



NOTES OF 5TH CMAS MEETING

PACIFIC RIM CITIES: CLIMATE CHANGE MITIGATION AND ADAPTATION STRATEGIES (CMAS)

“Cities & their Water Systems under Climate Stress – Shaping our Collaboration for Further Success”

**Hosted By:
University of Indonesia
Held at the Gran Melia Jakarta Hotel**

March 16 – 17, 2010

INTRODUCTION

1. The fifth meeting of the AWI CMAS research program meeting was held in Indonesia at the Gran Melia Hotel, Jakarta, hosted by the University of Indonesia, on March 16 – 17, 2010. The following organizations participated in the CMAS project meeting:

1. Australian National University (ANU)
2. Asian Institute of Technology (AIT)
3. Chulalongkorn University (Chula U)
4. Kyoto University (Kyoto U)
5. Monash University (Monash U)
6. National University of Singapore (NUS)
7. Tsinghua University (Tsinghua U)
8. University of Indonesia (UI)
9. University of Malaya (U Malaya)
10. University of Melbourne (U Melb)
11. University of California, San Diego (UCSD)
12. University of Southern California (USC)

1. Each participant gave a short introduction to their background and recent work over the past year. The full program for the meeting can be found in **ANNEX A**. The full list of attendees can be found in **ANNEX B**.

UPDATES OF CMAS DEVELOPMENTS SINCE LAST MEETING

2. Prof Jim Falk welcomed members and introduced the agenda with a brief description of the APRU World Institute, the governing board, the research AWI is developing in relation to public health as well as climate change. Building up from the previous CMAS meeting held in Melbourne in March 2009, Prof Jim Falk suggested that the group should keep the five thrusts area in mind, in which work had already begun.

- Water Governance
- Adaptation, Mitigation & Culture
- Hydrological Modeling Project
- Emissions & Water Cycle
- Technologies for Integrated Water Solutions

Please refer to **ANNEX C** for the above thrust areas of the AWI CMAS Model.

3. The following updates were presented at the meeting:

Hydrological Modeling Workshop - Jointly conducted by Prof Azizan Samah, U Malaya and Prof Ilya Zaslavsky, UCSD in July 2009. The workshop was the first step in integrating data collection and data management efforts, and modeling designs, across South East Asia (SEA) countries. It attracted 30 participants from various research institutes across SEA and from government agencies in Malaysia.

Water Knowledge Hub – The AWI CMAS project had been invited to be a knowledge partner for National Hydraulic Research Institute of Malaysia (NAHRIM) water knowledge hub, which is an Asian Development Bank (ADB) funded structure.

China Study – Prof Jim Falk there is a potential opportunity for CMAS to collaborate with the Australian Commonwealth Scientific and Research Organization (CSIRO) to do a study on the water system in China, funded by the Chinese government. However, progress in building on this proposal has been slow from the CSIRO end.

Stimulation of Partnerships – Through Dr. Richard Drobnick's efforts, the AWI CMAS stimulated a partnership with the Asia Society of Northern and Southern California to launch a Pacific Cities Sustainability Initiative. In 2011-2012, it is planned to expand the partnership to include the Asia Society Centers of Hong Kong and Shanghai, and the Chambers of Commerce.

Global Water Initiative - The partnership between AWI-CMAS and the emerging Global Water Initiative – a development driven by a collaboration between UCSD and Cambridge University - has been developing well with collaboration in both of the workshops they have held, an associated all-day symposium at the Science, Technology and Society Forum in Kyoto in Japan last October, and an associated public consultation on water and climate change in Srinagar in November 2009. There is potential to develop an Australia-India fund application out of these developments.

Project Proposal to GEO – A project proposal led by Ilya Zaslavsky (UCSD) to Global Environmental Options (GEO) to help develop hydrological data infrastructure and capacity building for accessing the impacts of climate change on water has passed the first competitive concept selection stage and an invitation has been made by GEO for this to be developed to a full proposal..

Publishing of Working Papers – the publishing of working papers into book form supported by World Scientific (Singapore) was to be kept in view as an available option for CMAS for an appropriate time in the near future.

