# ALX Professional Foundations: Week #3 Milestone Worksheet

**Instructions:** Provide responses to all items in the orange boxes. The worksheet consists of Sections A-E. Work on this worksheet one section at a time throughout your week, and return to Savanna after each section for the next set of content and further instructions.

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## SECTION A: Problem Statement

### Step 1: Your GCGO

Which Grand Challenge or Great Opportunity (GCGO)  do you want to play a part in addressing? (Pick one.)

As a reminder, the GCGOs are:

- Urbanization
- Education
- Infrastructure
- Healthcare
- Climate change
- Governance
- Job creation
- Agriculture
- Natural resources
- Arts, culture, and design
- Tourism
- Empowerment of women
- Regional integration
- Wildlife conservation

GCGO: Education

## Step 2: Describe Your Problem

You are going to take a first pass at briefly describing your chosen problem. This can be any problem that speaks to you, as long as it is a real-life occurrence that is clearly linked to your chosen GCGO, that occurs in a certain place and for certain people (and/or animals), and that it can be clearly defined.

For example, if you chose wildlife conservation as your GCGO, you might first state your chosen problem as:
*There are very few white rhinos left in Kenya and they are in danger of going extinct.*

*Another example, if you choose infrastructure as your GCGO:*
*Residents of major cities in South Africa endure prolonged periods without electricity, significantly hampering their ability to generate income.*

Note that this is just your first attempt stating the problem, and you don't need to quantify the problem yet. In order to get to your official problem statement (which does need to be quantifiable) first answer the following questions. The more specific your answers, the better. You may also ask Google, Wikipedia, , ChatGPT, and/or other reliable online sources to help you. Please be sure to cite (give credit to) any sources that you use.

Describe your problem using What/Who/When/Where/Why/How….

1. **What** is the problem? What is reality like because of this problem? What will reality be like if the problem continues?

   *Healthcare: Many rural communities lack access to quality healthcare facilities, leading to preventable deaths and untreated diseases.*

2. **Who** does this problem impact, directly and indirectly? Who contributes to the problem?

This problem directly affects residents of rural areas, particularly those without the means to travel to urban hospitals. It also impacts local economies indirectly due to loss of productivity.

3. **When** did this problem begin? When does it occur?

The issue of healthcare disparity between urban and rural areas has been ongoing for decades.

4. **Where** is this problem occurring? What is the context in which it occurs?

   Primarily in rural areas of developing countries, but the problem can be found in underserved regions globally.

5. **Why** is this a problem? What are the pain points or gaps? Why do you personally care about this problem?
   *Without access to healthcare, many treatable diseases become fatal, contributing to high mortality rates. I care because health equity is essential for sustainable development.*

6. **How** would reality be different if this problem were solved? (This can be your opinion.)

   If solved, rural residents would have access to necessary healthcare, reducing preventable deaths, improving quality of life, and enhancing community productivity.

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## Step 3: Understand and Quantify Your Problem

Next, you will conduct some basic web research to better understand, define, and quantify your problem. You will do this through a combination of Google search, Wikipedia, credible web sources, ChatGPT or other AI research tool, and your own synthesis of information from these

sources. Be sure to give credit to your sources, and paraphrase (use your own words) rather than quoting directly.

7. What is the historical context for this problem? What happened in the past that contributes to the problem now?

Healthcare access disparity between urban and rural areas has been aggravated by urbanization and lack of infrastructure investment in rural regions.

8. What are the possible economic (money-related) reasons why this problem exists and continues?

ack of investment in rural healthcare infrastructure due to limited government budgets and reliance on urban areas for economic growth.

9. What are the possible political reasons why this problem exists and continues?

Government policies often prioritize urban development, leaving rural areas underserved.

10. What cultural beliefs and/or social norms possibly contribute to this problem?

Social norms in some regions may prioritize traditional healing over modern medical care, exacerbating the problem.

