SDG Awareness and Knowledge Program Supplementary Data

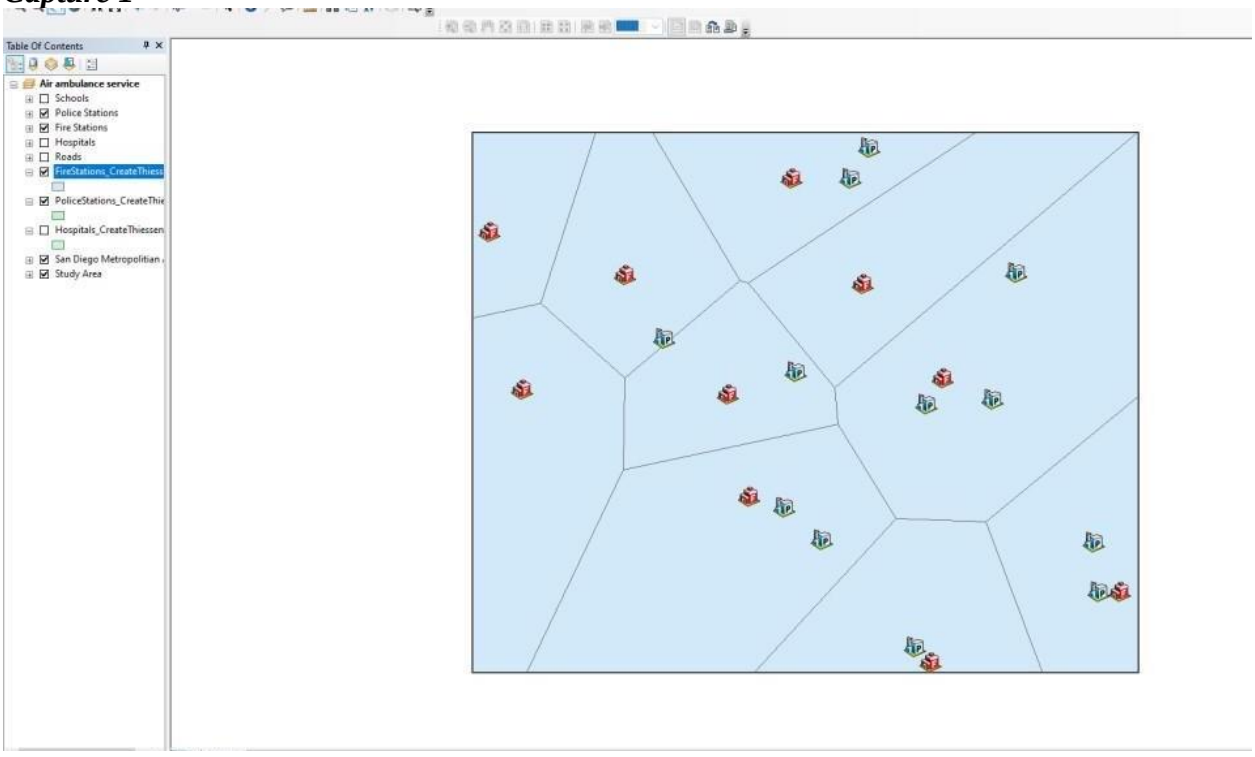
The detailed samples of Student's Assignments, Labs, Projects, GIS Applications, Brain Storming, Impact Assessment tool, Mapper and other SDG material related to SDG Awareness and knowledge program

