

CLIMATE CHANGE: ITS DANGER FOR OUR PRODUCTION AND WHY IT ESCAPES OUR PREDICTION

OPENING [09.00] MCwelcoming

[09.10] Welcoming speech – Dr.ArieSetiabudiSoesilo, M.Sc. (Dean of Social and Political Science Faculty)

[09.20] Welcoming speech –Dr.JatnaSupriatna (Chairman of RCCC UI)

[09.28] Announcement of International Symposium of Journal *Antropology Indonesia* by the Editor-in-chief of journal *Antropologi Indonesia*

SPEECH [09.30] Dr. LismanManurung, Ph.d.(moderator)

- Introducing the keynote speaker, Prof. KeesStigter

[09.35] Keynote speech – Prof. KeesStigter

As we know, the climate on earth is changing. It becomes the new significant hurdle in some aspects, for example in agricultural. There is general and widely held scientific consensus that the observed trends in atmospheric & ocean temperature, sea ice, glaciers as well as climate extremes, during the last hundred years, cannot be explained solely by natural climate processes. It happens due to human activities that give influence to the composition of the atmosphere, or we can call it as anthropogenic climate change. Some parts of the earth are getting warmer as the impact of climate change. There is an argue that global warming is some sort of 'ageing' which is cannot be stopped. But we can adapt and reduce the causes of climate change. So the issues in climate change are global warming, increasing climate variability and more meteorological and climatological extreme events.

We need to know or problems first then we can cope with these issues of climate change. The fact that global warming happens in our planet is real. The earth is getting warmer. The term of 'warm' means the atmosphere is gaining energy in the form of heat. The increase of greenhouse gases causes this heating in atmosphere. But the warming is not the same in everywhere because of different amount of solar radiation in each part of the earth. Oceans and some water bodies also influence what happens in the lower atmosphere.

The globalwarmingas a resultofclimate changeare alsoaffectingseveralaspects. There are studies showed that production plants produce less due to the higher temperature, for example in Arabica coffee plant (*Coffeaarabica*), apples, maize and rice. In forestry, the climate change-induced modifications of frequency and intensity of forest wildfires, of outbreaks of insects and pathogens, and of extreme events such as high winds and dry spells, may be more important than the direct impact of higher temperaturesand elevated CO2. In marine, the ocean affects the rate of climate change and is in turn affected by it as well.Global warming could alter inputs of salt water, fresh water, oxygen, nutrients and pollutants with potentially large consequences for marine ecosystems and species.

The climate predictions discussed are long term ones, of which knowing the trends is an important issue for adaptation to the consequences of climate change, food policies, crop

planning, variety breeding and screening, as well as farming system adaptations and modifications.

We further need to know that the increasing of temperature in atmosphere is caused by greenhouse gases, which appears to be human activities such as electricity, driving cars, etc. Indonesia become a large contributor of those greenhouse gases by the existence of logging (mostly illegal), often planting palm oil trees which absorb carbon very few. But since the end of previous century, the rate of global warming has reduced by at least half or one third of the rate in the last 50 years of that century. Can we keep that and change our thinking?

One of the major problems in guiding rural change, in a rural response to climate change, is the low formal level of education that most farmers have and for which governments have done very little to upgrade it. But we need to improve climate literacy among farmers and a better trained extension that can guide farmers in further rainfall monitoring and rainfall interpretation. We also need further agro-ecosystem observations, that, with the rainfall distribution, seasonal scenarios and results from on-farm experiments explain yields and yield differences.

[11.05] Dr. Jatna Supriatna (panelis) farmers have the better understanding

We can see that the climate change affect the agriculture, forestry, and marine. Those are very important aspects. Prof. Kees has already mentioned the examples about production coffee, maize and rice as well as about the marine and forestry. The question is how we look this climate change problem from multidiscipline view, as it is also important for the future. It is a homework for us to conduct more studies about communities toward the climate change, especially in health issue. But unfortunately the government, scientists, and communities are not synergized. Can they work together? Climate change become one department under the Ministry of Environment and Forestry. It is going to be very difficult for interdiscipline to work it. Good thing is, some universities now have course or institution about climate change. There are already studies that have been conducted. There have to be many integrated discipline, in social and natural science.

[11.15] Giving souvenir

DISCUSSION [11.20] Q & A

1. Amin Budiarjo, USAID.
 - How to institutionalize what we've been with the farmers in Indramayu, with the sustainable government systems?
 - How to improve from scenarios into government acts?

We tried our best to approach the Ministry of Agriculture, upper level of Department of Crop Protection. They already have climate field school in collaboration with IPB. So we provided the different approach because we learn from the climate field school, they only provided for short term, only one planting season. In planting season they train the farmers. But in providing the information and knowledge only using demonstration plot for measuring rainfall and other ecological analysis, while in our approach every farmers has to do it in

their own crop. So that was the different approach from the government's. Last year, addressing Indonesia's academy science, you should institutionalize throughout issues. The more important to have institutionalization. The problem is it's not easy to quantify the result into rupiah to convince the government to provide us the money.

Farmers bring their knowledge, and we also transfer the literacy about climate change

2. Idris, RCCC UI

Indonesian farmers and technology especially mobile tech, to find information and solution or as the access to the market. (example from Africa) Are the farmers here have access to that kind of technology? I think that might be help.

The accessibility in Africa is more difficult than the way we can reach in most of Indonesia parts. The situation in Africa is basically more complicated. In the other hand, there are a lot of information about climate change and also the institution. They have given out the information that can be used by the farmers. South Africa is now developing country. They provide much better infrastructure.

3. Ina, Kehati

Rainfall observer club shows the positive impacts to the community. Did the idea to create the club come from the communities or there is an intervention from outside? And how to maintain this club sustainable?

Idea come from us. The communities already know about the climate change issue. Although the idea comes from the outside, but the communities realize themselves about the impact of climate change and how to face it.

4. Cahyo, Environmental Science - UI

- There will be El Nino in Indonesia this year, started in July. So how to teach farmers to deal with this situation?
- As stated in the last slide of presentation, Indonesia doesn't have enough support to face the impact of climate change.
- Do you think that the genetic modification organisms could be the answer for climate change problem? By using the genome, maybe we can create organisms that adapt well with the climate change.
- As mentioned in the slide, that will be a lot of insects. Maybe we can eat the insects as another option?

We have to offer more advance knowledge. If we can keep the yields of rice, which the farmers know more about how, then we have already gained a lot because we may expect the yields of rice in Indonesia local ground. The farmers know why sometimes the gain more or less, then it's enough to prepare to face the effect.

CLOSING [12.15] Concluding remark

By knowing our enemy (climate change) we can create plans to defense ourselves. We bring the knowledge to farmers so that they

can also defend themselves from the impact of climate change to agriculture, forestry, or marine.

[12.25] Closing speech
