Stockholm, Sweden visit for participation and presentation of paper in the International Conference on Regional Climate CORDEX 2016, was held from 17th to 20th May, 2016

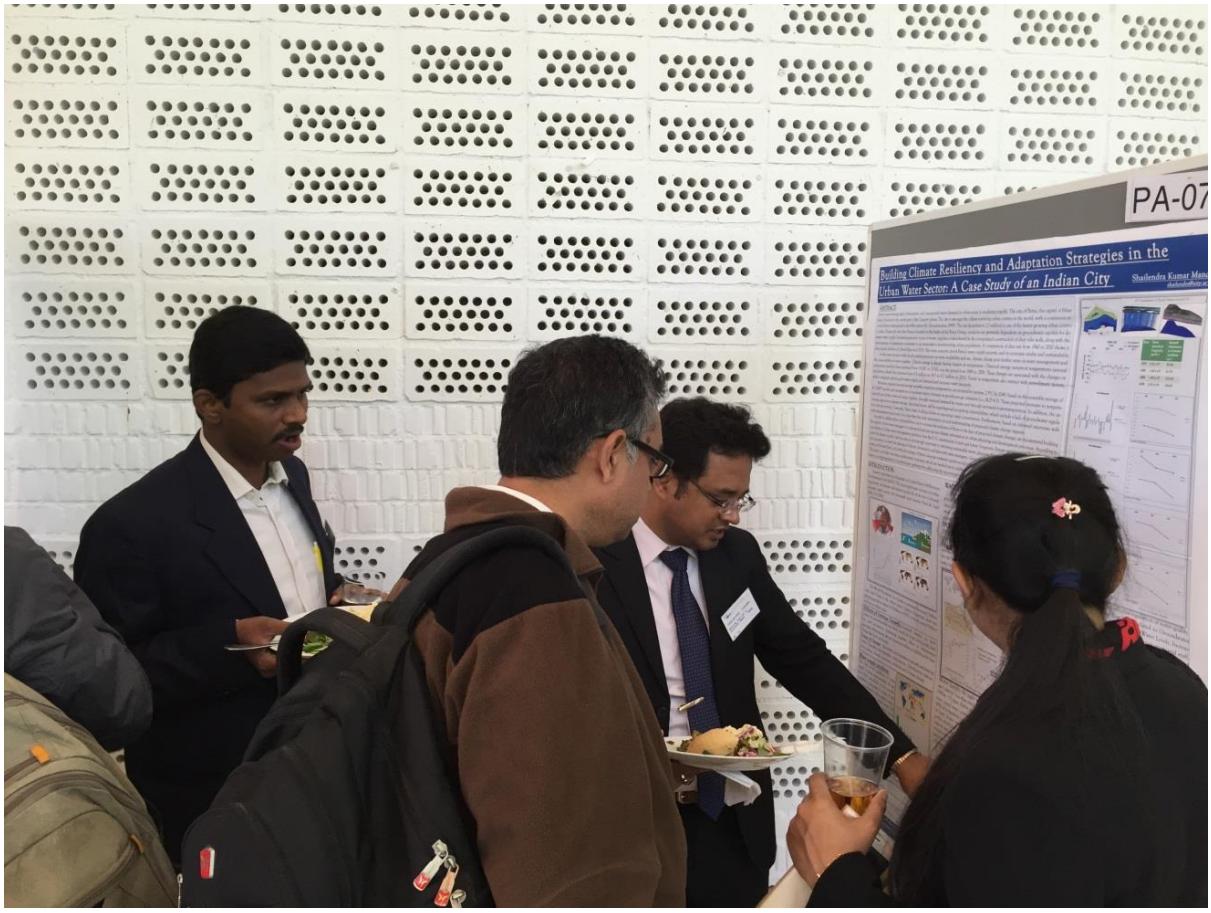
The undersigned participated in all four days programmes of the International conference on regional Climate CORDEX 2016.

