

# ALX Professional Foundations: Milestone 3 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

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## 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?

Problem: There is a lack of access to quality education in Ethiopia, which has hindered the national development of the country.

Reality because of this problem: low quality of education, lack of access to education, limited economic growth.

Reality if the problem continues: There will be stunted national development, increased inequality, and last but not list persistent poverty.

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

Direct impact: The students( children and young adults who are unable to access education ) and teachers( educators who work in under-resourced schools with limited support ).

Indirect impact: The families( due to lack of education the student's families face economic and social challenges ) and communities ( due to the lack of educated individuals who could contribute to the local development the broader community suffers ).

Contributes to the Problem: Government( inadequate support for education in terms of financing and policy. ), socio economic factors ( cultural norms and poverty ), infrastructure ( Access to schools is restricted by inadequate infrastructure, particularly in rural areas. )

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

It's hard to say when exactly it began but Ethiopia has had a long history of educational shortcomings, which have been made worse by periods of political unrest, economic hardship, and underfunding of the education system.

It's difficult to state when it occurs but the Lack of access to quality education is a persistent issue that is particularly noticeable in underserved urban and rural communities. Basically it is still ongoing today.

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

Geographical Background:

Rural Locations: The issue is more severe in remote locations because there are few, far-between schools and frequently lacking facilities.

urban regions: Since schools are overcrowded and underfunded, education quality can suffer even in metropolitan regions.

Social-economic and Cultural Context:

Economic issues that place a higher priority on short-term financial gains than long-term educational investments and cultural attitudes toward education, particularly for girls, exacerbate the problem.

5. **Why** is this a problem? What are the pain points or gaps? Why do you personally care about this problem?

This is a problem because I believe this to be the source of most if not all the great challenges and it is the reason why the cycle of poverty still persists.

The pain points or gaps:

A, Economic stagnation: without it the country cannot develop a skilled workforce necessary for economic growth.

B, Social inequality: it particularly affects marginalized groups.

C, Political instability and security concerns: this arises due to lack of educated and qualified political leaders and also lack of well educated military personae ( for the most part ).

I personally care about this problem because I have seen it break apart my whole country to the brink of ruin and even today it still continues to persist.

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

In my opinion it will lead to economic growth , social equity and improved quality of life within the country.

Basically solving this grand challenge alone in my humble opinion will lead to the solution to all other grand challenges, easily breaking the cycle of incompetence and poverty that arises due to lack of proper education.

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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?

According to ChatGpt, the historical context of Ethiopia includes prolonged periods of political instability, underfunding of crucial sectors and economic hardship. Persistence instability and conflicts have significantly hindered the country's development, leading to systematic issues in infrastructure and economic stability. These issues have had a long lasting impact which is preventing the development of a skilled manpower and sustainable economic growth

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

A, Persistent underfunding of the education sector:

- Budget allocated by the Ethiopian government to education has relatively been small which results in insufficient resources for schools.
- The other is the low salaries paid to teachers which contributes to low motivation for the educators and underpaid teachers often tend to work multiple jobs which reduces their ability to provide quality education.

B, Economic instability: due to high levels of poverty in Ethiopia many families are not able to afford the costs associated with education, like uniforms, books and transportations. This barriers hinder children from attending school.

C, Inadequate infrastructure: many schools lack basic facilities and on top of that there are usually overcrowded classrooms due to limited funding and resources and large class sizes make it difficult for the teacher to provide attention to students which hinders effective learning.

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

- Ineffective policies that are due to lack of effective governance and inadequate financial support. basically the government has given low priority for education and has focused on short term political goals.
- Political instability like ongoing political unrest and security issues.
- Corruption and bureaucratic inefficiency obstructing policy implementation.

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

- Gender disparities: in many parts of the country traditional patriarchal norms prioritize male education over females. Families invest in schooling boys while the girls are expected to contribute to help with the household chores and marry at a young age, which result in low rate enrollment and high rate of dropout for girls.
- Low perceived value to education: many families especially in the rural area prioritize children working to contribute to the household income over attending school like herding livestock and farming.

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

According to ChatGpt

- Government officials and policymakers.
- Educators and school admins.
- Local communities and parents.
- Economic elites and businesses.
- International organizations and donors.
- Media and public opinion leaders.

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 ChatGpt this problem directly impacts approximately 28 million school-age children, 600,000 teachers

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

indirectly impacts approximately 128 million family members (*per ChatGPT*), 2 million community members (*per ChatGPT*), and potentially the entire national population. Furthermore, bad management methods brought on by a lack of education have an indirect impact on millions of livestock.

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.)

