SaciWATERs

South Asian Water Fellowship

IDRC | CRDI

International Development Research Centre
Centre de recherches pour le développement international

Canada

IDRC SOUTH ASIAN WATER FELLOWSHIPS REVIEW WORKSHOP 'WATER SECURITY'

TAJ VIVANTA, Hyderabad

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SUMMARY

As a part of the South Asia Water Fellowships (SAWA) project, SaciWATERs organized a review workshop on 'Water Security' with support from IDRC and CapNet. The workshop was held on May 23, 2016 in Hyderabad. The purpose of the workshop was to give feedback on the research work done by the 2nd batch of SAWA fellows with an idea that the suggestions and feedback received will help in developing their research findings into a publishable material. Since, the focus of the fellowship is to bring in interdisciplinary lens into research on climate change and water, the workshop apart from providing feedback also intended to self-evaluate through students' abstracts in terms of 'how far have we reached in terms of interdisciplinarity'?

Extended abstracts of each student were sent to the external reviewers well in advance and the reviewers presented their observations during the workshop. In addition the reviewers also reflected on each students abstract individually and the comments were shared with the students. The reviewers are themselves engineers by profession who eventually have learned, appreciated and applied interdisciplinary approach to water issues. Apart from the reflections on student's research there were sessions on 'Interdisciplinary approach to Water Resource Management' and 'Problem to Proposal'. The workshop targeted 18 recipients of the IDRC- SAWA Fellowships from four institutions in four South Asian countries: Bangladesh (Institute of Water and Flood Management - Bangladesh University of Engineering and Technology), India (Centre for Water Resources -Anna University), Nepal (Nepal Engineering College) and Sri Lanka (Post Graduate Institute of Agriculture –University of Peradeniya).

INTRODUCTION

BACKGROUND – THE SAWA FELLOWSHIPS

South Asia's agricultural economies are vulnerable to extreme environmental events. Better management of water and other natural resources is fundamental to the development of the region. Climate variability and change, food insecurity, population growth and urbanization have intensified environmental disasters in the recent past. Poor land and water resource allocation, utilization and pollution have robbed the poor, particularly women, of livelihood and dignity. Such broad, yet closely linked issues can only be effectively tackled through a holistic interdisciplinary approach. The IDRC-SAWA fellowships seek to address these issues, by providing the opportunity to train a generation of water professionals to tackle water issues using multi-disciplinary approaches that are sensitive to women, the poor, environment and sustainability.

This project continues as part of an earlier project coordinated by SaciWATERs namely the Crossing Boundaries project. This project is funded by the International Development Research Centre (IDRC) and is implemented by SaciWATERs and its four partner institutions, namely.

- Institute of Water and Flood Management (IWFM) of the Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh
- Centre for Water Resources (CWR), Anna University, Chennai, India
- Centre for Post Graduate Studies, Nepal Engineering College (*nec*), Kathmandu, Nepal.
- Post Graduate Institute of Agriculture (PGIA), University of Peradeniya, Peradeniya, Sri Lanka

The objectives of the project are firstly; to create a new generation of interdisciplinary water professionals in South Asia trained to deal with issues of climate change adaptation, water and food security, in order to do this, this project has instituted the IDRC-SAWA fellowships. Secondly, the project aims to generate action-oriented research in the aforementioned fields through Master's degrees in Integrated Water Resource Management in Bangladesh, India, Nepal and Sri Lanka. Thirdly, it has been noted that women and girls are often the primary users, providers and managers of water in rural and urban households, thus being the most affected by planning and policy in water resources. It has often been seen that women's voices are not taken into consideration when forming policy. Additionally, it is seen that women are underrepresented in the field of water resources engineering and policy making. This project seeks to address this imbalance by awarding 80 percent of the fellowships to women; the rest of the fellowships will be awarded to men from lower socio-economic groups. Fourthly, it aims to share knowledge and ideas about water issues in the South Asian context, through meetings and exchanges between fellows. This is especially important as it fosters the spirit of regional and trans-boundary cooperation in the fellows, which would hopefully lead to larger regional cooperation in future. Such interdisciplinary, regional and trans-boundary co-operation is essential for IWRM approaches. Fifthly, the project supports free access to the journal "South Asian Water Studies" and encourages young water professionals to publish peer reviewed journal articles.

