



# African Energy Commission (AFREC)

## WORKSHOP ON THE STRATEGIC FRAMEWORK FOR THE AFRICAN BIOENERGY DATA MANAGEMENT

Bioenergy Production Data : What data are needed ?

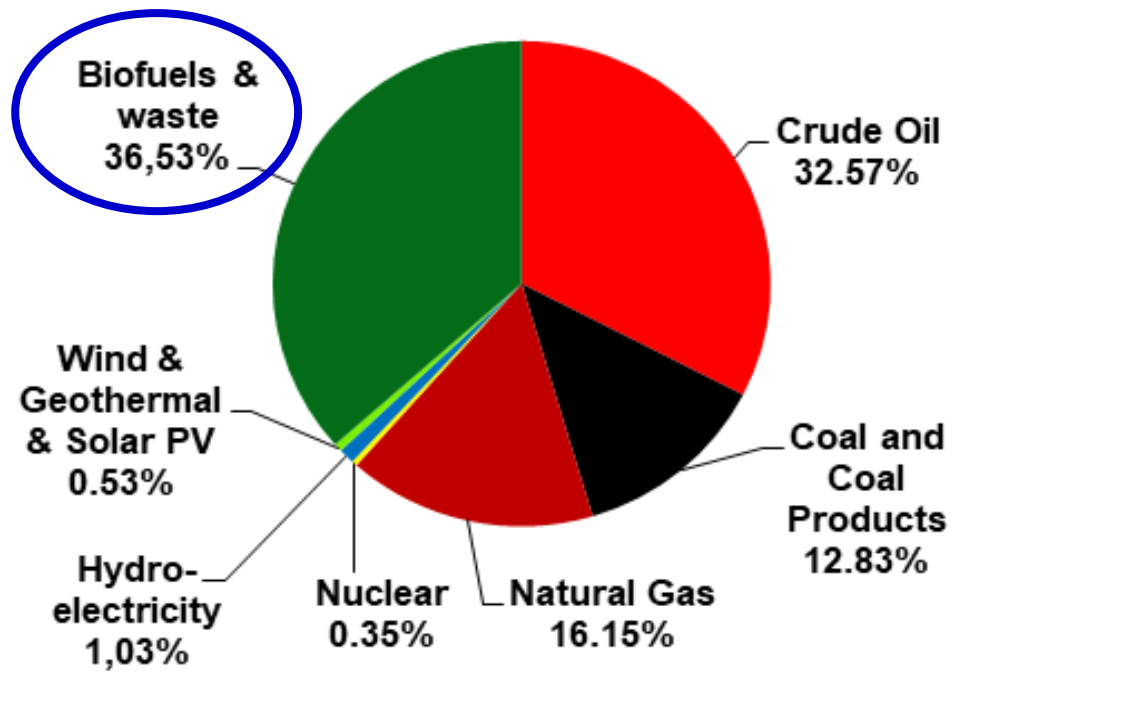
24 to 26 Avril 2023 | Hotel SARAOKAWA

Mr. Abdoulaye OUEDDO  
SPO - EIS

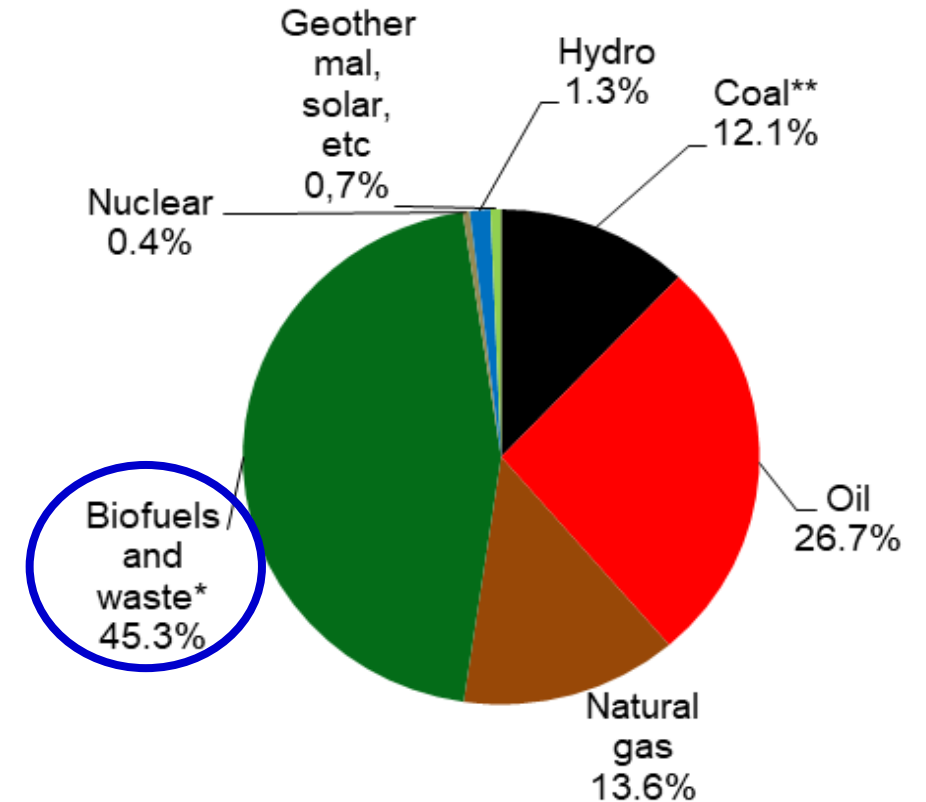


# Bioenergy production data

## Energy Production in Africa



## Share of Biofuels & waste in TPES in Africa



Source : AFREC 2020

# Bioenergy Production data

Main Menu

Unit Converter

Save

Biomass & Waste Questionnaire

Select a country -

Aggregated/detailed view

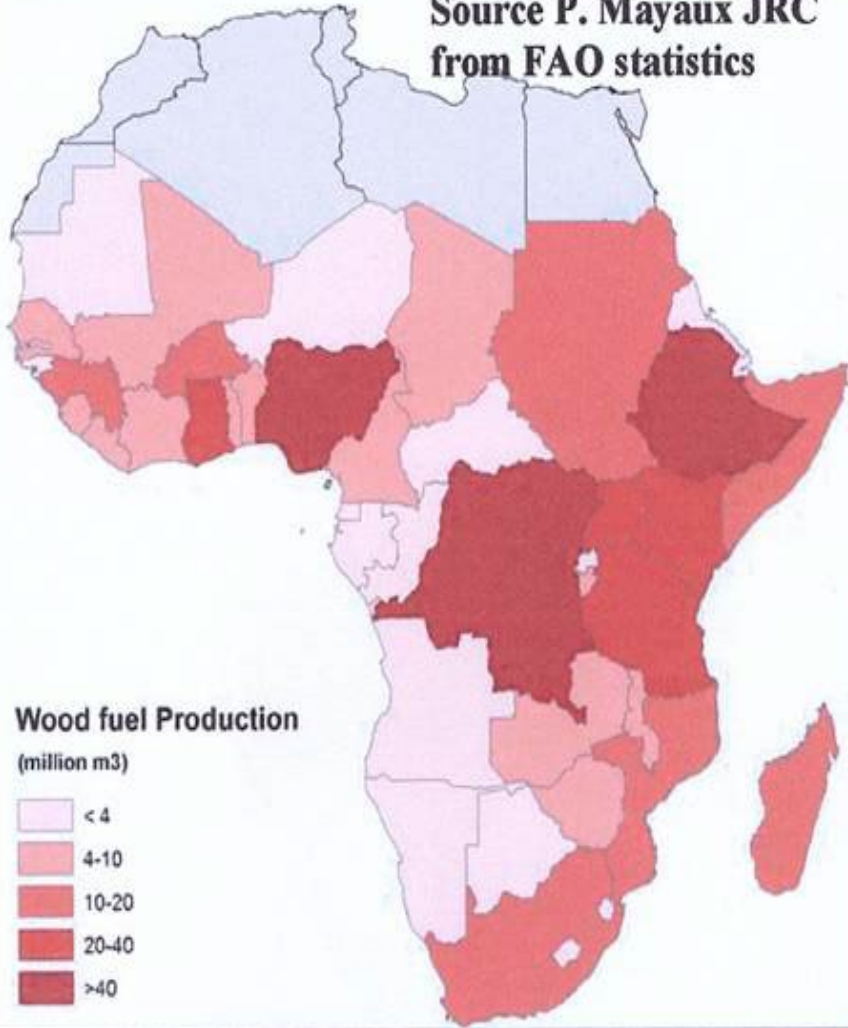
DETAIL <<<< In each of the cells to the left, select "DETAIL" if you want the balances to be calculated using the sum of the detail for each product. If you don't have the detail, please enter a value in the green column(s) and select "AGGREG" by overwriting the formula and deleting the detail if necessary. Don't forget to provide a calorific value in the dedicated table for the corresponding column if you select "AGGREG" (e.g E73 for "hard coal")

DETAIL <<<<

	Volume	of which non-commercial	Energy crops	Wood waste	Black liquor	Straw	Bagasse	Rice husks	Palm oil residues	Other vegetal and agricultural waste	Animal waste	Other primary solid biofuels n.e.c.	Biomass pellets and briquettes	Charcoal	Other solid biomass	Other solid biofuels unspecified	Biomass	Liquid biofuels (blended not included)	Biomass (blended not included)	Biomass (blended not included)	Other liquid biofuels (blended not included)	Industrial waste	Municipal waste	
