Meeting Minutes

USDA NIFA Climate Change Project Meeting #1

Date: 08/02/2018

Location: Washington State University, Pullman, WA

In Attendance:

FAMU: Drs. Gang Chen, Aavudai Anandhi, Johnny Grace, Lucy Ngatia and Siment Li

WSU: Drs. Joan Wu, Jan Boll, Vicki McCracken, Ani Jayakaran, Zhazira Alisheva and Nannette Huber

Meeting Summary:

Today's meeting started with Dr. Gang Chen's presentation covering the background, logic model, goals/objectives, hypotheses, tasks, and preliminary results. It was followed by Dr. Aavudai Anandhi's introduction of vulnerability model, its components and applications (with recommended publications). It was made clear that the economic/policy analyses would be the foundation of this work, while vulnerability analyses would serve as the umbrella of the concerned project issues. For this work, the data sources (input) shall be modelled and these model outputs will be used as the inputs for vulnerability analyses, of which the results will be used for economic/policy discussions. By the end of the meeting, the following points of agreement have been reached:

- 1) Background/data reviews (meta-analyses) shall be performed for the study areas/regions at the start.
- Appropriate models should be discussed and explored along with the progress of this project.
- 3) The availability of required data for specific models, as well as the feasibility of using currently available data for these models, shall be carefully discussed.
- 4) The attendees also agreed that more careful assumptions and more specific hypotheses should be made for each small aspect of this large project, meaning that each goal needs to be defined carefully and could be reasonably tested.
- 5) Systems thinking shall be implemented throughout this project, with a big-picture loop view in mind.
- 6) Definition of system was discussed in order to understand the functioning logics of the vulnerability model. It was emphasized that the outer layer of the system would be the environment.
- 7) The project should start from simplicity to complexity. It was recommended that representative land uses could be investigated at the beginning before system approach could be performed by creating different environment scenarios.
- 8) The attendees agreed that a repository (e.g., Dropbox, Google Drive, and One Drive. If a repository is to be built up, it shall also be important to index the document folders by using the meeting numbers. Past presentations and all relevant documents (e.g.,

papers) shall be shared using this repository.

- 9) Different open-source data shall be used for the analyses in this project. Some data (e.g., soil erosion results) cannot be simply applied directly from region to region. In the situation of data unavailability, laboratory experiments under the similar controlled soil conditions shall be made available as compliments.
- 10) The output data from different studies must be made compatible for the other model(s). That is, how to make the different models talk to each other?
- 11) Task 1 was assigned by groups. The attending institutes shall start trying the models and exchange experience later. The FAMU side shall test SWAT and DNDC, while WSU side will work on WEPP and DNDC. The ForHym model shall be introduced tomorrow morning.
- 12) Task 2: FAMU will work on the vulnerability analyses; FSU shall quantify extended stressor indicators. Model selections are CmpSyst, InVEST and so on here.
- 13) Local USGS experts in Tallahassee shall periodically check the data and judge whether some model outputs are reasonable in a timely manner.
- 14) Farm owners' unwillingness to cooperation was identified as a big barrier for land use change studies.
- 15) An advisory committee should be established early so that decision makers and other technical personnel to give some external voices for this project. This was reported and anticipated according to the grant proposal. Names of suitable people can be recommended by emailing Dr. Gang Chen.