Capacity building for sustainable water management in Bangladesh now and in the future

Understanding sustainable levels of water use, particularly groundwater, for irrigation in the north-west region of Bangladesh is vital for water and food security through improved integrated water resource management and agricultural (food) production.

Researchers from Bangladesh and Australia are working together with policy makers in Bangladesh to develop tools and capabilities to maintain a sustainable level of water use for irrigation.

Looking to the future the project is supporting and mentoring over 20 students in integrated water resource management with 10 students focussed on gender and socio-economic topics for enhanced understanding of gender and water management connections.

Background

Groundwater irrigation is vital for self sufficient rice production in Bangladesh, and sustaining this resource will ensure future food security. However, information and data about how water moves through, and is used in regions, is needed for evidence based integrated water resource management.

The Commonwealth Scientific and Industrial Research Organisation (CSIRO) together with partners in Bangladesh through the Sustainable Development Investment Portfolio (SDIP) are establishing critical new knowledge and tools to inform integrated water management in the north-west region of Bangladesh.

As part of the project, the team is working with the Bangladesh Agricultural University (BAU) to support and mentor 20 Master of Science students to enhance technical skills in both the biophysical and social sciences. The findings from one of these projects is highlighted in the blue box of this fact sheet.

Critical new knowledge from this project of the community-level implications and impacts of various management scenarios on different groups, including women will assist in consideration of different land use options to meet food security and water needs.

Village in the Barind Tract, Bangladesh Source: CSIRO

Benefits of capacity building

The partnership between CSIRO and BAU strengthens the outcomes for the sustainable water use project both in Bangladesh and Australia.

In Bangladesh the partnership will strengthen the research capacity of staff and students in conducting integrated biophysical and social science research and enhance their capacity to engage in water and agriculture

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planning and policy dialogues, either as university staff, officials in government ministries, or consultants.

In Australia the partnership strengthens understanding of the biophysical and socio-economic factors for integrated water modelling and the impact different water management scenarios may have on the daily lives of different groups, e.g. farmers, irrigation managers, families, women, etc.

Training

In early 2018 a five-day training course was undertaken at BAU on methods of field based reliable data collection. The CSIRO project team covered basic gender and development concepts, data collection methods as well as the lessons learnt in identifying ways gender perspectives can be incorporated into water management activities.

Added to this were several focus group discussions on women's involvement in farming activities conducted by CSIRO and BAU in the north-west region. The discussions provided greater understanding of current agricultural practices, challenges and opportunities of rural life, women's status and outmigration issues in the village.

Meeting with local farmers and community leaders in Chillay village, a small farming village in the Division of Rangpur Source: CSIRO

Student training workshop at the Bangladesh Agricultural University, Mymensingh Source: CSIRO

Project profile: Tahmina Akhter

Climate change and water stress in north-west Bangladesh: A study on farmers' perception and adaptation mechanisms

Data collected and analysed by Tahmina provides some interesting insights into farmers' perception and adaptation to climate change.

After conducting and analysing 720 surveys Tahmina found the majority of male and female respondents recognised increasing temperatures and changes in rainfall patterns as a consequence of climate change. Huge changes in rainfall patterns included unexpected rainfall, rainfall with strong winds, and rainfall with more thunderstorms and lightning.

About 70% of male and 65% of females recounted that drought occurs every year.

The main adaptation strategies to drought that farmers in the study areas use included: planting short duration and drought tolerant rice varieties; supplementary irrigation for Aman and Boro rice; cultivation of non-rice Rabi and horticultural crops; water harvesting techniques; and improvement of irrigation channels.

Influential factors in determining a farm households' decision to adapt to climate change and water stress include: age of the female, frequency of contact with extension officers, drought severity and credit facilities. Negative factors for farmers' adaptation decisions included age of the male household head and household size.

Policy recommendations from Tahmina's work include easier access to climate related information, wider access to education for females, ensuring institutional support for farmers, e.g. extension officers, climate change adaptation strategies that consider gender-specific differences and region-specific government policy for climate change adaptation.

Tahmina's Masters thesis and those of other Masters students can be found here: https://research.csiro.au/sdip/projects/bangladesh/

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The CSIRO SDIP project team maintains an up-to-date website for sharing material and news on project activities
https://research.csiro.au/sdip

FOR FURTHER INFORMATION

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