1. GIS Application- SDG Related Variables

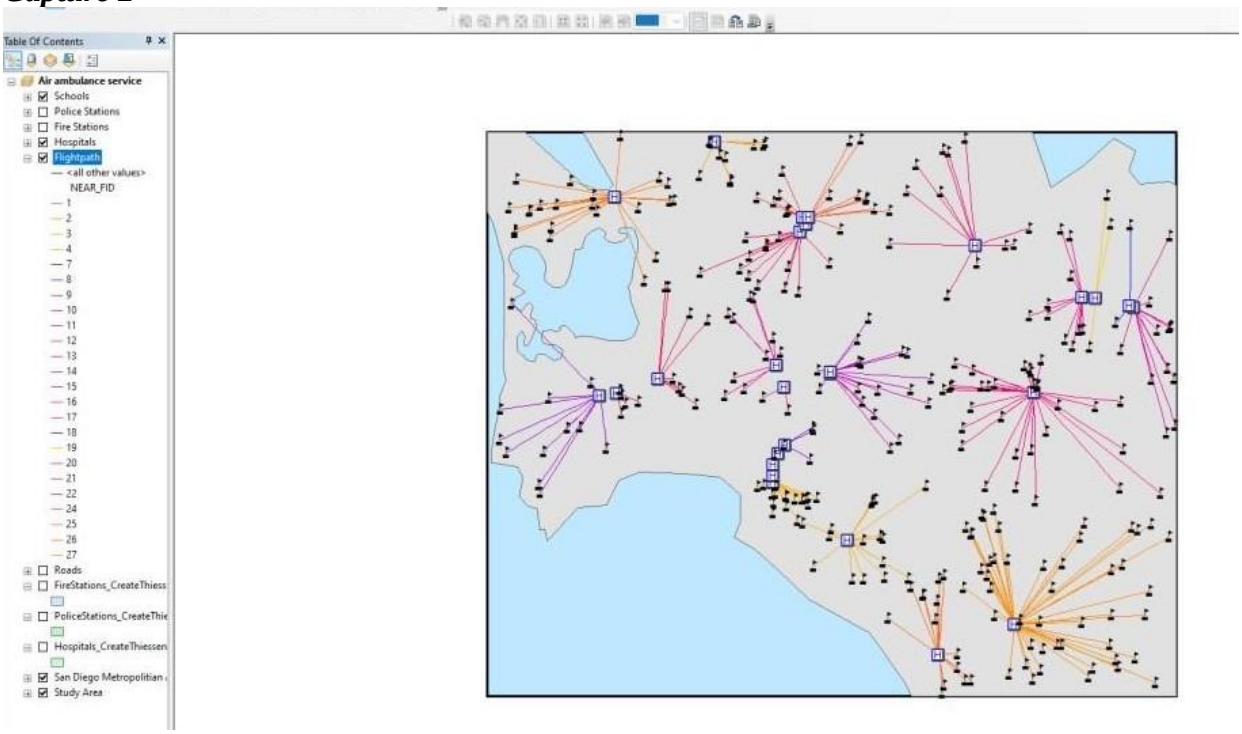
Lab : Proximity Analysis Utilizing ArcGIS for SDG-Related Scenarios. For example, Case1: allocate resources to each school; and Case2: determine straight line distance between hospitals and schools. Case1: related to SDG 4: Quality Education - This goal emphasizes inclusive and equitable quality education for all. Using ArcGIS to analyze perfume proximity and allocate resources to schools can contribute to improving the learning environment and educational opportunities, ensuring that students have access to necessary resources for their education. Case2: related to SDG 3: Good Health and Well-being - This goal focuses on ensuring healthy lives and promoting well-being for all at all ages. Analyzing the proximity of hospitals to schools can help identify areas where healthcare services may be lacking or inaccessible, and allocate resources accordingly to improve health outcomes for students and communities.