ORGANIZERS

SaciWATERs: the South Asia Consortium for Interdisciplinary Water Resources Studies is a policy research institute at Hyderabad, India and working on the issues of water resources education, capacity building, research and action in South Asia. It is committed to bringing about structural changes in the dominant water resources management paradigm in South Asia by focusing on transforming water resources knowledge systems through working with universities and academic institutions. The key ideas are in interdisciplinary approach to undertaking water resources issues from a pro-poor, gendered and human development perspective and emphasis on exchange, interaction and collaboration at South Asia level. SaciWATERs is active in three domains- Education, Research and Advocacy. (www.saciwaters.org)

SPONSORS

International Development Research Centre (IDRC) is a Canadian Crown Corporation that initiates, encourages and supports research in developing countries in order to help find practical and sustainable solutions to social, economic and environmental problems that are being faced in these countries. Additionally, IDRC on the means for applying and adapting scientific, technical and other knowledge to the economic and social advancement of those regions. (http://www.idrc.ca)

Cap-Net UNDP is an international network for capacity development in sustainable water management. It is made up of a partnership of autonomous international, regional and national institutions and networks committed to capacity development in the water sector. Cap-Net UNDP was initiated at the UNDP Symposium on Water Capacity Development in 1996 and launched in 2002 by the United Nations Development Programme (UNDP) and the UNESCO-IHE Institute for Water Education with funding from the Dutch Government. Since then, Cap-Net UNDP has grown into a global hub for capacity development and networking in sustainable water management with additional funding from the Swedish and Norwegian Governments, and the European Union. The Cap-Net UNDP programme is a part of the Water and Ocean Governance Programme of UNDP, within the Sustainable Development Bureau for Policy and Programme Support. The programme is executed by United Nation's Office of Project Services (UNOPS), Water and Energy Cluster.

WORKSHOP OBJECTIVES, PARTICIPANTS PROFILE AND EXPECTED OUTCOMES

OBJECTIVES

The main objective of this workshop was to provide feedback on whether and how the students have incorporated interdisciplinary lens in their research and also to help in filling the existing gaps in their research to further develop it into a publishable material.

PARTICIPANTS PROFILE

The participants for this review workshop were those who were selected as fellows as part of the second batch of South Asia Water Studies (SAWAS) fellowships, from each of the four partner institutes. All participants were pursuing postgraduate level courses in Integrated Water Resources Management (IWRM). Fellows were in the last phase of completion of their Masters' dissertation work.

OUTCOMES EXPECTED

It is expected that the students will make use of the constructive feedback received from the reviewers and will further improve their study to be able to publish the same.

PROGRAMME DETAILS

EXTERNAL REVIEWERS

- **Prof. Dr. Peter Mollinga**- Professor of Development Studies, School of Oriental and African Studies (SOAS), University of London
- **Prof. Nimal Gunawardena-** Professor, Department of Agricultural Engineering, University of Peradeniya, Sri Lanka

RESOURCE PERSONS

- **Dr. Anju Gaur**- Water Resources Specialist, World Bank
- **Mr**. **Sumit Vij**- PhD Researcher at Public Administration and Policy group, Wageningen University

FACILITATORS

- **Dr. Anamika Barua**- Executive Director, South Asia Consortium for Interdisciplinary Water Resources Studies (SaciWATERs). Hyderabad, India
- **Ms Monica Priya**- Research Associate, SaciWATERs, Hyderabad, India.