11. Who are the people potentially responsible (directly or indirectly) for creating and/or maintaining this problem?

- *Governments, healthcare providers, and policymakers who have not sufficiently prioritized rural healthcare development.*

Now that you have the preliminary information you need, you'll continue your web research to find some numbers, or quantifiable information, to help describe your problem:

What numerical data can you find that is relevant to your problem? Be sure to use your own words and also cite (give credit to) your sources.

Example 1:
*According to Chat GPT, there are about 880 white rhinos currently living in Kenya. This population is very small, and they are critically endangered.*

Example 2:
*Johannesburg has approximately 5.8 million residents (per ChatGPT) and had approximately 4.7 million international overnight visitors in 2019 (according to the South African Tourism Annual Report for 2019/2020).*

12. Approximately how many people (and/or animals) are **directly** impacted by this problem? Explain.

"According to the World Health Organization, over 1 billion people globally do not have access to essential healthcare services."

13. Approximately how many people (and/or animals) are **indirectly** impacted by this problem? Explain.
Directly, this affects millions of rural residents in developing countries.

14. What other numerical data can you share that is relevant to your problem? What can you find out about its size and scope? What can be measured? (For example, the amount of trash produced in Nairobi each day, the number of people without access to clean water, etc.)

Indirectly, the families and communities of these residents are affected by poor health outcomes.

## Step 4: Describe Your Solved State

Without having to come up with *how* to solve the problem, describe what the desired, solved state looks like. Please use numbers wherever possible, and make your solved state specific and measurable.

Example 1:
*There would be a population of 10,000 healthy and protected white rhinos living in the wild in Kenya.*

Example 2:
*All 5.8 million residents of Johannesburg would have affordable and consistently available power from clean energy sources, 99.5% of the time.*

15. If the problem were addressed/solved, what would reality be like?
    **reality look like if the problem were solved?** *All rural residents would have access to affordable and timely healthcare services, significantly reducing mortality rates.*

16. Are there other benefits that would come from your problem being solved? Name at least one.
    Improved productivity, better education outcomes due to healthier populations, and reduced healthcare costs.

## Step 5: Clarify Your Problem Scope

You are more effective at solving a problem when you know where its limits are. That is, when you know what is “in scope” and “out of scope.” For this reason, it is important to list what is out of scope, or NOT included as part of your problem definition.

Example 1:
*The scope of the problem does not cover any other animal species besides white rhinos. It does not include white rhinos outside of Kenya.*

Example 2:
*The scope of the problem does not include any businesses or people outside of the legally-defined Johannesburg city limits. It does not apply to tourists or visitors staying for less than 1 year in Johannesburg.*

17. What is NOT in scope for your problem?

*The problem scope does not cover urban healthcare systems or highly specialized medical treatments that are typically only available in urban centers.*

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## Step 6: Areas for Learning

What do you not know or understand that you would like to know more about? This can be anything related directly or indirectly to your problem. Let your curiosity run wild!

Example 1:
*I’d like to know where most of the demand for rhino horn is coming from. I’d like to know who are the primary buyers and who is behind the trafficking of rhino horn. I’d like to know how long the average rhino’s lifespan is. I’d like to know how many babies a typical female rhino has, and how many babies typically survive into adulthood. I’d like to know more about what diseases impact rhinos. I’d like to know more about the kinds of habitats that rhinos thrive in. I’d like to understand what international organizations do the best job supporting wildlife conservation and what their practices are. I’d like to know what models of community involvement have been most successful*

*in keeping wildlife safe and thriving. I'd like to understand how much land is available in Kenya for rhinos to roam.*

Example 2:
*I'd like to better understand the utility company Eskom and its history. I'd like to understand why Eksom has failed to plan properly to update its infrastructure. I'd like to understand the relationship between Eksom and the South African government. I'd like to know if there are private utility companies providing competition to Eksom. I'd like to know what the latest breakthroughs are in solar power. I'd like to know what other possible energy sources might be made available in Johannesburg. I'd like to know how much energy tourists and temporary visitors use. I'd like to better understand the process of how limited energy supply gets allocated to people and businesses. I'd like to better understand the economic impact to people and businesses of not having power.*

18. What else would you like to know or understand better? (It can be anything related to your problem.) List 5-10 things.