Step1: Allocate resources to each school

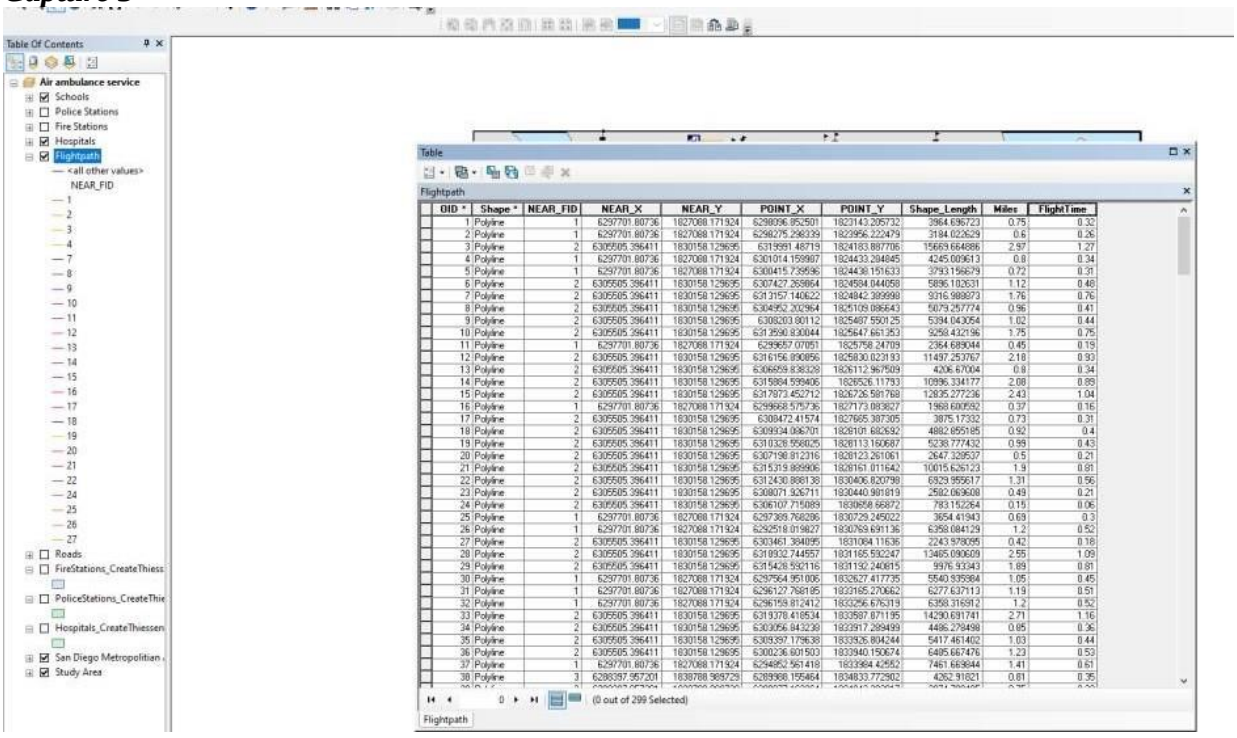
Capture 1



Capture 2

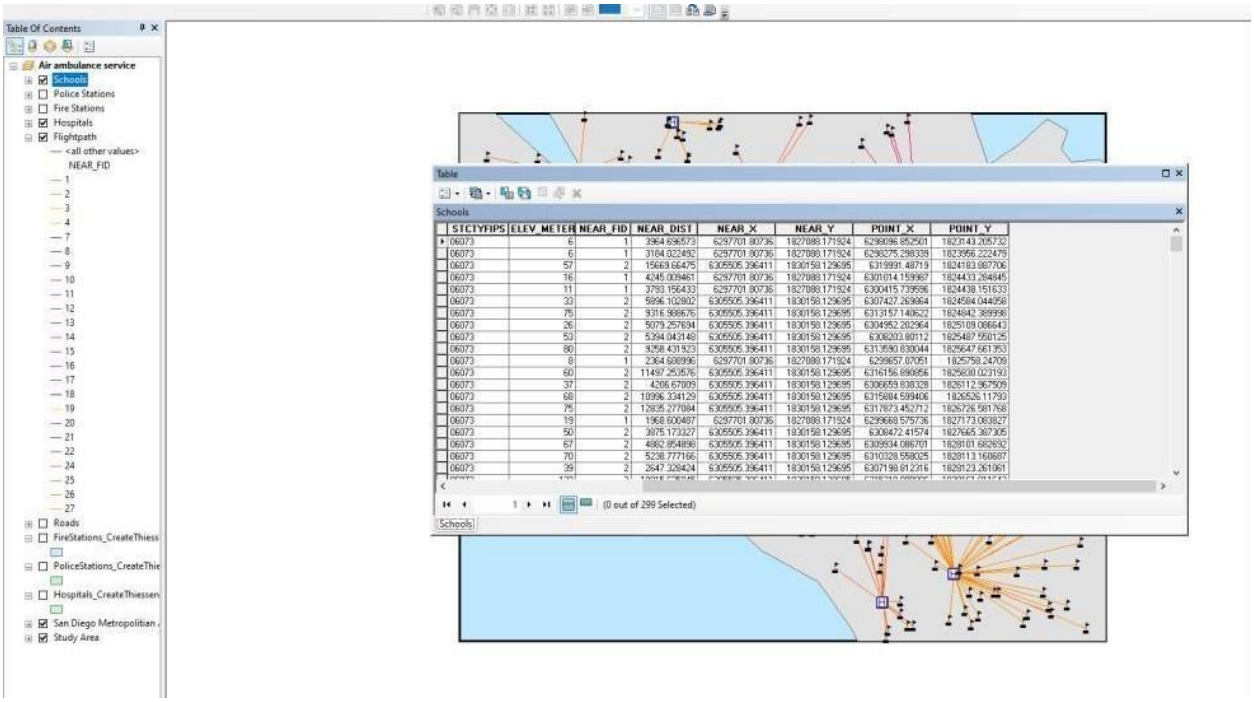


Capture 3

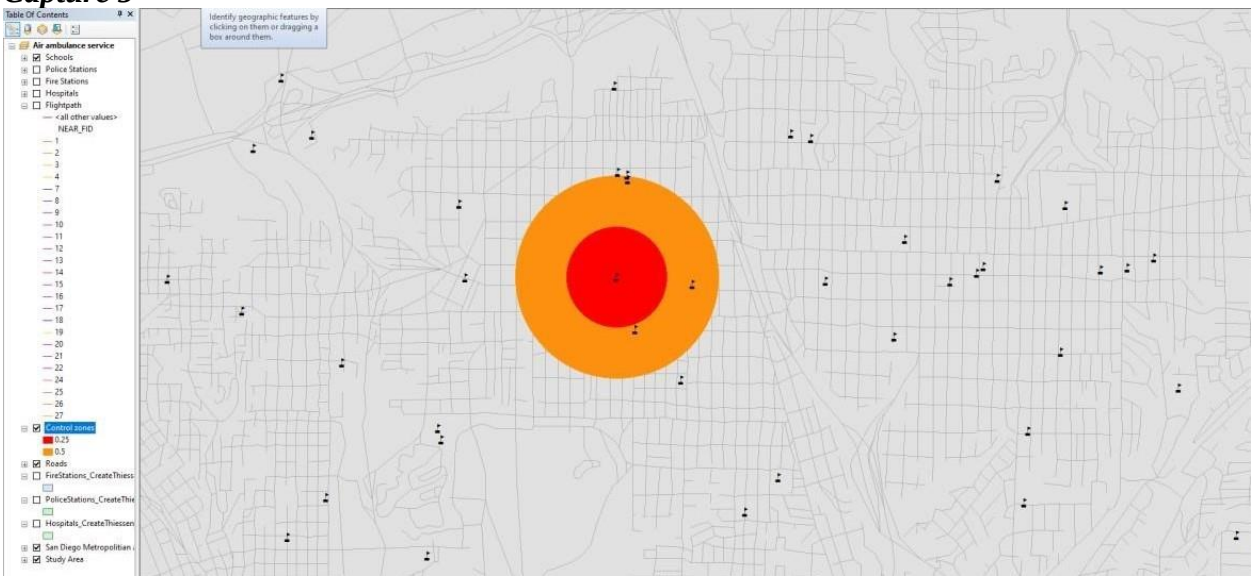


Step2: Determine straight line distance between hospitals and schools

Capture 4



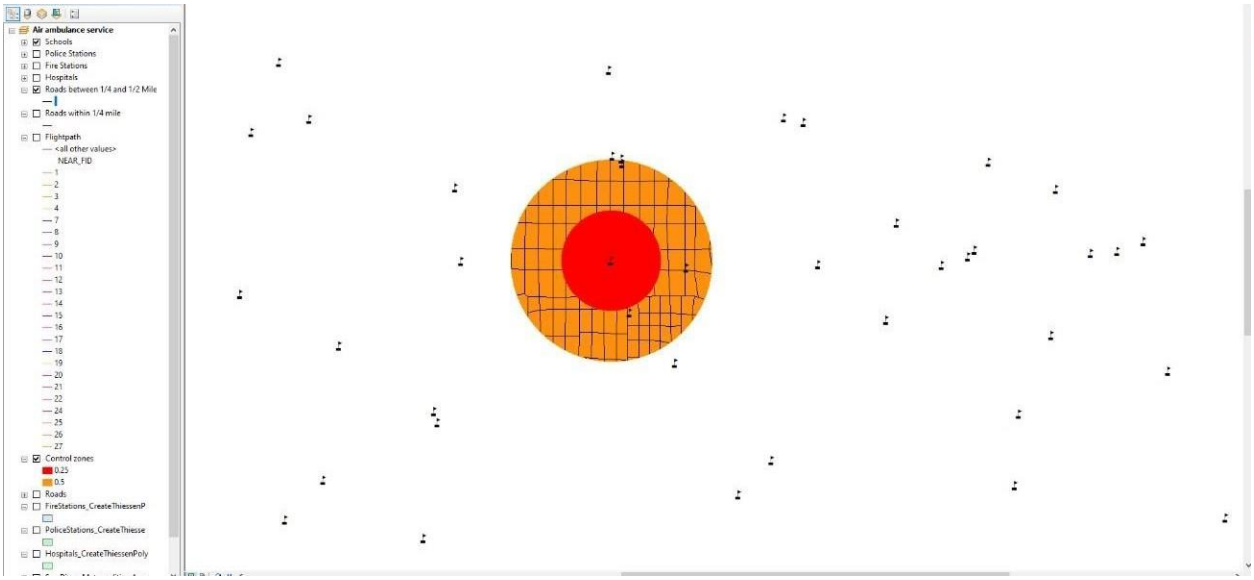
Capture 5



At the Scale, do you think the curvature of the earth will be considered for the buffer?

The Curvature of the earth should be considered in this case for the reason of having a accurate result and also specifically if there is a very large area, In this 20,000 Map scale we need a accurate estimation so I highly recommend it.