FEEDBACK ON OUTLINE OF FUTURE DIRECTIONS FOR CMAS

4. Please refer to **ANNEX D** on the Outline of Future Directions for CMAS.
5. Prof Azizan Samah noted the advantages of CMAS, which include strength in numbers along with information sharing among different countries, different governments. He also added that being a part of the group enabled one to think beyond the national boundaries.
6. Prof Graham Moore suggested that CMAS should come up with solutions that become “viral” – e.g. mobile phone technology, so as to expand the network and garner growth for the project.
7. Dr Fu Sun responded that, although he could see it was more from this meeting, his colleagues understood CMAS to be a loose project in which individuals work alone. To raise funds, he felt that it would be best to obtain it from the researcher's home country and pulling some other project members in, from developed and developing countries; so that the research would be beneficial to both developed and developing countries.
8. Prof Jatna Supriatna mentioned that CMAS had to think of how these solutions and implementations could work for the government.

TEAM OVERVIEWS & RESPECTIVE DEVELOPMENTS

9. Prof Danai Thaitakoo informed the group of the climate change modeling work done at the SEA region in addition to the adaptation in agriculture, working with partners such as Southeast Asia START Regional Center (SEASTART) which is located Chulalongkorn University. Prof Jim Falk asked Danai to see if he could develop stronger collaboration between SEASTART and CMAS. Danai indicated he would assist in achieving this.
10. Dr Richard Drobnick suggested that the joint hydrological modeling project by Prof Azizan and Prof Ilya Zaslavsky -- building capacity data structure and putting data on public domain for the whole of SEA -- might be of interest in relation to Prof Jatna Supriatna's question about development of information for government by the group. Prof Azizan mentioned that CMAS had an advantage as it was able to work outside the government.
11. Prof Sangham Shrestha mentioned that AIT had launched the Center of Excellence on Sustainable Development in the Context of Climate Change on 24 September 2008. The aim was to consolidate research in climate change issues with 6 schematic areas. This would be led by eight to ten faculty members on each of these schematic areas.
 - i. Vulnerability and disaster risk
 - ii. Water resources and coastal adaptation
 - iii. Urban and rural sustainability
 - iv. Low carbon society
 - v. Coastal-rural sustainability
 - vi. Green-enabled technology
12. Prof Sangham Shrestha also informed the members that AIT's Vice President of Research, Prof Sudip K. Rakshit's high interest in the CMAS project and offered the possibility of a CMAS secretariat/AWI secretariat being serviced out of AIT.
13. Prof Cornelius Sullivan mentioned a USC water retreat planning meeting in April 2010, designed to bring together water-related research with the aim of establishing strengths for collaboration and playing a leadership role together. The people involved include faculty members who are strongly involved in climate research.
14. Prof David Pierce gave an update on Ms Kim McIntyre's research on Global Water Initiative. The Global Water Initiative aims to be an animating node for a network of networks connecting university research to regional and local adaptation. He stressed to the members that it was essential to address the vulnerabilities before addressing the strategy, especially in the West Coast of US. Political and economic issues also play a part in influencing water decisions. He asserted that the process of reaching the conclusions are just as important as the conclusions itself, involving the experts and non-experts. Other projects on the initiative included imbalance water issues in Africa, holding back of water in Venice and the YangTze River soil loss project.
15. Asst Prof Fu Sun noted that Tsinghua University Centre for Health Systems was formed in March 2009.
16. Prof Jim Falk noted that there was much potential in the area of greenhouse gas emissions, energy and water, and that we needed to further develop our CMAS work in that area. Prof Lee Godden added that in 2007, she was part of a group that sponsored a seminar on water and energy interactions, which was a collaborative research group between U Melbourne and Monash U.
17. Prof Graham Moore shared his current work: 'Utopia' – a platform for system modeling to allow people to develop different modules of physical and social processes to utilize the platform. He is currently looking at potential collaboration, with the involvement of urban developers in this project. Leigh Glover added that he was interested in the role of knowledge networks. Prof Lee Godden noted that the Melbourne Sustainability Institute Center was set up to integrate social science and humanities research into the issue of sustainability.