- **I want to learn more about?**
    - How can telemedicine help solve rural healthcare challenges?
    - What are the best practices for mobile health clinics?
    - How can governments increase healthcare funding for rural areas?
    - What are the most common diseases in rural areas that lead to preventable deaths?
    - How have other countries successfully improved rural healthcare systems?

## Step 7: Problem Statement

This step is the culmination of all you have done in Part A. You will synthesize the work you have done above to create a problem statement of 150 - 250 words. This should be in narrative form, 2-4 paragraphs, and should NOT use bullet points.

Your problem statement should:

- Provide a succinct description of the problem **in the first sentence**.
- Indicate specific population affected
- Explain the impact (cost, time, environmental, personal) and why the problem matters.
- Explain what reality would look like if the problem were solved. The gap that exists between present reality and the desired outcome should be clear.

Please cite (give credit to) where your information came from directly in your statement. Avoid word-for-word quoting and instead paraphrase (use your own words), as modeled in the example. Also list your sources and their urls (web addresses) at the end.

Example :

*Kenya's white rhinos are in critical danger of extinction. There are currently about 880 white rhinos in the country of Kenya, per Wikipedia. According to Chat GPT, Rhinos are considered a keystone species, meaning they have a disproportionately large impact on their ecosystem compared to their population size. Rhinos help shape their environment by influencing vegetation growth and acting as seed dispersers, which creates habitat for other species (per ChatGPT).*

*The extinction of white rhinos would have cascading effects on other plant and animal species in their habitat. According to the Kenya Wildlife Service, rhinos' presence in reserves and parks bring millions of tourists each year, contributing to local economies and supporting conservation efforts. Once a species goes extinct, it is gone forever. The extinction of rhinos would represent the loss of millions of years of evolutionary history, and unique genetic diversity that science has yet to fully understand and benefit from (per ChatGPT).*

*My problem would be considered solved when the population of wild, white rhinos in Kenya reaches 10,000, and when all imminent threats to their population including poaching and habitat destruction are not present. If this were the reality, it would create ecosystem balance, create large revenues from ecotourism, preserve important cultural symbols, and allow for genetic diversity that could benefit humanity in ways we may not yet fully understand.*

*Sources:*
*Kenya Wildlife Services Annual Report 2017, https://www.kws.go.ke/content/annual-reports*
*ChatGPT, https://chat.openai.com/*
*"White Rhinoceros", Wikipedia, https://en.wikipedia.org/wiki/White_rhinoceros*

19. My problem is statement is:

**roblem Statement**

Here's a sample problem statement for rural healthcare access:

"Lack of access to quality healthcare is a critical issue affecting rural communities in developing countries. According to the WHO, over 1 billion people globally are without essential healthcare services, and this gap disproportionately affects rural areas. Without adequate healthcare, residents in these regions suffer from preventable diseases and high mortality rates. The disparity is largely due to underfunded infrastructure, lack of trained medical staff, and limited government investment. Solving this problem would significantly reduce mortality, improve quality of life, and create long-term economic and social benefits for these underserved populations."

20. Please list all sources that you used to form your problem statement:


**Please go back to Savanna and continue with your learning content. You will be filling out Step 8 after you've completed the Peer Activity.**

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## Step 8: Peer Activity Report

This step is related to your peer activity and should help you to improve your problem statement. Answer the following questions as part of the activity and then update your Problem Statement in Step 7 above, based on your feedback.

21. Who reviewed your problem statement? (Give the first and last names of your 2 peers).

22. In brief, what feedback did they give to you?

23. Was their feedback useful to you? Did it feel kind? Why or why not?

24. Who did you give feedback to? (Give the first and last names of 2 peers- they may be the same or different peers from above.)

25. Do you feel that you gave useful and kind feedback to your peers? Why or why not?


**Please go back to Savanna and continue with your learning content. You will be prompted on when to return to complete Section B.**

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# SECTION B: Research Questions & Hypothesis

**IMPORTANT:** Complete this section AFTER completing the Savanna Modules *Asking Effective Questions* and *Web Research*.