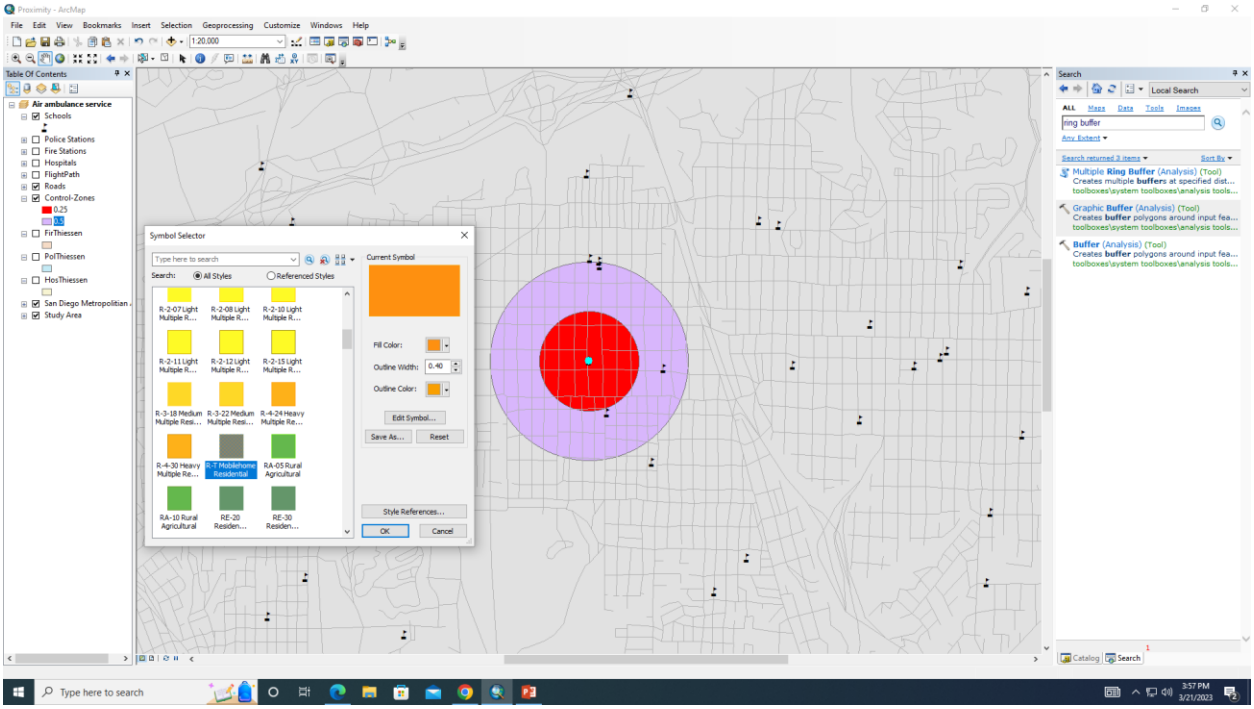
Capture 6



Note on the side: We need to do it in the case of if the buffer includes water: (Coast, sea, ocean, etc..)

In the exercise, could you have used Euclidean allocation instead of Thiessen polygons to allocate resources to the schools? Why or why not?

As the Thiessen Polygons and the Euclidean Allocation aim are identical. The Euclidean allocation approach may also be used to distribute resources inside the school. The only change is that additional raster data sets will be used in the study, which is the only difference.



1. **List and describe three categories of proximity analysis.**

- **Buffer:** Buffers are employed to determine how many features may be located at a given distance.
- **Thiessen Polygons:** It does this by encircling points with a proximity zone that shows which points in a polygon are closer to one other than the others.
- **Zone:** Adds attribute fields to a point feature class that provide the distance, feature identification, angle, and coordinates of the nearby point or line feature.

4. What should you consider when performing proximity analysis at small and large scales?

We use geodesic measurement on a small scale and UTM on a larger size. Consider a projection that keeps in mind the earth's curvature and distance.

2. Course Project with SDG Impact Assessment

Sample 1

Fill out the table and then assess your course project using the SDG Impact Assessment Tool. Submit the following in blackboard by **March 21, 2023 (before 6:00pm):**

1- This word file table

2- SDG assessment platform (pdf)

Student Name:	Rashed Almansoori Bader Alobaidli Fares kayali	Course Name	Spatial Analysis
Student ID:	202020923 201719325 201850095	Number of Project members	3
Project Title:	Food Security		
List your project research problem and hypothesis	Our research problem is food insecurity Which is one method we estimate the number of people who cannot consistently afford to eat enough to support each member of a household in leading an active, healthy life. Hypothetically we can solve the food insecurity with food security which: When all people, at all times, have physical, social, and economic access to enough, safe, and nutritious food that satisfies their dietary needs and food choices for an active and healthy life, they are said to be in a state of food security. Major issues with food security are		

Provide a picture of your project solution or subject of investigation *(Note: include the link and full citation of every image)*	 *ANALYZING FACTORS CONTRIBUTING TO FOOD INSECURITY IN AFRICA*. (n.d.). The Global Outlook. https://theglobaloutlook.in/2022/03/07/analyzing-factors-contributing-to-food-insecurity-in-africa/
List the SDGs that your project is relevant to	(Zero Hunger, No Poverty, Good Health and well Being, Clean water and sanitation, Climate Change, Life on land, Partnership for the goals)
Describe how your project is relevant to selected SDGs and targets	**Zero Hunger:** Food security involved in Zero hunger one of the reasons is to have accessible food at all time. **No Poverty:** It is also taking a part in food security, Because having obtainable food at all-time which mean that you can buy or grow food and that equals to No poverty. **Good Health and well Being:** By having accessible and nutritious food at all-time which will translate into having good health and well-being. **Clean water and sanitation:** Part of Food security is to have Clean and sanitized water. **Climate Change:** Food insecurity does really have a variety of effects on climate change. First of all, a lack of food may result in deforestation as people chop down trees for fuel and crops, which increases greenhouse gas emissions and the effects of climate change and this is one of the several food insecurity effects to the environment. **Life on land:** Life on land can be significantly impacted by food insecurity. Agriculture and food production have a direct influence on land-based ecosystems, and food insecurity can increase the downsides of unsustainable land use methods.