Recap of the experiences from CB project

Prof. Peter Mollinga was a key person behind conceptualizing the Crossing Boundaries (CB) project. At a later stage Prof. Nimal became the project director during his engagement with SaciWATERs. Following are the highlights that emerged from this session: -

- Water education in south Asia is engineering and hydrology focused and there is an absence of social component. This was the thinking that went into conceptualizing the project.
- "Gender" has always been the most sensitive issue and the hardest challenges faced in the project.
- The project has been successful in creating resource base of books and educational materials on IWRM.
- Recommendation to establish an alumni group consisting of fellows from the CB and the SAWA project.

Experience Sharing by Coordinators:

The coordinators from the Partner Institutions (PI) gave an overview of how these programs have been firmly established over the years and how the fellowship has brought a change in the way water resource management is looked at. Also they shared the research focus in each of the PI.

Prof. B.V. Mudgal:

- The focus at CWR is examining the issues of water security, food security and livelihood adaptations in the context of climate change and climate variability in the Vellar River Basin.
- To address issues of climate change, a paradigm shift is needed from exploitative technologies to regenerative technologies. The only way to do this is through an integrated approach.

> *I have gained a lot of exposure from these projects. I am a converted person although a hard-core civil engineer by profession with hydraulics background*
>
> - Prof B.V. Mudgal

Prof. Khem Raj Sharma

- Student's research has been able to capture a wide number of issues relating to water quality, livelihood integration, ecosystem services, institutional and policy processes, water security and management.
- One of the major achievements at *nec* has been starting the IWRM programme, which is a unique programme in the country and is much appreciated.
- The institution has been able to disseminate the ideologies of IWRM to other academic institutions through workshops. One distinct achievement in this regard has been that these institutions have started courses relating to IWRM.

Prof. Shahjahan Mondal:

- The SAWA fellowship project has been instrumental in shaping the academic program at BUET.
- The fellowship program has helped in recruiting good students in terms of commitment, seriousness and quality of work.

BUET is a technical university and when we go for interdisciplinary course curricula it is not easy to get it passed through the academic council. But there is a great sense that people are accepting this and it seems that interdisciplinary aspect is getting mainstreamed in the university.

Dr.Dhammika Dayawansa:

- The research focus is in Deduru Oya area in Sri lanka as there is a issue of water scarcity here during the dry season.
- The student's research also looks into the areas of water quality, soil erosion and health and sanitation aspects.

Reflection on SAWA fellows' research; Prof. Nimal:

Extended abstract of the students was sent to the external reviewers. Based on these abstracts the reviewers made observations and comments. Prof. Nimal structured the presentation that gave a brief overview of each of the research project and the concluding remarks. He categorized the 18 projects into three categories based on their area of focus.

1. Impacts of climate variability (3 projects)
2. Assessment and the impact of climate variability using case studies (9 projects)
3. Projects trying to come up with certain interventions to cope with impending climate change (6 projects)

He observed that all these projects have two basic components. One component is relating to the technical aspects, which is understood as using different models in order to predict climate change. The other component is to go to the field, meet the community, use various PRA tools and then try to incorporate the needs of the society and trying to match the climate change scenario. Following are his remarks:

Remarks:

- All the projects have addressed relevant and current issues.
- All the projects have used field research methodology like questionnaire survey, FGDs, KPIs, transect walk etc. Although this is appreciated there is a gap of interdisciplinary focus.
- Gender aspects have been included in few of the projects.
- Use of technological aspect in the projects has been very well looked after.
- The most interesting aspect seen is combining technology and social science. Some of the techniques, indices and frameworks that have been used by the students to integrate

technological aspects into social aspects are new. Staff and the students need to be appreciated on this

This was followed by a short discussion with the students on '***Do you find it easy to link the technological information with the field findings and your experiences and challenges in the field***'?

Following were the responses from students

- Lack of rapport building due to lack of time. This therefore restricts the interaction to question and answer mode.
- Lack of confidence building with the community that is hindering the data collection.
- The major challenge in Nepal has been the devastation caused by the earthquakes, which hindered in the fieldwork. Another issue has been finding the right person to interview, as people were dislocated.

As a final observation it was suggested that the students include all the problems and constraints encountered into their thesis so that the final outcome is justifiable.