PRESENTATIONS BY THRUST LEADERS

Vulnerability Mapping Project

- Led by: Rajib Shaw, Kyoto U

18. Prof Rajib Shaw gave an overview of the Vulnerability Mapping Project's applicability to CMAS in relation to climate and resilience. Prof Falk noted that this project could provide a methodological basis for comparing the resilience of CMAS case study cities.
19. A new initiative has been created known as the Climate Extremes and Disaster Resilience Network. Climate change is one of the interfaces for consideration of climate extremes and disaster resilience. Not many higher education institutions have yet started on this topic and the network hopes to bring more of this research in its member institutions.
20. A Young Scientists program has been created at Kyoto University. Where researchers may not have sufficient knowledge or money to produce research papers, the program will provide a platform and opportunity for researchers to work with local governments to gain greater expertise.
21. In relation to collaboration with the CMAS project, Prof Rajib Shaw mentioned that some of the research outputs from CMAS could also be used for higher education. If CMAS were to produce working papers, some of Prof Rajib Shaw's research might also form a journal. He recommended to the group to enlist the help of students in this sort of work.
22. Prof Rajib Shaw noted the need for outcomes of downscaling when discussing climate change issues with the government. He suggested five basic dimensions of analysis: natural, physical, social, economic and institutional, and using these five metrics to link them to the city water issues. He has been working with the Indian government, where he recently had a meeting with the Mayor of Chennai. Prof Shaw aims to develop a capacity building program, a joint blended-learning program building on a workshop was held at Kuala Lumpur, Malaysia, in early March 2010. He noted that the workshop was useful in starting the engagement process with the government, and determining future targets and priorities. One challenge when obtaining data was whether the data was considered "official".
23. Prof Graham Moore remarked on the different social norms from which people judged resilience issues. If one made judgments across vulnerability, across the difference cities, one will realize that they are different for different cities, occurring in different ways. Prof Lee Godden noted that it is a classic challenge of environmental decision-making as to how to integrate scientific information and policies into environmental decision-making.
24. Prof Azizan Samah remarked that it put researchers into vulnerable positions when talking about downscaling. He gave an example pertaining to his Antarctic project, where use of a wrong model leads to a wrong answer.
25. In conclusion, Prof Jim Falk noted that there was an opportunity for CMAS to develop focus around the central issue of climate resilience: key would be to develop a comparative methodology for dealing with water and human settlement in the context of climate change. Prof Shaw's methodology provided a possible way forward, and it would be possible to then select one or more pilot studies. This could be the basis for developing a series of working papers into a publication by CMAS.

Hydrological Modeling

**Led by: Prof Azizan Samah, U Malaya
with inputs from Prof Liong Shie-Yui, NUS**

26. Prof Azizan Samah explained that with Prof Ilya Zaslavsky he is developing systems of hydrologic data management and sharing, using the CUAHSI Hydrologic Information System developed by the US under the National Science Foundation (NSF). A hydrologic information

sharing program for South East Asia has been established with the hydrologic information server at Kuala Lumpur (<http://seahydro.um.edu.my/search/>) operational, and ready to accept more country data. We have some data from Indonesia contributed by the July workshop participants. The workshop has had support from Capacity Building for Integrated Water Resources Management (CAPNEP) and CSIRO, with the help of Prof Salmah Zakaria, former Director General (DG) of the National Hydraulic Research Institute of Malaysia (NAHRIM). At present, Prof Ilya Zaslavsky is trying to gather a few real-time basis hydro data from the US domains.

27. Currently, the group is running Weather Research Forecast (WRF) for the whole of SEA in Kuala Lumpur. Another concurrent project would be one using a real-time water discharge model, including TRM data set (3 hr data set) and SRTM (Digital elevation model for the whole of SEA).
28. Prof Azizan reaffirmed that Prof Ilya Zaslavsky had submitted the proposal to GEO for funding. He acknowledged that there was difficulty in obtaining information from the Myanmar government. Prof Azizan noted that ground water was something they were looking into. The members suggested that they could obtain help from GEO or National Aeronautics and Space Administration (NASA). It would be good if the National Science Foundation (NSF) could look into ground water balance, and if it becomes a public domain, then people can use.
29. Some of the practical things that they would like to do would be to hold more workshops, involving India and China, with more modeling suggestions from Melbourne. Prof Jim Falk noted that it would be good to bring other CMAS members who could contribute into the project and suggested AIT to be involved in the ground water project.
30. Prof Azizan pointed out that hydrological modeling information was available, eg. around the Mekong delta. However because of the Mekong Delta Act, it makes it difficult for one to get data. He further elaborated why the project was going the public domain direction so that would be information open to everyone.
31. Prof Liong Shie-Yui gave a general update of his work at the Tropical Marine Science Institute (TMSI). He shared that NUS had signed the Kyoto protocol for climate studies with health, energy and biodiversity being the main focus. This was recently completed.
32. Regarding collaboration opportunities, he encouraged the group to look at other project teams, such as the Singapore-Delft Water Alliance (SDWA), which was set up about two years ago with the Public Utilities Board of Singapore (PUB) where the Singapore government provided some funding. Other project teams include those involving the Nanyang Technological University (NTU) and the Massachusetts Institute of Technology (MIT).
33. Prof Liong Shie-Yui noted difficulties presented by inconsistent precipitation data. Prof Jim Falk noted that given information was often not very reliable this lack of data at any particular scale could be considered as a vulnerability risk factor in assessing the resilience of a particular community.