	Partnership for the goals: Food security is directly linked to several of the other SDGs, Which means it's important to complete the other goals as well The partnership for the objectives and other SDGs depends on reducing food insecurity, which requires cooperation and partnership across several sectors and stakeholders.

SDG Impact Assessment Tool: is a learning tool that visualizes the results from a self-assessment of how an activity, organization, or innovation affects the SDGs. It aims to stimulate the user to get a better understanding of the complexity of sustainable development and the different aspects of the SDGs.

Video Tutorial: https://www.youtube.com/watch?v=lE2XkC7nKg0 ;

User guide: Download the user guide, version 1.0

Sign up: https://sdgimpactassessmenttool.org/en-gb

How does your case impact relevant SDG?
You can see the impact of how relevant is our SDG below in our pdf that we created by using SDG IMPACT ASSESSMENT

Motivate your assessment

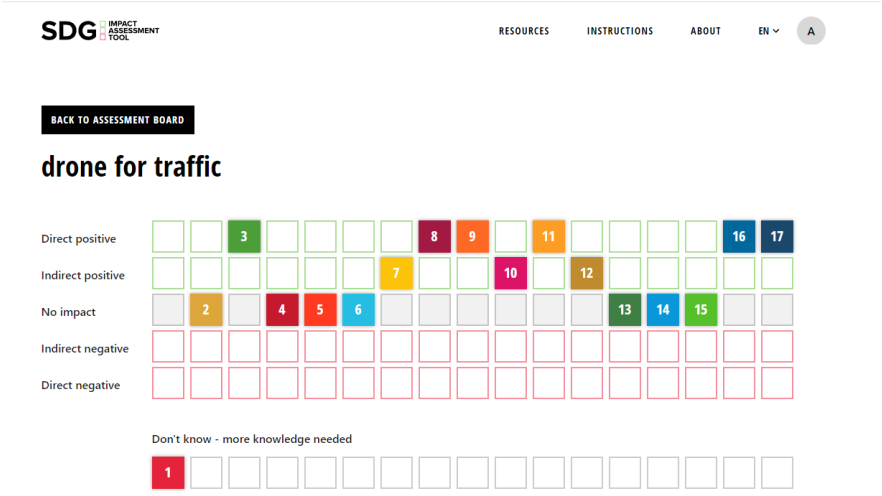


Figure. Sample of project SDG assessment

Strategic choices:
These are the prioritized areas that we will take action on.

- Positive impacts we can strengthen even further
    - How can you further strengthen the positive impacts of your project on certain goals?

    - Are there any additional partners or actors that you can include to further enhance a certain goal?
- Negative impacts we can eliminate or minimize
    - How can you mitigate the negative impacts from your project?
- Knowledge gaps we need to fill
    - How do you address the knowledge gaps you may have? What is possible for you to do right now to tweak your project to address this?

Save your results report and upload it in Blackboard along this word file.

SDG Impact Assessment tool report is provided in Supplementary file S1

Sample 2

Fill out the table and then assess your course project using the SDG Impact Assessment Tool. Submit the following in blackboard by **March 21, 2023 (before 6:00pm):**

1- This word file table

2- SDG assessment platform (pdf)

Student Name:	Saeed Abdulla Aljaberi	Course Name	Spring2023
Student ID:	201901473	Number of Project members	3
Project Title:	Exploring the impact of Sport Stadium on Alain regional economy and wellbeing		
List your project research problem and hypothesis	To improve the economic around the stadium, because it is a very important place in the city , also it will increase the number of the tourists in the city. To explore the stadium impact on the regional economy and wellbeing. We are assuming that Hazza Bin Zayed stadium will have positive impact on AlAin city economy. We are assuming that Hazza Bin Zayed stadium will have positive impact on AlAin city well-being.		
Provide a picture of your project solution or subject of investigation *(Note: include the link and full citation of every image)*	https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.arabianbusiness.com%2Fgcc%2Fal-ain-set-open-new-25-000-sports-stadium-532403&psig=AOvVaw0eJ7IkQWCrpHwf45rG4xxG&ust=1679391444832000&source=images&cd=vfe&ved=0CA0QjRxqFwoTCODzueia6v0CFQAAAAAdAAAAABAD		