On May 17, 2016 the undersigned attended the Opening Session in the Auditorium, Aula Magna and different speakers have highlighted scientific works done under CORDEX umbrella. In the Plenary Session 1, the speakers highlighted CORDEX in Action:

Achievements & Lessons learned. Presentations on Regional Climate Downscaling in Belgium, Climate projections performed for North America CORDEX, Assessment of the performance of COREX South Asia experiments for monsoonal precipitation over the Himalayas region were presented and discussed.

Participants of the ICRC CORDEX 2016

On May, 18, 2016 the undersigned attended session A3 from data to information – a distillation dilemma of Parallel Sessions A: Benefits of Downscaling. In this session presentations were made on building robust climate change information messages from multiple sources and methods, cross cutting issues (food-energy-water systems, water resources, extreme) and transdisciplinary approaches, translational research and user informed science. How can downscale benefit climate adaptation in the city was also discussed. During the poster session, undersigned had a presentation and lot of suggestions for his research and appreciations were received during the poster session. It was really helpful for his research.



Poster presentation by the undersigned at the Conference

In the afternoon session, the undersigned attended session B2 Human – climate regional interactions, towards RESMs of Parallel Sessions B: Frontier Downscaling Tools. In this session presentations were made on high resolution coupling of regional climate and coastal megacities, Bridging activity with urban parameterization community, Land use change and regional integrated assessment models.
In the evening the conference had a poster session and the undersigned interacted with some scientists working with the CORDEX data and had fruitful discussions with them.

On May, 19, 2016 the undersigned attended session C3 Regional scale hydro climate: from observations to modelling to applications of Parallel Sessions C: Impacts and Application. In this session presentation were made on water resources, cascade of information GCM to RCM to hydrological impact models, Water management for floods & other water flow issues and using large scale field experiments to assess and improve regional models.

During the poster session, undersigned had a presentation and lot of suggestions for his research and appreciations were received during the poster session. It was really helpful for his research.
In the afternoon session, the undersigned attended session D2 Training Session on Regional Climate Model Evaluation System RCMES and had onsite experience of RCMES and it was very good learning session.

In the evening, the undersigned attended the early career scientist event in which how to communicated climate science to the different audience were discussed. Asher Minss of Tyndall Centre for Climate Change Research at the University of East - Anglia, gave an interactive presentation outlining important principles for communicating climate sciences. Four early career scientists gave presentation on their vision on how to improve science communication. Overall it was very good learning session and it sparked some good ideas among participants for improving climate science communication in the future.

On May, 20, 2016 the undersigned attended the plenary session on CORDEX research challenges, CORE Framework and Looking to the future – Next steps/interactions with other regional WCRP activities and it was ended with ECS Best Poster Award.
Attending this conference has given undersigned an exposure of scientific works of Asia-Pacific scientists under the CORDEX umbrella and other challenges being faced and address by CORDEX teams in this region.

It also gave undersigned an opportunity to network with representatives of the many other regional CORDEX initiatives and WCRP core projects' regional activities.
It also facilitated under signed to network with the international science community working under the CORDEX umbrella and offer opportunities to develop new knowledge, gain new skills and exposure to the international community.

Overall it was a good learning experience for the undersigned and undersigned is really grateful for the financial support and expect the same in near future.

Once again, thank you very much for the financial assistance.

(Shailendra Kumar Mandal)
Department of Architecture
National Institute of Technology Patna
Ashok Rajpath, Patna 800 005, Bihar, India

Evaluation Report
ICRC CORDEX 2016
Mohit Prakash Mohanty
PhD Research Scholar, IIT Bombay

