Cassava requires different nutrients to grow. The 3 most important nutrients are:

- **Nitrogen**: required for the growth of stems and leaves.
- **Phosphorus**: provides the crop with the energy needed for growth.
- **Potassium**: required for the bulking of the storage roots.

Some fertilizers supply all 3 of these nutrients (e.g. NPK 15:15:15, NPK 17:17:17 or NPK 20:10:10) while other fertilizers only supply 1 or 2 of these nutrients (e.g. urea 46:0:0, DAP 18:46:0 and MOP 0:0:60).

Cassava requires all 3 of these nutrients, but the amounts depend on the fertility of the soil and the planting date. For this reason, a combination of fertilizers is preferred over a single complex fertilizer. In this tool, we will focus on the use of Urea, DAP and MOP.

**STEP 3: Decide the Fertilizer Application Rate**

What cassava yield did you obtain in your field in the past (without fertilizer applied)? Compare the size of root stocks obtained with the picture. Is your yield commonly...

- lower (less than 6 tonnes per acre)? (Most common yield)
- about the same (between 6 and 8 tonnes per acre)?
- higher (more than 8 tonnes per acre)? (Very high yield)

Use the flyer with maps to obtain the fertilizer rate for your LGA. Recommendations are provided in kilograms of urea, DAP and MOP fertilizer per acre. Convert these to the rates required for your field using the rule of three.

\[
\text{Area of your field (acre)} \times \text{Fertilizer needed for 1 acre (kg)} = \text{Fertilizer needed for your field (kg)}
\]
**STEP 4: Calculate Cost and Benefits**

Using fertilizer only makes sense if the value gained from the increase in root yield is larger than the cost of the fertilizer. The recommended rates are calculated using the common prices of roots and cost* of fertilizer in your area.

*You must confirm the profitability of fertilizer use. Calculate the cost and expected benefit.*

**Total Cost of Fertilizer**

\[
\text{Price of 1 bag of Urea (NGN)} \times \frac{\text{Weight of 1 bag of urea (kg)}}{\text{Expected extra yield (tonnes/acre)}} + \text{Price of 1 bag of DAP (NGN)} \times \frac{\text{Weight of 1 bag of DAP (kg)}}{\text{Expected extra yield (tonnes/acre)}} + \text{Price of 1 bag of MOP (NGN)} \times \frac{\text{Weight of 1 bag of MOP (kg)}}{\text{Expected extra yield (tonnes/acre)}}
\]

\*Your trusted agrodealer can provide you with fertilizer prices

Urea, DAP and MOP needed for 1 acre and the expected extra yield are obtained from the flyers with maps.

**Is the Expected Gross Value Increase larger than the Total Cost of Fertilizer?**

- **No.**
  - Fertilizer is not profitable. Do not apply.

- **Yes, but less than twice the total cost of fertilizer.**
  - Only apply fertilizer if you can accept some risk.

- **Yes, it is more than twice the total cost of fertilizer.**
  - Fertilizer is profitable. Apply fertilizer.

**STEP 5: Apply Fertilizer at the right time**

- Fertilizer must always be applied when the soil is moist, after 1 or 2 rain showers.
- Apply the full dose of DAP at planting.
- Urea and MOP are best split-applied in 2 to 4 equal doses. Apply the first split 1 month after planting. Spread subsequent splits, as rains permit, over the next 2 to 3 months.

**STEP 6: Apply Fertilizer in the right way**

- Make a 5 cm deep half-moon, or full ring furrow about 20 cm away from each cassava plant.
- Spread the required amount of fertilizer in the furrow and cover with soil.
- Distributing the fertilizer dose equally to all plants is tricky and requires some practice. Using bottle cap measures can assist to get the dosage right (see front page).