HIGH-LEVEL MEETING ON THE INITIATIVE FOR THE ADAPTATION OF AFRICAN AGRICULTURE TO CLIMATE CHANGE "AAA"

RENCONTRE DE HAUT NIVEAU SUR L'INITIATIVE POUR L'ADAPTATION DE L'AGRICULTURE AFRICAINE AUX CHANGEMENTS CLIMATIQUES "AAA"
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Fertilizer Use in Africa

presented
by
Amit Roy
At the
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Guiding Principles

• Holistic approach for improving:
  • **Access**: Increase volume, range and quality of inputs using commercial channels
  • **Affordability**: Make inputs affordable, particularly for smallholder farmers
  • **Incentives**: Improve productivity and functioning of the output markets through public-private partnerships

Abuja Declaration: 12 Resolutions
What is the progress since the Fertilizer Summit?
Evolution of Africa’s fertilizer demand (Mt nutrients)

Strong demand growth since 2008, driven by SSA
- Boosted by GDP growth, policy support, private investments

Baseline scenario:
- +70% between 2008 and 2019 for Africa
- +130% for SSA without South Africa
- Regional demand seen reaching 7 Mt by 2019
- In 2019, SSA would account for 2.2% of world demand

Source: IFA Agriculture
SSA fertilizer demand
2014 estimates (kt nutrients)

Source: IFA Agriculture
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Application rates increase steadily but remain well below the Abuja target (50 kg/ha)

- Close to 15 kg/ha in 2013
- Expected to reach 17 kg/ha by 2019
- At that pace, 50 kg/ha will be reached in... 50 years from now!

Source: IFA Agriculture
Access

*Increase volume, range and quality of inputs using commercial channels*
Africa’s Resources

Africa has over 60% of world’s phosphate reserves/resources

- In West Africa:
  - 11 major production facilities in operation and 7 more planned/under construction
  - 22 bulk blending facilities in operation and 2 more planned/under construction

- In North Africa:
  - New dedicated production facility for Africa in Morocco

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Affordability
Make inputs affordable, particularly for smallholder farmers
Fertilizer Price and Road Density

Fertilizer Price Formation

- Thailand: 81% (X), 11% (X+50%), 2% (X+80%)
- Tanzania: 65% (X), 22% (X+50%), 0.5% (X+80%)
- Mali: 49% (X), 52% (X+50%), 6% (X+80%)

Retail Price: X

Transport Cost:
- X+50%
- X+80%

Km of Paved Roads/ Million Capita

Infrastructure Investment; A Priority for African Countries and Development Partners

Product Cost (FOB + Bagging)
Taxes and Levies
Total Overheads
Total Margins

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Fertile Soil is Essential to Increasing Fertilizer Efficiency and Crop Yields

Integrated Soil Fertility Management
Cereal yields in Sahel

Source: Henk Breman

Field With ISFM Practice

Field Without ISFM Practice

Cereal yield (t/ha) vs Rainfall (mm/year)

- ISFM
- Fertilized
- No

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Point Placement Technologies

Fertilizer Deep Placement on Irrigated Rice: Point placement of urea briquettes between rice plants 7-10 cm below the soil surface and 7 days after transplanting rice

Micro Dosing on Millet and Sorghum: Point placing 1 bottle cap (4.5g) of compound fertilizers for every plant stand to enhance fertilizer use efficiency and reduce crop failures in semi-arid areas
N Balance for UDP and Split Applied Urea in Wetland Rice.

### Split Application
- **In Grain**: 23%
- **In Soil**: 33%
- **In Straw**: 9%
- **Unaccounted**: 35%

### UDP
- **In Grain**: 42%
- **In Soil**: 31%
- **In Straw**: 23%
- **Unaccounted**: 4%
UDP Reduces N losses to the Environment

Nitrogen in Floodwater

Ammonia volatilization

Source: IFDC

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Economically Attractive

Average Yield Increase (mt/ha) Compared to Urea Broadcasting / Conventional Farmer Practice

- Rice (fields under UDP): 2.67 mt/ha
- Millet (in fields under MD): 0.29 mt/ha
- Sorghum (in fields under MD): 0.88 mt/ha

Gross Margin Per Hectare ($)

- Irrigated rice under UDP: $573
- Millet under MD: $122
- Sorghum under MD: $137

* MD - Microdosing
UDP - Urea Deep Placement

Source: IFDC
Incentives
Improve productivity and functioning of the output markets through public-private partnerships
Output market drives fertilizer demand
Agribusiness Cluster
Cassava Revolution through PPP*

Commercial cassava farming

35-40 t/ha using new cassava variety and balanced fertilization

Harvested cassava transported to processing unit

Mobile unit to process cassava in village clusters

* Public-Private Partnership

Cassava Flour

Cassava Beer

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In Conclusion

Eco-intensification way forward for Africa

Creating new farmland is a major contributor to GHG

Sources of Greenhouse Gas Emissions (GHG)

- Energy sector: 74%
- Agriculture: 13%
- Waste: 7%
- Industrial Processes: 2%

Creating new farmland is a major contributor to GHG
Thank You