Climate Systems and Regional Climate Modeling Led by: Prof David Pierce, UCSD

34. Prof David Pierce gave a presentation to the group on a model that UCSD had developed for regional climate assessment. He noted that in some countries there was good data available for assessing at least some of the impacts of climate change, e.g. flooding. He illustrated this through a case study of San Diego where a regional assessment group (SD project group) was formed, which from the start of the project, involved stakeholders, key governmental and business leaders. The structure worked like that of a small IPCC, with a steering committee. The SD project group identified the vulnerability areas and assigned teams on those topics. The report was then sent out to people from all walks of life for review and feedback. This project involved Google, Chicago Times, San Diego zoo and some other respected organisations.
35. The importance of two-way communication of insights and results, especially to the average person was emphasized. The SD project group went through a conscious effort to illustrate the

concept for the target audiences which were ordinary people. He added that keeping the audience in mind was a major thrust in this project.

36. Regarding the modeling of future water resources, the Sustainability Institute at USCD sponsors a project that monitors availability of water in Tijuana, a big city just 20 miles from San Diego, where, like San Diego, it is highly dependent on water import (about 90%), and highly vulnerable to flooding risks and water source changes due to climate change. Another similar problem facing the two cities is water run-off into sewage drains or into the ocean (causing soil erosion). This has led to some institutions in San Diego offering collaboration to fund sewage improvement projects in Tijuana (so as to reduce sewage flow to San Diego beaches).

Emissions, Energy and the Integrated Water System

Led by: Prof Graham Moore, U Melbourne

37. Due to the harmful nitrogen component, Melbourne puts quite a lot of resources into waste water treatment. Prof Graham Moore has estimated that the whole Australia water agriculture industry could be fertilized using urine.
38. Australia's nitrogen production is about 20% of the impact of greenhouse gas emissions, and its population is presently not producing sufficient waste water for fertilizer to be generated to meet agricultural needs. He said that the best place to capture urine was at people's home. He added that the main challenge would be changing the way people dispose their waste, which is a social problem. In response to Prof David Pierce's question of whether there are people pursuing such approaches in Melbourne, Prof Graham Moore added that there were people interested in water ecological and sanitization systems. However, these were currently aimed at more highly populated developing countries like Vietnam and China.

Water Quality – Possibilities for Future Research

Led by: Prof Tony Jakeman (ANU) and Prof Graham Moore (U Melbourne)

39. Some water quality issues as discussed included:
 - Point source vs Diffuse
 - Urban vs Rural Models (lots of model choice)
 - Contaminants: sediments, nutrients, pathogens, temperature, others
 - Ecosystem impacts
 - Enough process description to include adaptation and mitigation options
 - Collaborations
 - Tools to share for different case studies
40. Prof Jakeman showed and explained the Water Influence Diagram and the ANU Climate Change and Water Diagram (**ANNEXES E & F**), providing a model for integrated water system modelling and research. The model is notable for incorporating both the physical and social components of the integrated water system.

Society and Governance – Outlining an Agenda of Possibilities

Discussed by: Prof Lee Godden (University of Malaya), Prof Rajib Shaw (Kyoto University), Prof Danai Thaitakoo (Chula U), Prof Jim Falk (U Melb), Mr Leigh Glover (U Melb)

41. Prof Rajib Shaw noted work already done in the context of CMAS related to the social shaping of water communities challenges and solutions. He further emphasized the need to enhance social resilience in the community and gave a presentation overview.
42. Prof Shaw suggested that the essentials of water communities and its future perspective can usefully be divided into four factors:

- a. Principles of Water Community
 - b. Success Factors and Challenges towards sustainability
 - c. Applicability in the current world and current issues
 - d. Adaptation Principles
43. A successful and sustainable water community is characterized by essential elements such as:
 - Reflecting and achieving the principles, effective linkages and sustainable goals
 - Strong social capital such as trust, cooperation, profound partnership and commitment volunteerism
 - Effective facilitation, coordination and participation
 - Capacity in terms of flexibility, resilience and adaptability to changes
 - Trans-boundary learning, sharing and transferring of knowledge and experiences across all level and generations
 44. Prof Lee Godden is addressing the issue of how environmental law and governance under climate change conditions would be developed. Drawing on her expertise from her integrated water planning and governance experience she described how with changes to landscape environmental problems there have been responses of changes in laws and more broadly in governance. Seen holistically, eco-systems are dynamic and changing, Prof Godden noted the important research question of why, how and who are the people involved in the changing landscape of climate change and eco-systems. Answering this and integrating the insights together provide an important area of research to be tackled.
 45. Prof Lee Godden encouraged the members to consider the move to look at cities as water catchments. She noted that governance was often involved importantly at local scale, and that it was important to examine how local governments responding to climate change, e.g. local council's plan, in relation to sea level and flood risks.
 46. Dr Drobnick noted that the governance area was one in which the value of CMAS and its potential contributions was very relevant. Dr Drobnick suggested that CMAS could bring together insights related to the different thrust areas, and governance. Leigh Glover and Prof Tony Jakeman commented that there were other opportunities in which CMAS could contribute, namely in terms of community events and conferences.
 47. It was agreed that so important is the governance issue that CMAS should organize a special international conference on water communities and governance. Dr Paul McShane, for Monash University, offered that Monash would be prepared to put resources and leadership into organizing such a workshop. His offer was enthusiastically accepted.
 48. The meeting discussed possibilities of funding to explore the important relationship between temperature, PH and nutrients in integrated water systems. The topic of nutrients also sparked significant interest among the participants leading to further discussion of consequential development of climate-related guidelines and their appropriateness in application.
 49. Prof Jim Falk suggested that this area be canvassed with the member universities to see what capacities and opportunities there are in the various thrust areas. Prof Jakeman suggested that a web page might be set up to assist in this process.

REPORTS FROM BREAKOUT GROUPS

Group 1: CMAS Finance and Funding Opportunities and Strategies

Chair: Prof Cornelius Sullivan

Members: Dr Richard Drobnick, Prof Jatna Supriatna

50. Prof Jatna Supriatna drew from the experiences he had with raising money and what he does on a yearly basis to raise USD 5 million for 150 staff.
51. Dr Richard Drobnick updated the members on the APRU Senior Staff Meeting held 10-13 March 2010, in which he presented on the future outlook of AWI. He explained to the group that the initial seed funding of USD 2 million obtained by the former NUS President Choon Fong Shih was expected to run out by August 2010.
52. The options considered were that the APRU Secretariat could be funded either by a APRU member donating an amount to fund the secretariat; an APRU member donating a Managing Director, to devote half of his time to the work; an APRU member underwrites the secretariat; or a non-APRU member fund and acquire the secretariat.
53. Prof Cornelius Sullivan proposed having a two-sided one page statement, and stressed having a diagram in it; as a selling tool for AWI. This was agreed to be done.

Group 2: CMAS Presentation, internal communication, organization for collaboration (including AIT offer of secretariat)

Chair: Prof Tony Jakeman
Members: Prof Danai Thaitakoo, Prof Graham Moore, Prof Sangam Shrestha, Mr Leigh Gover

54. Prof Tony Jakeman gave a brief overview of what was discussed. A wiki or a blog was proposed by the group where information could be shared. This was followed up by Prof Jim Falk who has since created the AWI CMAS Sandbox at <http://awi-cmas.com/>.
55. Prof Cornelius Sullivan stressed it is important to highlight the distinguishing characteristics of CMAS. He noted that there may be many side collaborations within CMAS, but it was also important to brand CMAS itself. He noted that a key selling point is that CMAS is a co-operative group that transcends various countries. He noted it was imperative to find out which philanthropic foundations had similar goals as CMAS.

Breakout Group 3: CMAS Development of research collaboration within thrusts

Chair: Prof David Pierce
Members: Prof Rajib Shaw, Prof Azizan, Prof Liong Shie-Yui, Asst Prof Fu Sun, Prof Lee Godden

56. This group discussed the organisation of conferences for post-doctoral students in the form of a Young Researcher assistance program. This would have long term benefits as a local person could be trained to continue the work, rather than an international person where there could be a disruption or discontinuance. Prof Lee Godden and Asst Prof Fu Sun expressed interest in this idea.
57. The group asked the question of how other programs could network on CMAS, e.g. what would researchers or policy makers be interested in? Some responses included the following:
 - Dynamic downscaling for the region (Expensive but good to do)
 - Issues of scale
 - Multi-disciplinary approach
58. Prof Sangham Shrestha had discussed with Prof Sudip K. Rakshit on the possibility of AIT funding the secretariat. There is a possibility. It was agreed that a meeting to explore these possibilities would be arranged with Prof Jim Falk in Bangkok sometime in late April 2010 in conjunction with his trip to Ho Chi Minh City Vietnam to address a Mekong River Commission Symposium on international research collaboration opportunities..