## Step 9: Research Questions

Based on what you have learned so far and on 'Step 6: Areas for Learning' from this worksheet, come up with 3 research questions. **Research questions should be complex enough that they can't be answered by a single Google search.** If appropriate, form a hypothesis that your research may confirm or reject. (As a reminder, a hypothesis is a prediction of how you think your research will answer your research question. It is your best guess. If you truly have absolutely no idea, state "not applicable.")

Example Research Question #1:
*What are some ways can we increase rhino populations?*
Hypothesis*:*
*Rhino populations will be increased by creating more open spaces for them to roam, increasing their protection, increasing international interest in them, and other reasons I have yet to uncover.*

Example Research Question #2:
*Which organizations have been effective at wildlife conservation and what practices do they use?*
Hypothesis*:*

Not applicable; I don't know.

Example Research Question #3:
*How many babies can a typical female white rhino have in her lifetime, and what are the reasons a female may not have high fertility?*
Hypothesis*:*
*A typical female white rhino can have 5 babies in her lifetime, and fertility may be affected by diet, amount of grazing territory, poaching, stress, mate availability, and other reasons I have yet ot uncover.*

26. Research question #1:

Hypothesis (if applicable):

27. Research question #2:

Hypothesis (if applicable):

28. Research question #3:

Hypothesis (if applicable):


**Please go back to Savanna and continue with your learning content. You will be prompted on when to return to complete Section C.**

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# SECTION C: Web Research

## Part 1: Research Plan

You can plan out your research, for each of your research questions, using the template below.

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|---|
| 29. Step # 1: Define your objectives, 3 research questions & associated hypotheses. |
| Key Questions: What are you trying to accomplish with this research? What do you wish to find out that will accelerate your work in the right direction? |
| **Your Response:** |
| 30. Step # 2: Determine your end outputs. |
| Key Questions: What type of data/information is ideal for you to find, based on what you are trying to accomplish? Do you need to present it in any particular format? |
| **Your Response:** |

31. Step # 3: Scope your main sources of information.

Key Questions: Do you already know where you might want to go to find the information you're seeking? Are there particular entities or organizations that you know are seen as "experts" on the topic?

**Your Response:**


**After you update earlier parts of the worksheet based on your research plan, please go back to Savanna and continue with your learning content. Return to Part 2 and Part 3 prior to submitting your milestone.**

## Part 2: Conducting Research

You can answer the following questions as you complete conducting your research into your research questions.

32. Step 1: Begin gathering your required information.

Key Questions: What search terms should you use? How many reports/articles do you want to read before deciding you have seen enough?

**Your Response:**

33. Step 2: Evaluate the Validity/Credibility of Your Sources and Information

Key Questions: Are the sources credible and reliable? Consider the authority, accuracy, objectivity, and currency of the information to ensure its validity for your research.

| |
|---|
| **Your Response:** |
| 34. Step 3: Synthesize and Communicate Your Key Findings. |
| Key Questions: Summarize the key information and findings that you have gathered during your research. Organize these findings in a clear and coherent manner, ensuring that they directly address your research objectives and questions. |
| **Your Response:** |
| 35. Return to Your Original Objectives and Key Questions. |
| Key Questions: Revisit your initial objectives and key questions to ensure that your research findings adequately address them. Reflect on whether your findings have effectively contributed to solving the identified problem. |
| **Your Response:** |

## Part 3: Research Summary

In 200-300 words, provide an executive summary of your research in the text box below. You should be synthesizing information from multiple sources. Provide answers and explanations for the 3 questions you investigated and your key research findings. This should be in a narrative format (no bullet points), and be at least 3 paragraphs long.

Please use at least 3 different online sources such as ChatGPT, organizational websites, Wikipedia, etc. Please cite (give credit to) where your information came from directly in your statement. Avoid word-for-word quoting, paraphrase instead (use your own words), as modeled in the example. Also, list your sources and their URLs (web addresses) at the end.

36. Research Summary

**Once you have completed this worksheet, export/convert to .pdf, rename it per the instructions, and upload to Savanna as your Milestone # 3 Submission. Celebrate a job well done!**