Reflection on SAWAS fellows' research; Prof. Mollinga:

Professor Mollinga talked about the collection as a whole. He looked at it from a question on ***'How far have you reached in terms of interdisciplinarity?'*** Following are some observations:

- The idea of participatory methods in data collection has really gone in, in the form of focused group discussions and interviews even though it is a part of a technical study. This is a very positive development.

The scope of Data Collection has definitely improved as compared to conventional engineering programs

Interdisciplinarity ≠ using participatory methods

- There is a tendency in the papers somewhere that we are interdisciplinary because we are using participatory methods.
- Doing this kind of fieldwork brings out a lot of issues of rapport building with your research population, your positionality, the local politics, the complexity, and contested nature of local issues and impacts. These kind of issues have to be written in the methodology section because there will be a lot of learning from this in the future.
- The nature of technical sciences and natural Sciences on one side and the Social Sciences on the other is different. It is a forced dichotomy. There is a type of research that is very strong in the papers is fieldwork is about data collection.
- Anthropology, Sociology and certain kinds of Economics are not about data as such. It is about

Interdisciplinarity is about how do you combine the data collection part of your research with this slightly different way of thinking on the social relations side

investigating and documenting relations, causalities, processes etc.

- On the Social Sciences side there is very little theoretical grounding that'll help you think and an interdisciplinary way while there is sufficient literature review done on the technical aspect.

What is interdisciplinary?

Interdisciplinary is about wicked problems. There are two elements of wickedness.

- They are analytically wicked that is they are complex.
  - They are multi causal and multidimensional and they are not simple or linear
  - To defend interdisciplinarity as a front line of academic pursuit use the word complexity. Complexity in this sense means multiple causes working together at the same time and influence each other.
- The second element of the wickedness is kind of political wickedness, that there is not one best solution.

> The idea of complex system is the academic version of saying interdisciplinarity.

One way to operationalize these two forms of wickedness is by the notion of problem shed. A problem shed is like a conceptual construct in which you model what exactly your research question is.

The concluding observation made was what is the capacity of that kind of interdisciplinary conceptual modelling of Research question? Do you feel sufficiently prepared for that? Based on the above mentioned concepts the papers were classified as interdisciplinary, poor disciplinary and something in between these two. This was followed by a group discussion wherein each country group was asked to discuss two questions and then come up with few key points.

1. What could have been done or what should have been done to prepare you for this type of interdisciplinary integrated research?
2. What demands or suggestions do you have for your teachers and the institutes while you study, to be able to do it more successfully/ efficiently?

Discussion highlights:

- A Research time frame to be designed and followed
- Developing rapport and establishing contacts in the field much before the start of actual fieldwork.
- Reviewers of our work in the university from both sociology and natural sciences background
- There is a need to strengthen the conceptual learning
- More supporting literature on interdisciplinary research
- More time is needed in deciding the research problem

- Reading materials available are more technical in literature. Insufficient reading material on interdisciplinary research to make a sound basis.
- Bring in more interdisciplinary faculty
- Group research in the 1st semester

Interdisciplinary approach to Water Resources Management: Dr. Anju Gaur

Dr. Gaur laid emphasis on the need of interdisciplinary water professionals in todays' world in organizations like World Bank and in various other government departments. Professionals with such skills are important to make projects functional. In this regard she quoted an example of Minor Irrigation project funded by the World Bank and implemented by the Government. Dr. Gaur mentioned how the presence of only engineers and absence of social scientists in such projects relating to technology, social welfare and environment can hamper the implementation and the functioning of the project.

Problem to Proposal: Mr. Sumit Vij

The session gave a brief introduction to the main components of a proposal. Following were the highlights of the session.

- Writing proposal is both about science and art. It is the art of writing and science of what you are doing
- Interdisciplinary thinking and writing should start from the moment you start thinking about the proposal
- The two important components of a proposal are its scientific and societal relevance.

