****

**NIGERIA SOUTHERN GUINEA SAVANNA AGRO-ECOLOGY**

**Fertilizer Use Optimizer**

**The below assumes:**

**Calibration measurement** is with: a FARO (FARO) that holds about 12 g urea, 20 g of SSP, 18 g KCl, 9g NPK 15:15:15, 11g of NPK 20:10:10, and 32g ZnSO4; and with a GINO tomato can (GINO) of 70 ml to hold 92.g urea, 155 g of SSP, 139 g KCl, 248g ZnSO4, 70 g NPK 15:15:15, and 84 g NPK 20:10:10.

**Planting:** Maize, sorghum and pulses are planted at 75 cm x 25 cm; pearl millet 1 x 1 m; cassava 1 x 1 m.

**Crop values:** Naira/kg 50 maize; 60 Sorghum; 67 Rice; 56 pearl millet; 120 unshelled groundnut; 165 cowpea, 120 soybean, and 20 cassava.

**Fertilizer use costs for Naira for 50 kg:** 5500 Urea; 4500 SSP; 7000 MOP, 6000 for NPK 15-15-15 and 20-10-10; and 2000/kg for ZnSO4.

**Broadcast width:** 2.5 m; **WAP**=weeks after planting, **WAT**=weeks after transplanting

**Level 3: Financial ability (maximizes profit per hectare).**

**Maize:** Point apply 100 kg NPK 15:15:15 (1 FARO for 5 plants) at 3 WAP. Point apply 150 kg Urea at 6 WAP (1 FARO for 4 plants).

**Cowpea:** Point apply 125 kg SSP at 3 WAP planting (1 FARO for 9 plants).

**Groundnut:** Mix 100 kg SSP with 100 kg NPK 15:15:15 and Point apply (1 FARO 3 plants) at 2 WAP.

**Lowland Rice:** Broadcast 100 kg NPK 15:15:15 at 1 WAT (1 GINO for 3.1 m) and broadcast 75 kg Urea at 5 WAT (1 GINO for 12 m).

**Upland rice:** Broadcast 150 kg of NPK 15:15:15 at 2WAP (1 GINO 1.2 m) and broadcast 50 kg Urea at 6 WAP (1 GINO 3.1 m)

**Sorghum:** Point apply 200 kg of NPK 15:15:15 (1 FARO for 2 plants) at 2WAP. Point apply 50kg Urea (1 FARO for 13 plants) at 6 WAP

**Soybean:** Point apply 250 kg SSP (1 FARO for 4 plants) at 2 WAP.

**Level 2 financial ability.**

**Maize:** Point apply 71 kg Urea (1 FARO for 9 plants) at 3 WAP. Point apply 71 kg Urea (1 FARO for 9 plants) at 6WAP

**Cowpea:** Mix and point apply 100kg of NPK 15:15:15 with 150 kg SSP at 3 WAP planting (1 FARO for 3 plants).

**Groundnut:** Mix and point apply 100kg of NPK 15:15:15 with 150 kg SSP at 3 WAP planting (1 FARO for 3 plants

**Lowland rice:** Broadcast 50 kg of NPK 15: 15:15 at 2 WAT (1 GINO for 6 m) and broadcast 50 kg Urea at 6 WAP (1 GINO 3.1 m

**Upland rice:** Broadcast 50kg of NPK 15: 15:15 at 2WAP (1 GINO for 6 m) and broadcast 50 kg NPK 15:15:15 at 6 WAP (1 GINO for 6 m).

**Sorghum:** Point apply 150 kg NPK 15:15:15 (1 FARO for 3 plants) at 4WAP.

**Soybean:** Point apply 174 kg of SSP (1 FARO for 6 plants) at 2 WAP.

**Level 1 financial ability.**

**Maize:** Point apply 68 kg Urea (1 FARO for 9 plants) at 3WAP.

**Cowpea:** Mix 150 kg SSP with 50 kg NPK 15:15:15 and Point apply at 3 WAP planting (1 FARO for 4 plants).

**Groundnut:** Mix 50 kg NPK 15:15:15 and 50 kg SSP and point apply (1 FARO 7 plants) at 2 WAP.

**Lowland rice:** Broadcast 45 kg Urea at 1 WAT (1 GINO for 8 m)

**Upland rice:** Broadcast 100 kg of NPK 15:15:15 at 3 WAP (1 GINO for 8 m).

**Sorghum:** Point apply 50 kg of Urea (1 FARO for 13 plants) at 4 WAP.

**Soybean:** Point apply 56 kg SSP (1 FARO for 19 plants) at 2 WAP.