

## Climate Fellowship Notes

### **Group 1**

**December Session:** Climate Change Science & Climate Security [12/1/23]

**Speaker** = Tom Murphree

### **Breakout Group Assignment:**

In each group:

- 1) Discuss the implications of CC for one of the security categories listed below. Define the category as you see fit. Also choose the geographic region, time period, and other aspects of your discussion as you see fit.
- 2) Address one or more of the questions listed below for your chosen security category.
- 3) Write down the results from your group's discussion.
- 4) Present and discuss your results with the whole group.
- 5) Modify your written results based on the large group discussion.
- 6) Share your modified results in a document (emailed to Kristen) for posting online, and for use in future meetings and projects.

Security categories (Please define the category as you see fit):

- Water security
- Food security
- Housing security
- Health security
- Energy security
- Economic / Financial security
- Environmental / Natural infrastructure security
- Human-built infrastructure security (e.g., buildings, transportation structures, utilities, ...)
- Public safety security (the security issues that are dealt with by fire depts, police depts, emergency management, and related organizations)
- International relations security (the security issues that are dealt with by foreign affairs, military, intelligence, and related organizations)
- A category of your choosing

**Questions to consider:** [*italics are the notes from the group, notes may not be associated with a specific question*]

- a) *We chose Climate change induced human migration: South East US*
  - i) *A topic usually overlooked as an outsider, but for Americans it can hit close to home (think Florida)*
  - ii) *This time period now is a good time period to talk about as it's never been a factor until now*
- b) What security points might cause migrations?
  - i) *Housing [sea level rise, wild fires], food [droughts], water security, health security [illnesses increased: increased algal blooms]*

- ii) Infrastructure disruptions/damages that cause migration*
- iii) Example of a causal pathway: Heat wave → ocean temperature rising → coral die off → biodiversity/fishery/etc. disruption → livelihood/societal impacts of communities that depend on these areas*

- 2) What aspects of climate change have the most significant impacts on your security category?
- 3) What are the main physical, biological, societal, or other processes that lead to these security impacts?
- 4) What are some of the main approaches we should consider using in planning and implementing our responses to these impacts?
  - i) Resilience and mitigation is happening, but adaptation is important too. Helping with saving things now*
  - ii) Outreach and communication, especially in underrepresented communities that face these impacts (ex. New Orleans: displacement vulnerabilities). Finding the resources to help with these communities to help with some of the problems that they are facing, especially if they are forced to move from their homes*
  - iii) Approaches: further education and increasing climate literacy, especially in those vulnerable communities to hopefully help them plan for the future*
    - (1) Incorporate local community knowledge and voices, pushing for policy changes*
- 5) How are the impacts on your security category affected by climate change impacts on other security categories?
  - i) All of these are very interconnected...very much an interdisciplinary approach that involves lots of different communities*
  - ii) Climate change has both positive and negative impacts, so finding a balance of how to cooperate. Different groups have different goals and motivation... and finding a common ground can be challenging (for ex, military and civilian communities)*
- 6) How might improved understanding of the impacts of climate change on your security category help in understanding the impacts on other security categories?
- 7) There are uncertainties about how climate change will evolve and impact different security categories. What are some of the major uncertainties about those impacts for your security category? How should those uncertainties be addressed when deciding how to respond to climate change and its security impacts?

## Group 2

### Human-Built infrastructure

1. What aspects of climate have the most significant impacts on your security?
  - a. Sea-level rise: Example Pensacola and Naval Academy. Pensacola air field flooded. Paris Island is regularly flooded. Amphib base is impacted by tides. Military infrastructure. Solution possibly create microgrid to support changes.
  - b. Extreme weather events: Temperature changes influence military housing. Safeguarding military families.
    - i. Threats to society - with infrastructure failure.
  - c. Air-conditioner increase - connects with energy security and security. This impacts human health. No capacity for the amount of cooling.
  - d. More wildfires - electric grid shut down/impacts utilities.
  - e. Challenge change in military leadership.
2. What are the main physical, biological, societal, or other processes that lead to these security impacts?
  - a. Existential threat
  - b. Deferred maintenance for infrastructure. Planning long range. Adaption mitigation for long range planning.
  - c. Humanitarian Aid Disaster Response HADR Missions
3. Main approaches
  - a. Time to be proactive for resilience and security regions to improve our operations. Plan for resilience to do our operations.
  - b. CO2 mitigation - task force. CNRC set up climate resiliency task force. How can we adapt?
  - c. Change in political structure - need for resilience.
  - d. Awareness and education.
  - e. Civil-military relations - how do we work with countries to make climate resilient infrastructure?
  - f. Pierside power connection. Solar panels with some sort of storage. Power redundancy for ships. (Green energy for the ship)

## Breakout Group 3

### Members

Dishan Romine

Dan Eisenburg

Jane Willenbring

Bec Grippo

Nicholas Hilaire

1. Discuss the implications of CC for one of the security categories listed below. Define the category as you see fit. Also choose the geographic region, time period, and other aspects of your discussion as you see fit.

**Food Security** - the state of having reliable access to a sufficient quantity of affordable, nutritious food.

Food security has been directly impacted by global warming. Farmlands are destroyed from climate change induced droughts, floods, & wildfires. Extreme weather is a driver of world hunger.

2. Address one or more of the questions listed below for your chosen security category.

Jane Willenbring is from western North Dakota “badlands”, an area where it does not rain much and there is not much soil. Climate change has declined soil presence further. Her fear is that we reach a point where her hometown has no soil whatsoever. This could lead to a HUGE agricultural shift, especially if we experience it within the breadbasket of the United States where most of the produce is grown for our country.

Food security is already highly impacted by climate change in certain regions. Africa is one of the regions affected severely. Average temperatures are rising faster in Africa than in the rest of the world. Rainfall is increasing in Africa by 30% in wet regions and decreasing by 20% in dry regions. 95% of Africa's farmers rely on rainfall and do not have irrigation systems. Their ability to harvest has been negatively impacted.

Food security is also being affected at sea. As ocean temperatures and acidification rises, the productivity of wildlife changes. Not only do certain species struggle to survive, but many have changed the way the spawn & feed. These shifts have caused many species to move closer toward the poles to stay cool. This means that food source proximity becomes more challenging for fishermen. In the Pacific and Caribbean regions, coral reefs, which are crucial ecosystems, are undergoing bleaching and devastation due to increasing ocean temperatures. Despite occupying merely 1 percent of Earth's surface, these reefs provide a habitat for a quarter of all marine life that local islanders depend heavily on. Coral reef degradation also exposes coastal communities to greater risks during storms.

Tom Murphee – Small shifts in weather have drastic impacts. It is extremely difficult to plan for climate change. We may shift so much that the probability of returning to the prior state is non-existent.

Bec Grippo – Worries about the lack of care/investment or lack of financial ability for certain countries to help mitigate climate change.

Nicholas Hilaire – Worries about the displacement of people whose food security is affected by drastic climate change.