Session Partnerships: April 13th 09.00 hrs

4s2a: Food system transitions in deltas under pressure

Water demand and water availability for future food production in Bangladesh

Snethlage J 1), Halim Farhad Sikder A 2) Abdur Rashid M 2), Terwisscha van Scheltinga C 1), Mulder M 1), Cruisen J 1), Veldhuizen A 1)

1) Wageningen University and Research, the Netherlands

2) Center for Environmental and Geographic Information Services (CEGIS), Bangladesh

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Bangladesh is developing rapidly towards a middle-income country. The Bangladesh Delta Plan 2100, approved in September 2018, is a long-term strategic plan, supporting developments towards the goal of a prosperous and sustainable Bangladesh. With the developments of a more prosperous and growing population, an important question is whether in future the demand for fresh water to grow food for the increasing population can be met. Not only is this question relevant for Bangladesh but many countries around the world are facing similar challenges. We considered several important factors: population growth, water demand, land use, climate change and diet change. For all factors, fresh water availability is crucial according to the experts and the stakeholders. Therefore, an in-depth methodology is being developed on how to quantify the water demand for the crops needed for food security. This is done at different spatial scales using different models. Global modelling is used to analyze the fresh water demand of rice crops on a national scale. Local modelling is used to reflect on the fresh water demand of crops on a regional scale. Fresh water demand may exceed fresh water availability, especially during the dry season and because of salt water intrusion. Therefore, an important part of the methodology is to also use fresh water availability to estimate future food production.

The output will give better insights in the trends in water and food demands, water and food availability and their interlinkage. The results can be used to assist policy makers to take decisions for Bangladesh to produce enough to feed its population, now and in the future, in a sustainable manner.

Keywords: WaterFoodNexus, salinity, water availability, water demand, Bangladesh Delta Plan 2100