PROGRAMME AGENDA

TIME	PROGRAM	RESOURCE PERSONS
9:30 – 10:00	Registration	
10:00 – 10:15	Welcome Address	Dr. Anamika Barua
	Setting the context of the Workshop	
10:15 – 10:30	Introduction of the Reviewers and the Resource Persons	Ms. Monica Priya
10:30 – 11:00	Recap of the experiences from the CB project since its inception	Prof. Peter Mollinga
11:00 – 11:20 Tea Break		
11:20 - 11:45	Experience sharing by coordinators	Dr. Daywanasa Prof. B.V. Mudgal Prof. Khem Raj Sharma Prof. Shahjahan Mondal
11: 45 – 13: 00	Reflections on SAWAS fellows research	Prof. Nimal
13: 00 – 13:45 Lunch		
13: 45 – 14:45	Reflections on SAWAS fellows research	Prof. Peter Mollinga
14:45 – 15:15	Interdisciplinary approach to WRM	Dr. Anju Gaur
15:15 – 15:45 Tea Break		
15:45 – 16:45	Problem to Proposal	Mr. Sumit Vij
16: 45 – 17:00	Vote of Thanks	Ms. Monica Priya

LIST OF RESEARCH TOPICS

S.NO	NAME	TOPIC	COUNTRY
1	Aniqua	Valuation Of Ecosystem Services Of Tidal River Management In Pakhimara Beel: An Ecosystem Based Approach To Ensure Water Security	Bangladesh
2	Archana Chaudhary	Impact of Climate Variability on Ground Water Security of Lower Bagmati Basin of Nepal	Nepal
3	Arivoli Elangovan	Role Of Rehabilitated Tanks In Improving Water Security In Gomuhi Sub Basin Of Vellar Basin	India
4	Bandana Shrestha	Water Security Situation in Upper Bagmati Basin in Present and Future Climatic Scenarios	Nepal
5	Durgadevi Gnanaguru	A Study Of Agriculture And Domesticwater Footprint And Its Impact On Water Security Of Veppanthatai Block Of Vellar Basin	India
6	Hemalatha Murugesan	Role Of Water Users' Associations In Improving Water Security- A Case Study Of Upper-Vellar Sub-Basin	India
7	Hemanthi Dhammika	Small scale water interventions for improving livelihood of rural smallholder farmer in a selected small tank cascade system in Sri Lanka	Sri Lanka
8	Jyoti Dahal	Effect of Urbanization and Urban water extraction on water security of Jhaukhel	Nepal
9	K. Kirinde	Water regimes cum enhanced ecosystem as an adaptation for climate variability in paddy cultivation	Sri Lanka
10	Manina Baidya	Potential of Wastewater Reuse for Water Security in Agriculture: A Case of Harisiddhi Wastewater Treatment System	Nepal
11	Nishanka Jayasiri	Impact of deduru oya dam construction on downstream environment --assessment of environmental flow	Sri Lanka
12	Pradeep Kumara	Identification and Assessment of Technical and Socio-economic Aspects in Cultivation Other Field Crops (OFC) in *Bayawa* Minor Irrigation System	Sri Lanka
13	Priyadarshini	Impact Of Crop Diversification On Water Use And Water Security At Village Level	India
14	Ramani Saumyarathna	Effect of Climate Variability on Water Access, Allocation, Productivity and Conflicts in *Hakwatuna Oya* Watershed in *Deduru Oya* basin	Sri Lanka
15	Samiul Kader Khan	A Comparative Study on Assessing Gender Perspectives for Adopting Different Farming Practice in Coastal Upazila of Tala in Satkhira	Bangladesh
16	Sivaranjani Umapathi	Rainfall Variability Under Changing Climate: An Impact Study On Drinking Water Security At Village Level	India
17	Shyam P Pant	Management And Conservation Of Water Resources In Bagmati Basin	Nepal
18	Sumayyah Tehsin	Assessing Agricultural Water Security In Different Agro-Ecosystems Of Southwest Bangladesh Using Analytic Hierarchy Process	Bangladesh