	https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.thenationalnews.com%2Fuae%2Fhealth%2Flargest-gym-in-abu-dhabi-planned-for-sports-zone-at-hazza-bin-zayed-stadium-in-al-ain-1.645643&psig=AOvVaw0eJ7IkQWCrpHwf45rG4xxG&ust=1679391444832000&source=images&cd=vfe&ved=0CA0QjRxqFwoTCODzueia6v0CFQAAAAAdAAAAABAa https://www.google.com/url?sa=i&url=https%3A%2F%2Fwww.cvent.com%2Fvenues%2Fal-ain%2Fhotel%2Faloft-al-ain%2Fvenue-2079fa59-0158-4af3-bc38-7521107b2eb4&psig=AOvVaw0kmQ1Qty4eS1934x_0-9lT&ust=1679391602861000&source=images&cd=vfe&ved=0CA0QjRxqFwoTCJDgg7Kb6v0CFQAAAAAdAAAAABAD https://www.google.com/url?sa=i&url=https%3A%2F%2Falainclub.ae%2Fen%2Fpress-release%2F&psig=AOvVaw1NrteRHx3Tkym2jVb3nQwa&ust=1679396906792000&source=images&cd=vfe&ved=0CA0QjRxqFwoTCJCuh5av6v0CFQAAAAAdAAAAABAX
List the SDGs that your project is relevant to	Goal 8 – Decent work and economic growth Goal 3 – good health and well-being
Describe how your project is relevant to selected SDGs and targets	Its related because it will increase the economic growth of the city and it will work on the advantages of the stadium impact on the region. Its related also in good health and wellbeing because it will have a lot of activities

***SDG Impact Assessment Tool*:** is a learning tool that visualizes the results from a self-assessment of how an activity, organization, or innovation affects the SDGs. It aims to stimulate the user to get a better understanding of the complexity of sustainable development and the different aspects of the SDGs.

Video Tutorial: https://www.youtube.com/watch?v=lE2XkC7nKg0 ;

User guide: Download the user guide, version 1.0

Sign up: https://sdgimpactassessmenttool.org/en-gb

How does your case impact relevant SDG?

Motivate your assessment

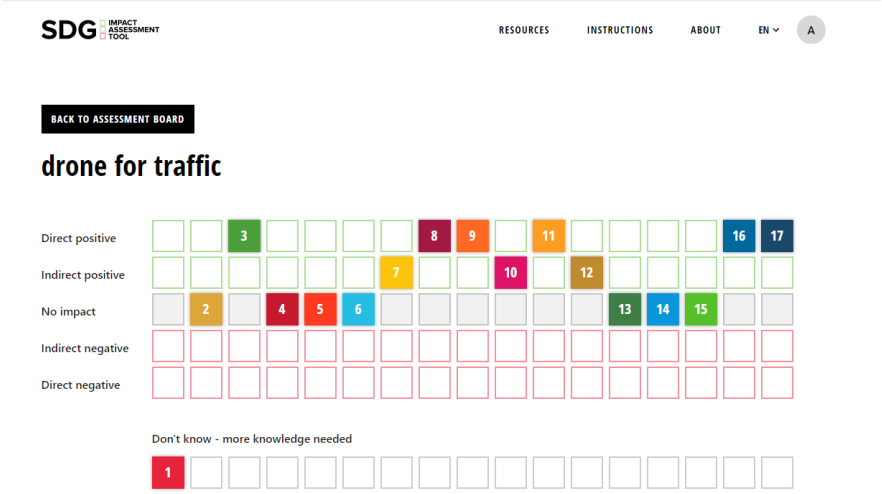


Figure. Sample of project SDG assessment

Strategic choices:
These are the prioritized areas that we will take action on.

- Positive impacts we can strengthen even further
  - How can you further strengthen the positive impacts of your project on certain goals?
    -It will increase the development of the area because there will be a lot of economical growth and good health and wellbeing.
  - Are there any additional partners or actors that you can include to further enhance a certain goal?
    -yes, a lot of companies and business men will try to invest in this area.
- Negative impacts we can eliminate or minimize
  - How can you mitigate the negative impacts from your project?
    -there is a lot of negative impact because the area of the stadium doesn't support it.
- Knowledge gaps we need to fill
  - How do you address the knowledge gaps you may have? What is possible for you to do right now to tweak your project to address this?
    -by doing researches and asking the people that are working there and after all do some survey about it.

Save your results report and upload it in Blackboard along this word file.

SDG Impact Assessment tool report is provided in Supplementary file S2

3. SDG Related Assignment

Assignment: Search, Read, and Analyze an SDG-Related Article: Assessing Alignment with the Sustainable Development Goals

Assignment: Literature Review

GEO 334: Spatial Analysis, Spring 2023 - Instructor: Dr. Khaula Alkaabi

Every student needs to select a journal article related to the course project and complete the following information and review. Students need to submit the following in blackboard: 1) this form filled, 2) SDG report copy, and 3) pdf copy of the journal article.

