

## **Broader Impacts plan for interdisciplinary monsoon project in Bangladesh Assignment for GEARS workshop – Honolulu February 2014**

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### **Project Background:**

Our project is interdisciplinary and therefore outreach and broader impacts are key elements to its success. We will look at the monsoon in Bangladesh, which millions of people depend on. There are still many elements of the monsoon in Bangladesh that are still unclear. We will therefore gain a greater understanding for these systems as well as their impacts on people's lives. From this project our audiences are very clear and we aim to successfully communicate with them through our broader impacts plan.

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### **Broader Impacts Plan:**

Since the monsoon affects farmers in Bangladesh we will provide information to them. However, this information has to speak to the perceptions of the people for it to be understood. The politicians in Bangladesh are responsible for policy that manages agricultural resources. It is important to inform them about the social linkages between the climate and society. The forecasters at the BMD are responsible for providing accurate information about the monsoon climate. Our scientific results and knowledge about people's perceptions could help them develop new and useful forecasting systems. We therefore have 3 main audiences:

- Farmers in Bangladesh
- Policy makers (local since there is a detachment from national government)
- Forecasters

We will also actively communicate stories about the project and our results to the general public and, more specifically, undergraduates. Undergraduates could benefit or even be inspired if they understand that science does not have to be a stand-alone activity. Through successful collaboration science can work with other fields of research to answer the big societal questions regarding climate.

The farmers in Bangladesh need to be a part of the discussion throughout the project. We will work with local agricultural offices in Bangladesh to connect with the farmers and get to know them. Through the discussion, the farmers will understand the climate system better and we will understand the farmer's needs and perceptions. This discussion will begin with a workshop where natural scientists and farmers will discuss the monsoon and their relation to it. For this discussion to be successful, we have to hire moderators who we know understand the perceptions of each.

The farmers will also be fully involved in a citizen science project so that they gain greater understanding for the climate elements around them, and feel greater ownership of the project themselves. We plan to distribute 100 rain

gauges to different farming families. Masters students from a nearby university will collect and record data for the project and their own research. Other organizations have experience with this type of citizen science. We therefore hope to collaborate with the Community Collaborative Rain, Hail and Snow Network ([www.cocorahs.org](http://www.cocorahs.org)) who have been doing this for a long time in USA. Through these interactions, the natural scientists will gain an understanding of what is important to the people. With this knowledge, they can tailor their analysis so that the resultant information is actually relevant to the farmers.

Climate knowledge should influence agricultural policy. And agricultural policy influences the farmers lives. We will therefore also communicate all our findings, from the social and natural science research, to local politicians. They will also be invited to the workshops to contribute to the discussion. At the end of the project we will also draw up policy briefs for local politicians.

Climate knowledge should influence weather forecast systems. And weather forecasts influence the farmers lives. We will include the Bangladesh Meteorological Department (BMD) in the project and communicate, primarily the natural science research, to them. Through previous discussions, the BMD are mostly interested in climate science that can help to improve their forecasting systems. We will hold a series of meetings with the forecasters to explain our findings. We will use this platform to stress the importance of using social science to understanding the importance of different aspects of the monsoon climate on the farmers of Bangladesh.

Although the general public are not directly involved in this project, it is important to inform them. We are doing real interdisciplinary research, which creates interesting stories for the general public. For this, we will include regular blog updates on the project webpage. These will increase in frequency when we are on project trips to Bangladesh. We already have Twitter feeds from the project, which facilitates outreach but also conversations with fellow researchers around the world.

We will also actively include undergrads in this project. We feel that we have important lessons to teach about how science is not just a stand-alone research field, but that it can successfully interact with other fields. There are challenges, but with good communication, these can be solved. We hope that this approach might inspire some undergrads to think more creatively about the science they are studying and encourage them to stay on in a research career. We have good contacts with the Geography Department and Science Faculty at University of Bergen and are planning seminars that will be integrated into the undergrad programs for Geography, Meteorology, Oceanography and Geology. For this we will collaborate with the Education Department at the university.

Discussions will be going on across disciplines and societal boundaries. At present the Internet is not very widespread in Bangladesh. Despite this it is important to give everyone the opportunity to interact in this way if it is possible. We therefore need to develop an interactive webpage, where we can store the following:

- Project background, objectives and team
- Important dates
- Citizen science results
- Policy briefs
- Discussion forum
- Project blog for general outreach

Through this Broader Impacts plan, we hope to make our interdisciplinary project truly interdisciplinary. The only way this can happen is through iterative discussion that involves all the parties involved. Only then might our results be communicated responsibly and can successfully be the basis of action!

### **BUDGET**

This is such a huge importance to the project that the budget has been increased.

- Workshop costs
  - Mediators
  - Citizen science – equipment plus stipends to Master students in Bangladesh
  - Web-site development – outsourced to professional consultants.
  - Short-term salaries for educational department at University of Bergen
  - Salaries for all researchers involved to take part in outreach. Here we will expect that researchers use around 10% of their time on outreach activities.
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