UI CLIMATE CHANGE RESEARCH CENTRE DISCUSSION

59. The University of Indonesia's vision for the climate change research center includes:
- To hope to improve the researchers and research in the field for climate change
 - To assemble the research community with their research on climate change problems on a international and regional level
 - To develop a breakthrough in the study of climate change from the concepts, analysis and models, with the aim to transform knowledge and build on development
60. The question then would be how to minimize the impacts to environment, changes in living environment, as well as how to innovate or think of other developments to improve the resilience of the economy.
61. There are currently 13 faculties at the University of Indonesia, with a few research centers working independently. It is ultimately hoped that the different climate change issues under these centers could be integrated.
62. Prof Falk noted that an additional potential role for the Centre was to act as the developing country leg of the proposed United Nations Institute for Climate Transition Innovation, that has been under development for the last two years. The institute has the support of the UI Rector and Board, and has been developed with an AU\$50K Victorian government grant. The proposal is now ready to be presented to the Commonwealth for proposed funding. This institute would be linked to the other universities, especially APRU universities focusing on innovation required to bring regions and communities through the climate transition, at the same time being able to predict and mitigate.
63. Prof David Pierce questioned how the Center could bring in business activities. Prof Triarko Nurlumbang responded that at this moment, there was no firm commitment to do so. He said that some of his colleagues and himself have been working on a network to support the Center and there was positive support from the private companies interested in climate change. The center also had support from the Badan Perencanaan dan Pembangunan Nasional (BAPPENAS) and other government partners. The Center could be used as a hub for the Indonesian companies concerned with climate change. This would be the first climate change Center in Indonesia.
64. Prof Jatna Supriatna mentioned that Prof Triarko Nurlumbang had set up a climate change workshop last year in contribution as a start for discussion. He explained how many research centers have started. However, due to lack of funding, they have dwindled away after a few years. He pointed out that Indonesia was the third largest emitter of carbon, and admitted that UI lacked capacity. However, with the CMAS collaboration and inputs, he believed much could be achieved.

WRAP UP & FINAL DISCUSSIONS

65. Prof Jim Falk led the group to consider what they have gained from the meeting and encouraged the members to write a follow up report to the senior management of their universities. Each member gave an overview of what they gained and future steps from the meeting. The response was highly positive with members stressing that they believed that CMAS was in a position to make the next big step forward.
66. It was agreed that stronger branding for CMAS would be advantageous, and that this would be assisted by further activities, such as the proposed Governance Workshop, and a CMAS working website.
67. Dr Richard Drobnick thanked Prof Jatna Supriatna, Rector Gumilar Somantri and the University of Indonesia for hosting the meeting. He briefed the group on the upcoming APRU President's meeting held 30 June to 2 July 2010, at the University of Auckland. If any group member had any points they wanted to mention at the meeting, to bring it up to Dr Richard Drobnick before then.

ACTION ITEMS

ITEMS	DESCRIPTION	ACTION BY
Framework	All members to provide feedback	All
Thrust Areas	Enquiry of collaborative efforts between the different thrust area	Prof Tony Jakeman (Lead) All
	To fill in team leaders on team composition, industry experts, business leaders and potential funders	All
Hydrological Workshop	To fill in on relevant industry experts and collaborators from India, China and Melbourne – For organization of workshop purposes	Prof Jim Falk Prof Lee Godden Prof Graham Moore Mr Leigh G Lover Asst Prof Fu Sun
	Involvement with Asian Institute of Technology on the study of ground water	Prof Sangham Shrestha
Young Researcher Support		Prof Lee Godden Asst Prof Fu Sun
CMAS Wiki Website	Creation of a website where communication is integrated and information can be shared amongst group members	Prof Jim Falk
Funding Institutions	Identify more potential funding institutions and foundations, and to seek them out	Dr Richard Drobnick
	To have a two-sided one page statement, including a diagram for proposal to potential funders	
Water Governance Meeting	Preparation to host the water governance meeting at Monash University	Prof Paul McShane

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Inputs by: Richard Drobnick
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