At the outset, I would like to thank the CORDEX committee and APN for bestowing on me the travel grant for attending the prestigious ICRC CORDEX 2016 conference in Stockholm. This was my first international outing, and what better could it have been in attending such a grand conference with eminent researchers from all over the world. The whole conference trip and stay were equally enjoyable. Being involved in a research area, which tries to connect the climate changes with the characteristics of extreme events such as floods, this conference, undoubtedly provided me with a whole new experience. To start with, the plenary session 1 on the CORDEX in action: achievements and lessons learnt kicked off to a great start. The contributed presentations on need of CORDEX and its use for different regions in the world was interesting for me. The benefits from CORDEX in terms of added value was a new research component which I would like to use in my research domain at some point of time. Apart from that, the presentations on the use of CORDEX in South Asia was very informative. A special interest to me was of the plenary session B where the talks on the (1) Cross comparisons and links of GCM and (2) RCM and statistical downscaling for very high resolution were presented. The talks were very elaborate and a few focusing on the idea of the impacts of land use on hydro climatic extremes was interesting. The plenary session C mainly focused on the theme of "Regional scale hydroclimate: from observations to modelling to applications Water resources/hydrological cycle", which mainly covered topics on Cascade of information GCM to RCM to hydrological impact models, Water management for floods & other water flow issues. This session was very close to my research area and hence gave me newer views on how other researchers look into the same problem. The impacts of climate change and methodologies on how they apply to study it on hydrological scale was a good research learning for me. I extended this learning by discussing with the luminaries from these fields during the lunch breaks. It certainly helped me in getting new insights to this research area. I had my poster presentation during the second half. It was a whole new experience for me as many researchers came to know about my work. I could also find a few fellow mates from India who stressed on the need of such studies for India as certain areas are very flood prone and such attempts can create a new step in the evacuation and planning activities. Many others appreciated my work an also suggested me on many improvements. I could say that the two hours of poster session was very interactive and I enjoyed a lot. All in all, all the sessions that I attended could provide me a very good training opportunity and a great platform to develop skills in how to communicate my research achievements to a range of end users. The conference shall remain special for me as a means for gaining new skills and a great exposure to the international community

Review report on the 'ICRC-CORDEX', event held in Stockholm, May 17th-20th, 2016

By Bushra Khalid *(Pakistan)*
ICCES, Institute of Atmospheric Physics
University of Chinese Academy of Sciences
Beijing, China

My Participation in the conference

I participated in the conference by presenting a poster titled "The performance of RegCM with different convective parametrization schemes in the mid latitude Himalayan Region". I attended the opening session and Plenary session 1: CORDEX in Action: Achievements and lessons learned, Parallel session A & B: Benefits of Downscaling & Frontiers of downscaling, poster session, Parallel session C & D: Impacts and applications & cross domains sessions. On the last day of the conference, I attended plenary session 2, Filippo's core framework & 'Looking in to the future' session with the closing ceremony. The discussion of Filippo for validating the different domains defined by CORDEX, I joined a group of scientists to carry out the task for south Asia region (that includes India and Pakistan).

My experience, knowledge gained, collaborations and networking opportunities

I would like to say that it was a great meeting from the perspective of knowledge and skills. I came across many ideas and also pointed out my own mistakes in model running. This meeting improved my knowledge and skills of regional climate modelling. I met several scientists and discussed the confusion of my research to make it clear, that helped me a lot to improve my ongoing project. It also enabled me to make collaborations with few scientists for conducting future research with them for example with the participants of Brazil, Egypt and India I made future collaborations and we are now contacting with each other in discussions. We shared our research publications and ideas with each other. It was a great platform to learn new things and improve the previous knowledge. A comprehensive discussion with Filippo was the best thing ever happened to me at the right time because he was the one who could help me in my confusions I was facing in my research and it became possible due to only attending this CORDEX meeting. I am very thankful to you and all the other organizations who have been involved in organizing this event and financing my trip to Stockholm. It was really an exposure to the broader vision, making collaborations with young scientists, taking guidance from senior scientists, knowing about the research of other people, CORDEX data characteristics and future plans, early career scientist meeting that held in the evening after the CORDEX main sessions etc. Moreover, Stockholm is a historical city and it was my pleasure that I got this chance to visit Stockholm and could see the bright night.
By visiting the Stockholm University, I also collaborated with a senior scientist in the Department of Meteorology of Stockholm University and discussed the research proposal with him to apply in the upcoming openings of Postdoctoral research.