Reading Title:	
Author Names:	
Journal Name:	
Year:	
Issue #:	
Volume #:	
URL/website	
RESEARCH OBJECTIVE	*Write the purpose of Research Study and related research objectives* *Around 100 words*
METHODOLOGIES	*Restate the article thesis or research problem* *Explain the method used to analyze data, and Data Source* *Around 100 words*
MAIN FINDINGS	*Report the statistical insignificant research findings* *Around 200-250 words*
REFLECTIONS	*What is your reflection about this article. Typically, you analyze the thesis, argument, or content of the text before writing your reflection paper. Your reflection for the paper may contain your opinion of the academic material. You can disagree with the arguments made in the text and show the reasoning behind your judgment.* *Around 200 words*
SDG Alignment	*Write paragraph how this article is aligned to the SDG using https://knowsdgs.jrc.ec.europa.eu/sdgmapper* *Also attach related SDG report for all the 17 goals* *Around 100 words*
Photos	*Past/Attach 4-6 images related to the article*

Few Students Sample Solution are provided in Supplementary file S3 and S4

4. SDG Research Project Assignment

Research Project Assignment (A, B, C)

GEO 334: Spatial Analysis, Spring 2023 - Instructor: Dr. Khaula Alkaabi



PROJECT AssignmentS: Submission Requirements:

- **Project Assign. A:** Submit the group project draft including: project title, project outline, methodology, related data sources. Submission through blackboard. ***Due Date: Feb. 6, 2023.***
- **Project Assign. B:** Submit the Project's Sampling Structure, Survey Questions and Methodology. Submission through blackboard. ***Due Date: Feb. 13, 2023.***

- **Project Assign. C:** Every Group Present and Submit their Research Poster. Submission through blackboard. ***Due Date: April 10, 2023.***

GROUP PROJECT INSTRUCTION:

Each group will consist of **2-3** students. The mission of each group is to identify and investigate at ***2-3 Sustainable Development goals*** (listed at https://sdgs.un.org/goals) from UAE context applying statistical and mapping analysis. The project should be submitted in a form of report and research poster. Your goal is to provide a thoughtful analysis from a range of sources and to incorporate into a theoretical analysis. Each group should design its paper so that it may range from **10-12** double-spaced pages in length excluding tables, maps, photos, charts and graphs.

This Group Research Project is designed to

(1) Increase awareness about SDGs
(2) Encourage student to research and publish;
(3) Apply statistical analysis taught at this course
(4) Stimulate student critical thinking; as well as attendance in class and active participation in learning the materials, techniques and processes of conducting innovative research project in this sub-discipline of Geography;
(5) Provide a training ground for writing a research poster and oral presentation of research findings at professional meetings; and,
(6) Recognize outstanding research poster by students.

Project Guideline:

- Split your project parts among your group members equally. Effective team work is valued and essential for project success
- Clearly state the problem statement and the need for the study in your introduction (why is this a burning issue worthy of your attention)
- Provide summary review of current literature that should help you analyze the specific phenomenon being studied. (YOU MUST USE AT LEAST 2 JOURNAL ARTICLES!!) *If you need help for searching literature in the library catalog, please contact reference librarian at the UAEU Library at +9713-7132-406 (phone) or* http://www.library.uaeu.ac.ae/en/ *(through e-mail).*
- Your project should integrate the following:
  - ArcGIS analysis (produce maps that illustrate: problem location, spatial analysis),
  - Field trip to the location (take photos of the problem),
  - Survey people with a minimum sample size of 50 (use SPSS to analyze results)
- Use good English in the written part. I strongly encourage you to visit the **university writing center** multiple times to check your writing. You can find their contact information at Writing Center (uaeu.ac.ae)
- Your final output should be presented in a poster format. The following sections are usually required with regard to poster construction:
  - Title
  - Abstract
  - Rationale & Purpose-Hypotheses
  - Methodology & Data sources
  - Major Results-Conclusions
  - Implications-Recommendations
  - Names of group members

    - University Logo
    - Illustrations (maps, photos, diagrams, etc.)
- Each group should provide a **10** minutes presentation followed by **2** minutes of Q/A
- The poster should be visually appealing to your audience and invite them to view your work. The poster's layout should be attractive and not overwhelming. Do not use hand lettering or drawings.
- Have your peers view your poster for its content, completeness, and attractiveness of visual presentation. Make a note of their criticisms, constructive suggestions, and the questions you were asked. Make any appropriate changes.
- Please be aware of the **related submission deadlines** (A, B, C) listed above.

Useful links:

- Maps and Sustainable Development Goals: https://icaci.org/maps-and-sustainable-development-goals/
- Geo-Resolution 2021 Poster Session: https://taylorgeospatial.org/geo-resolution-2021-poster-session/

5. SDG Related Variable Analysis on SPSS

Lab Experiment: Apply statistical analysis using SPSS (e.g., Scatterplots and correlational analysis) to explore SDG related variables. Like exploring the relationship between life expectancy and birthrate (related to SDG 3: Good Health and Well-being); correlation between Hours on Internet and Hours on email (related to SDG 9: Industry, Innovation, and Infrastructure - This goal emphasizes the promotion of inclusive and sustainable industrialization, fostering innovation, and enhancing access to information and communication technologies (ICTs), which can be related to internet usage and email communication) (related to SDG 4: Quality Education - Access to the internet and email can enhance educational opportunities and digital literacy, enabling individuals to acquire knowledge and skills).

The Students Sample Solution is available in S5

6. Brainstorming- Solutions to Challenges Around SDG