Approximately 8.6 million children in Ethiopia are without access to education (*per ChatGPT*). Certainly! According to UNICEF, the combined impact of COVID-19, conflict, and climate change has contributed to at least 13 million children being out of school in Ethiopia. This situation has long-term consequences for their future( according to Learning and development! | UNICEF Ethiopia ). Additionally, approximately 3.6 million children are currently out of school, and over 8,700 schools have been partially or severely damaged due to conflict and the climate crisis. Learning outcomes are also declining, with the number of second-grade Ethiopian students who can read dropping from 25% in 2018 to 13% in 2021( Increasing Number of Children Pushed Out of Education in Ethiopia Due to Severe Drought, Conflict and Forced Displacement (according to educationcannotwait.org) ).

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## 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?

All 28 million school age children in Ethiopia would be enrolled in and attending school, in short full enrollment and attendance of these students to quality education where all schools would have adequate infrastructure, manageable class size with student to teacher ratio, all 600,000 teachers would be well trained , adequately compensated and provided with ongoing professional development opportunities, every school would have sufficient educational materials and a literacy rate for children above age greater than 15 would be 100% with a graduation rate greater than 95%.Equal access to education for all children where special education needs are fully met generally equity and inclusivity.

16. Are there other benefits that would come from your problem being solved? Name at least one.

- Better and fair governance.
- Increased gdp of the country from the current average of 6% to 8% - 10% (per ChatGpt).
- Poverty rates would be halved from 24% to 12% within a decade (per ChatGpt).
- Crime rates could reduce by 30% due to increased employment opportunities and social stability (per ChatGpt).



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## 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 scope of the problem does not include any educational access outside of Ethiopia. It does neither include access to higher education nor does it cover non formal education systems. While inclusivity is a goal it does not specifically address access to severe disabilities that require specialized institutions and resources beyond standard public school accommodations. Political and economic policies outside of education are not in the scope.

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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 Eskom has failed to plan properly to update its infrastructure. I'd like to understand the relationship between Eskom and the South African government. I'd like to know if there are private utility companies providing competition to Eskom. 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.

19.

I'd like to better understand why the education curriculum is poorly designed. I would like to know what the old educational system was like before the formal European educational system was adopted. I want to know what the existing education policies in Ethiopia aimed at improving access and quality of education. I want to know what are the gaps in funding and how they could be addressed. I want to understand the primary barriers preventing children from attending school. I'd like to know how technology can be leveraged to improve access to and the quality of education. I'd like to know the current standards and practices for teacher training in Ethiopia.



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## 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](https://en.wikipedia.org/wiki/White_rhinoceros)

20. My problem is statement is:

About 8.6 million school-age children in Ethiopia do not currently attend school, making access to high-quality education a major concern. This issue limits economic growth and perpetuates cycles of poverty by affecting families, communities, and the general populace. Some of the main obstacles causing this problem include inadequate resources for learning, a shortage of qualified teachers, and inadequate infrastructure. There is an urgent need for comprehensive educational reform in Ethiopia because of the current status of education, which leads to low literacy rates, poor health outcomes, and social instability.

This issue affects more than just a few particular pupils. Due to a shortage of trained workers, families experience financial hardship, and communities experience decreased economic activity and declining standards of living. Ethiopia faces a workforce weak in education on a national level, impeding its economic growth and competitiveness. Furthermore, a lack of education prevents women and girls from advancing their socioeconomic standing, which in turn maintains gender inequality. It is imperative that this issue be resolved for the nation's general growth and prosperity.

If this issue was resolved, Ethiopia would see profound transformation. With 100% of school-age children enrolled in both primary and secondary education, all 28 million of them would be in school. There would be enough instructional materials, qualified teachers, and

suitable facilities in schools. There would be a 100% literacy rate and at least a 95% graduation rate from elementary and secondary education. Greater gender equality, societal stability, better health outcomes, and faster GDP growth are some of the wider advantages. This vision indicates the huge gap that needs to be closed in order to achieve educational equity and quality in Ethiopia, marking a considerable shift from the current reality.

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

"Ethiopia - Statistics & Facts," Statista,

<https://www.statista.com/statistics/455149/population-size-in-ethiopia/>

"Ethiopia's Education Sector Development," UNESCO, <https://en.unesco.org/countries/ethiopia>

ChatGPT, <https://chat.openai.com/>

"Ethiopia: Literacy rate," World Bank Data,

<https://data.worldbank.org/indicator/SE.ADT.LITR.ZS?locations=ET>

"Poverty & Equity Brief - Ethiopia," World Bank,

[https://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Archives-2019/Global\\_POVEQ\\_ETH.pdf](https://databank.worldbank.org/data/download/poverty/33EF03BB-9722-4AE2-ABC7-AA2972D68AFE/Archives-2019/Global_POVEQ_ETH.pdf)



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.

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

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

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

25. 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.)

26. 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 to uncover.*



27. Research question #1:

Hypothesis (if applicable):

28. Research question #2:

Hypothesis (if applicable):

29. 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.

30. 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:**

31. 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:**

32. 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 updated 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.

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## Part 2: Conducting Research

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

### 33. 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:**

### 34. 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:**

### 35. 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:**

### 36. 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.

### 37. 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!**