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War Game 1 Reflection

Coming from Wisconsin, I was excited to be put on the Agriculture team. I grew up next to a corn field, and my sister rode horses at the farm down the road. I felt that I had an advantage because I had grown up in a suburb in the country and that my background would be helpful in my research. I quickly realized, however, that the agricultural sector in India is vastly different from the farms I grew up with. The environment, the scale, the purpose, and the issues they face are completely different between Wisconsin farmers and Indian farmers. The small, rainwater dependent, subsistence farmers of India have very little in common with the larger, irrigated, and for-profit farms around my home. I had to quickly put aside my preconceptions about farming and the agricultural sector in the U.S. in order to understand what agriculture in India really is.

My section of research was centered on engineering adaptation, however I began by researching the largest challenges farmers face and what issues need to be addressed. As stated in the presentation, the lack of rural road infrastructure (as we experienced firsthand on our trip to the Sundarbans), cool storage facilities, and irrigation are the largest issues for farmers. From an engineering adaptation standpoint, these are extremely fixable problems; roads can be repaved, storage facilities can be built, and irrigation systems can be installed, however a lack of resources is a huge barrier. Adding these adaptations costs time, money, and resources that just aren't being allocated to rural areas. This is why, coming into the war games, we made the development of rural infrastructure our top priority- it doesn't require research or expensive technologies, just a small commitment that can improve the livelihood of farmers and villagers throughout India.

An additional issue was that irrigation requires water lines, which means improved pipes or more sophisticated rainwater collection techniques, along with improved electrification techniques to rural areas to power the irrigation systems. After doing research, I knew that irrigation systems were an expensive solution and required help from the water and energy sectors, but I thought it was the only option. I was pretty convinced that installing irrigation lines in rural farms was the best answer. However, after visiting the Natural Remedies farm, I realized that is not necessarily the case. By using relatively simple techniques and a lot of plant expertise, they were able to transform barren, infertile land into a viable farmland. I realized that updating farming

techniques and education could be just as effective and probably more realistic in terms of budget and resources. Looking back, I wish I would have known more about these “natural remedies” earlier so I could incorporate them into the Agriculture Sector’s plan.

On the opposite side however, I believe that sometimes the technological solution is necessary and advantageous. When visiting IIT Bombay, one of the speakers addressed the issue that tons of new technologies are created every year and produced at a low cost, however many don’t adopt them because these new developments change the way things have always been done. All over the world, including in rural India, people are resistant to change. To me, someone who is inspired and excited about technology, this hesitancy is incredibly frustrating. It makes me wonder if rural farmers had access to irrigation systems, would they wish to install them and change the way they have farmed for the past hundred years? Would they see the opportunity, or just turn it away because of our innate inability to accept change? It seemed absurd that someone would turn it down.

One would think that these people with nothing- inadequate access to water, sanitation, healthcare, a reliable food source, and energy: the crucial sectors of our war games- should want to accept any help they could get. After reading many articles about farming, I had this image in my head of what it meant to be a rural farmer in India, and I felt that I was somewhat of an expert in this sector. However, just as I had been so wrong comparing Wisconsin farmers to Indian farmers, I was completely wrong in expecting all rural farmers and villagers to be suffering and depressed by their circumstances. While driving to the Sundarbans, we drove through rural farmland and the small village of Canning. Along the road I saw kids playing in the field next to goats and cows, men building a new house from handmade bricks, and a woman spreading seed out to dry in the sun. The city had a market that was filled with people, food, colors, spices and shouting. I began to realize how misguided I was in reading statistics on Wikipedia to determine the livelihood of an entire group of people.

Overall, I learned a great amount about the agricultural sector as a whole, as well as some of the main challenges India faces in the other sectors. I feel that from this war game and my research, I gained a broad sense of the main issues in India today, and some of the possible (and definitely controversial) solutions. However, I think that I definitely learned a lot more about the real state of India by visiting the real thing. It’s so easy to see that the people in Dharavi make about \$0.50

a day and assume they could never be happy, or that rural farmers make only 10% of the crop profit and assume that they must be suffering, without stopping to really look at these people as people. I learned from these war games that research and statistics only can tell you so much. I am glad that I have the background knowledge from the games, but it would be useless without experiencing these places and meeting these people firsthand.

From the negotiation process I realized just how difficult it is to come to a consensus. It took so much time, effort, and conflict to come up with a solution that was mutually agreed upon. However, on the main issues such as dams, GMOs, and nuclear power, we vastly oversimplified and overlooked many of the consequences. As part of the agricultural sector, we didn't stop to consider the implications of dams on farmers who rely on the river downstream or the consequences of nuclear waste reaching the fields and infiltrating the crops. It seems impossible to ever come up with a perfect solution economically, environmentally, and socially. Suddenly I have a lot more respect for policy makers and understand the extreme difficulty of forming a unified policy out of a wide range of views and priorities. (But I still think congress could do a little better job cooperating between parties). In general, I realized that I am very glad my interests lean towards the science side rather than the policy side of climate change. Even predicting monsoons is probably easier than coming up with comprehensive policy solutions.

While everyone including myself agreed upon some of these controversial ideas at the time, from a personal viewpoint rather than an agricultural sector representative, I sincerely hope India does not decide to implement all aspects of our plan. Some facets, including those on infrastructure and healthcare development are incredibly important, however I personally disagree with the use of GMOs and am skeptical about building more dams. Unfortunately, I don't know of a more favorable solution. The final outcome became a decision between the lesser of two evils: should we continue polluting the atmosphere with coal power plants or create toxic, radioactive waste from nuclear plants? Should we let people go without water and sanitation in many areas or should we build a dam and alter the river ecosystems and water supply for villages who depend on the river flow? Should we let people die of starvation or give them genetically modified crops possibly containing carcinogens? In the span of two hours, we were forced to decide on these issues, however it is so much more complicated than we can imagine.