# Capstone Project Stage 5: Final Paper Project & Reflection

The final part of the capstone project consists of two assignments:

1. First assignment is approximately a 2000-word paper about the food system in your region. You will use the capstone worksheets you have completed thus far to guide you in this paper. You may incorporate images, maps, and/or charts in your final paper, but keep in mind that these do not go toward your final count. **50 Points**.
	1. You should include a simplified CHNS diagram that supports at least a section of your paper, in which you either discuss or explain the model.
	2. You should include a map of your capstone region.
	3. You should include at least 10 scholarly references with proper citations and references in your paper for any work (ideas, quoted material, maps/charts/images) that is not your own. If at any time you have a doubt about needing a citation, you should go ahead and include one or reach out to your instructor for assistance.
	4. Please present a professional presentation that is edited and formatted so that it is easy to read and understand. For example, please include name and date, uniform section headers that help navigation (should include the four sections described below).
2. The second assignment is an individual reflection 500 words (~2 pages) on the capstone project. This should be a thoughtful reflection on the course, including the capstone. I will be reading these personally and really value this exercise as a way to learn about this course from your perspective. The instructions at the end of this document give you some ideas and guidelines on how to complete. However, try not to create a generic essay based on what you think you are expected to write. This but this ultimately means the most if you speak authentically from your experience and make it a meaningful exercise for yourself. If you struggle to write a full page, I encourage you to continue to write just to see what comes out. However, if this does not lead to anything coherent than you can just write what you want. **30 Points**

# Detailed Description of Final Paper Content

**Part 1 – Assess Current Status of the Regional Food System**

Summarize the data and information that you’ve gathered throughout the semester about your assigned regional food system(s) and the interaction between those food systems and the environment, as well as any relevant socio-economic, cultural, and policy factors. Your worksheets from capstone stages 1, 2, 3, and 4 will be your main source of information for this paper.

Provide an overview of the current status of your assigned regional food system(s). Summarize the data and information that you acquired in the previous modules to present the current status of your regional food system.

Summaries should include:

* Influence of the environment on the food system, including the land, soil, water, climate, and crops
	+ How the food system is supported by the physical and biological environment (e.g., soil, climate) of the region (Learning goal 1 – Modules 4, 5, 6, 9)
		- Where is your region located? Include a labeled map of your region. (Module 1)
		- What is the climate (temperature and precipitation patterns) of the region?
		- How does the climate influence which crops are grown?
		- What is the topography of the region (hilly, steep, flat)? What is the geographic setting (e.g., coastal, river valley)?
		- Discuss the soils of the region.
		- What are the major crops grown in this region? How do all of the environmental conditions described above affect which crops are grown?
* Describe any cultural or socio-economic factors that are important to the regional food system (Modules 1 and 2)
	+ - Is there a particular ethnic influence to the regional food system?
		- What is the transportation system? Is the region adjacent to a major shipping port, rail line, or interstate system that influences the food system?
		- In general, describe the economy of the region and if there is a relationship between the regional food system and the economic situation of the region.
* Impact of the food system on the environment
	+ Effect of the food system on the environment (water, soil, ecosystems, climate) of the region. (Learning goal 2 – Module 4, 5, 8, 9)
		- What effect does agriculture in the region have on the water quality? Is there documented water pollution? Is anything being done to prevent pollution or clean up?
		- What effect does agriculture in the region have on the region’s soil resources? Is soil erosion a problem? Are crop and soil management measures being implemented to mitigate these effects?
		- What effect are crop practices having on the regional ecosystems? Is monoculture prevalent? Are chemical pesticides and fertilizers used?
		- Any other effects of the food system on the environment?
	+ Transportation – energy & global climate change
		- How does the regional food system contribute to energy consumption, burning of fossil fuels and global climate change?

**Part 2 – Discuss future scenarios**

* Identify the future stressors to your region: increased temperature and human population growth
	+ What is the projected increase in temperature for the region?
	+ What is the projected change in human population for the region?

**Part 3 – Analyze the resilience of the future regional food system**

Provide a discussion of the resilience of your food system given the potential of increase human population growth and increasing temperatures.

* Identify the vulnerabilities of current food system and the attributes of the current food system that contribute to its resilience (Learning Goal 3)
	+ What contributes to vulnerability of the regional food system?
		- Cropping practices (e.g., monoculture)
		- Lack of diversity ecologically and/or economically
		- Low resource environment (e.g., arid climate)
		- Topography
		- Exposure to extreme weather events (e.g., hurricanes, floods, droughts, hailstorms, late frosts)
		- Poverty
		- Others…?
	+ What contributes to the resilience of the regional food system?
		- Biodiversity
		- Economic diversity
		- High resources environment
		- Sustainable cropping and soil management practices
		- Others…?
* Consider possible impacts of climate change and human population growth on the regional food system and the resilience and/or vulnerability of the food system to those changes.
	+ What other effects will the projected temperature increase have on the regional food system?
		- Potential for increased droughts/floods and resilience to these events
		- More precipitation as rain than snow
		- Change in crop consumptive water use because of higher temperature resulting in higher transpiration and evaporation rates
		- Change in growing season length
		- Late frosts
		- Pests
		- Others…?
	+ How resilient is the regional food system to these effects?
	+ What effect will the change in human population in the region have on the regional food system?
		- If the population is expected to increase, will increased demands for food lead to changes in the system?
		- If population is expected to decrease, will the system be able to survive economically?
		- Is the system resilient to potential human population changes?

**Part 4 – Propose strategies for enhanced resilience**

Propose strategies that contribute to increased resilience of your assigned regional food systems in the face of human population growth and rising temperatures and evaporation rates.

* Many strategies were presented throughout the course that can be reviewed and explored, such as:
	+ Soil and crop management
	+ Irrigation efficiency and conservation
	+ Crop selection
	+ Other strategies

Please see grading rubric for final paper on the canvas website where you submit the assignment.

# Description of Individual Reflection Essay

### You will include a 500-word essay on your experience with the capstone.

### What to do for this individual reflection (suggestions):

* Write a two-page essay reflecting on the following:
* A summary of your experience with the capstone project
* Most challenging aspect of capstone
* Most interesting aspect of capstone
* How does the capstone and/or course relate to your major (or if undeclared, your possible choice of major)? What will you take away from the course that you might use in your future studies?
* You are expected to put some thought into this reflection. This section should be well-structured and reflect the depth of the research you performed in the capstone project.

# What will you turn in for the final project?

* Your final 2000-2500 word paper
* Your final 500 word reflection essay