Suggestions

The conference sessions included the presentations mostly that introduced the organizations or a small part of personal research. It is my suggestion to include lectures of experts that

would improve the skills and knowledge of participants related to the data and analysis of CORDEX, dealing with the complexities of modelling from the perspective of research.

Report

Name of Participant : Faye Abigail T. Cruz, Ph.D. Affiliation/Institute : Manila Observatory, Philippines
Poster presentation : Regional climate simulation over Southeast Asia using NHRCM
Last 17 – 20 May 2016, I attended the International Conference on Regional Climate (ICRC) – CORDEX 2016 in Stockholm, Sweden, where I also did a poster presentation on my current research. As a researcher on regional climate and member of SEACLID/CORDEX-Southeast Asia project, this conference has been very valuable for me. I was updated about the current activities and plans of CORDEX, including the planned CORDEX CORE Framework and the approved proposals for the Flagship Pilot Studies, which opens opportunities for future collaborations with other CORDEX regions. I felt motivated to publish upon learning that authors from developing and emerging countries are encouraged to be part of IPCC AR6. It was also very interesting to learn about the current interest in understanding the impacts of
1.5 °C and 2 °C warming scenarios, especially given the previous focus on the high emission scenarios.

I found it helpful to learn about the research of other CORDEX regions, as well as the different methods and visualizations they have used in their analysis, which I could also apply in our work. In the discussion during the sessions on the benefits of downscaling and very high resolution modeling, an important insight for me was the emphasis, not just on characterizing and quantifying the added value in downscaling, but also understanding the processes behind this added value. I am also considering exploring the use convection-permitting models for studying extreme precipitation.

In the conference, I was fortunate to meet new colleagues, and to reconnect with other scientists, whom I have met in the past CORDEX conferences. Meeting colleagues in the conference who were also working on research related to climate for the Philippines and Southeast Asia provided opportunities for collaboration. Currently, we are working together on a paper.

Furthermore, I have received helpful feedback during my poster presentation. If it were possible in the next conference, it may be helpful to have some time allotted for a brief introduction or summary of posters before the poster session. I am very grateful to have been given this opportunity to participate in the conference, and I hope to be able to attend again in the future.

Email: fcruz@observatory.ph
Dear Organizers,

Thank you for the flight ticket support for the ICRC-CORDEX conference in May 2016. I attended the whole conference and presented a poster in parallel session B (Frontier downscaling tools). The parallel sessions I specifically attended include A1 Added value of downscaling, B2 Human-climate regional interactions, C1: Representing & projecting extremes, D3 How can statistics help making sense of data from multiple sources.
Overall the experience was very valuable. The conference had specific focus on regional climate modelling and statistical downscaling, and provided good information on both mechanistic understanding of regional climate systems and technical methods. I learned a lot about how to graphically represent atmospheric data and how to interpret the graphics. As an environmental science student, it is also interesting to see the wide application of regional climate modelling including on wind energy and agriculture. On the data and methodology side, I learned how to access the CORDEX website and also gleaned some knowledge on Bayesian Networks from a talk. Machine learning is gaining popularity in statistical downscaling, and the conference gave me some more ideas on choosing methods and evaluating performances. Another talk suggested that statistical downscaling methods are beginning to be unified under the same framework and it will be interesting to see the follow-ups.
The networking opportunity was very good. The poster sessions had varied topics but were well-organized by category. It was easy to find out the topics of interest and chat with people in front of it. The good snacks and drinks helped to create a relaxed atmosphere for socializing. I got to know a person during the conference who helped me overcome some technical issues with the WRF models. Group discussions were facilitated on Thursday afternoon. The discussion topics provided enabled easier mingling between scientists at different career stages. The time was slightly tight but overall a good learning experience.
The CORDEX conference is international, but the statistical downscaling side seems to have a more European focus, while the United States part is more interested in high-resolution regional climate simulation and extreme events. It will be nice if the event could be held in more continents and help us see more of each other's work.

Regards,
Yaoping Wang