

TAKE HOME EXERCISE

OVERVIEW / CONSIDERATIONS

Thank you for taking the time to work on these exercises.

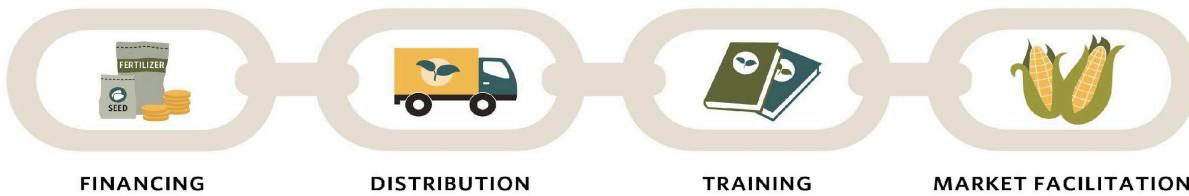
- **Why we use exercises:**
 - To assess if your skills match the requirements of the role we're offering.
 - To serve as a helpful tool for you to evaluate whether this is the kind of work you'd be excited to take on.
- **Assumptions** - You will need to make a few assumptions as you work through this assignment. Trust your instincts, but make sure to clearly explain any assumptions that significantly inform each of your deliverables.
- **Limited context** - We recognize that more quantitative and qualitative data would be ideal for arriving at the most accurate answer, but for the purpose of the exercises, please base your recommendations on the information available and to a certain extent your expertise.
- **Technique:** Please note that you will be graded on the techniques you use to complete the analysis. **For example, using hard-coded numbers or Pivot Tables will receive the lowest score, as it doesn't allow us to understand your thought process.**
- **Time Allocation** - You have 4 deliverables, we recommend that you take between 3.5 - 4 hours to complete them

We do not use your exercise output in any way. Good luck, and thank you again for your interest in One Acre Fund!

OAF CONTEXT

OAF supplies smallholder farmers with everything they need to grow their way out of poverty. Simple interventions like providing access to naturally-produced hybrid seed, quality fertilizer, and training on farming best practices can have a dramatic impact. We envision a future in which every farm family has the knowledge and means to achieve big harvests, support healthy families, and cultivate rich soil. We do this through our 5 business units: Field program, Rural Retail, Market Access, and Extension & other programs.

Field Program - For this exercise, we will zoom into the Field program. OAF offers agricultural inputs (e.g. fertilizer and seed) and other products on credit to farmers along with regular training throughout the growing season - a bundle of products. Farmers are required to repay this credit balance in small installments through the growing season.



In all our countries of operation, inputs are distributed to farmers 1-2 months before the planting season which means that inputs need to be purchased several months before distribution. Seeds are usually sourced from local suppliers and paid in local currencies (LC) while fertilizers are imported and paid in USD.

Different One Acre Fund countries have different calendars but for this exercise, we will use Malawi's 2024 calendar showing the full cycle from input orders to farmer repayment

Month	2024												2025					
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J
Input Forecasting and Ordering	●	●	●	●	●													
Farmer Enrolment							●	●										
Prepayment & Qualification								●	●									
Import & Receipt of Inputs								●	●	●								
Inputs distribution										●	●	●						
Planting												●	●	●				
Harvesting													●	●	●	●	●	●
Repayment										●	●	●	●	●	●	●	●	●

EXERCISE 1 - PRICING MODEL

Price setting process

In Malawi, the budget for 2024 was completed and approved by the board in October 2023. As shown in the table above the distribution happens between Sept and Dec. Before distribution the FP&A Specialist is required to model the pricing of the different bundles and get approval from the CFO and Country Director (CD) by August of 2024.

You have been provided with the [2024 Pricing Model](#) workbook so as to start work on the pricing model. The important tabs to note are:

- **Start Here** - Contains comprehensive definitions and detailed explanations for each tab
- **Pricing Model** - The final output that you will present to the CFO and CD

The following new information has become available since the budget was approved in October 2023:

- **Currency Devaluation** The budget was done at an FX rate of 1242. However, as at Dec 2023, the FX rate was at 1700 due to a 44% devaluation of the Malawi Kwacha. There are speculations in the market of a further 15% devaluation in Q2 of 2024
- **Strong repayment** - The program has experienced a very strong repayment rate, with projected repayment of 98%

DELIVERABLE 1 - Submit an Excel workbook with the [Pricing Model](#) and [Input Sheet Tabs](#) populated.

- Include an explanation of your process including assumptions made (if any), the formulas you used etc

DELIVERABLE 2 - Draft a memo for the CFO and CD, outlining additional factors beyond those specified in the model's assumptions that warrant consideration during their review of the pricing model

EXERCISE 2 - Assignment: Coding test

Objective 1: Showcase user support and user stories documentation.

Objective 2: Demonstrate data and analytical skills; Ability to quickly review, synthesize, analyze, and communicate data in dashboards.

Objective 2: Demonstrate your understanding of BI tools to create dashboards.

For this exercise, you have been tasked with creating a dashboard using the pricing model you created in Exercise 1. For 2024 actuals assume a similar bundle adoption rate as 2023.

Deliverables 3

Your final submission should include the following;

1. User stories - detailing the use cases for the dashboard you are creating.
2. Create a small database with 2 tables.
3. Code used to extract the data. If you used a self-service platform that doesn't require coding (e.g. Power BI), please include a description of the steps you took.
4. Code used to aggregate and manipulate the data points to give the metrics- This could be an SQL Queries/ Data Manipulation Language, R-scripts, or Excel-level analysis.
5. For a self-service platform that doesn't require coding (e.g. Power BI), please include a description of the steps you took to manipulate the data points required.
6. A performance dashboard - you can share this via screenshots, a link to access a deployed version online, or via files that allow us to open the tool on our computers.
7. Explain the various types of charts used and why.

Use of external resources

- All work should be your own.
- Feel free to use online resources. If you lift code directly from an online source, note the source in the comments. It doesn't need to be a formal citation, just let us know.
- While in this role you'll be working in a team and have co-workers as resources for all your work.
- For the sake of this exercise, we expect you to complete it on your own without the help of peers or friends.