	Please specify product name:															TJ (MCV)	TJ (MCV)	kt	kt	kt	kt	kt	kt	
UNIT	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	kt	TJ (MWh)	TJ (MWh)
Production	0,0																							
Imports (+)	0,0																							
Exports (-)	0,0																							
Stock Changes (+ draw, - build)	0,0																							
<b>TOTAL PRIMARY ENERGY SUPPLY</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Transfers : Origin (-) and Destination</b>	0,0																							
<b>Statistical Difference</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>TRANSFORMATION Inputs (-) and Outputs (+)</b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Main activity producer electricity	0,0																							
Main activity producer CHP	0,0																							
Main activity producer heat	0,0																							
Autoproducer electricity	0,0																							
Autoproducer CHP	0,0																							
Autoproducer heat	0,0																							
Coke ovens	0,0																							
Coal-to-liquids plants	0,0																							
Patent fuel plants	0,0																							
BKB plants	0,0																							
Gas works	0,0																							
Gas-to-liquids plants	0,0																							
Blast furnaces	0,0																							
Oil Refineries	0,0																							
Charcoal production plants	0,0																							
Biomass pellets production plants	0,0																							
Biomass briquette production plants	0,0																							
Natural gas blending plants	0,0																							
Petrochemical plants	0,0																							
Transformation not elsewhere specified	0,0																							

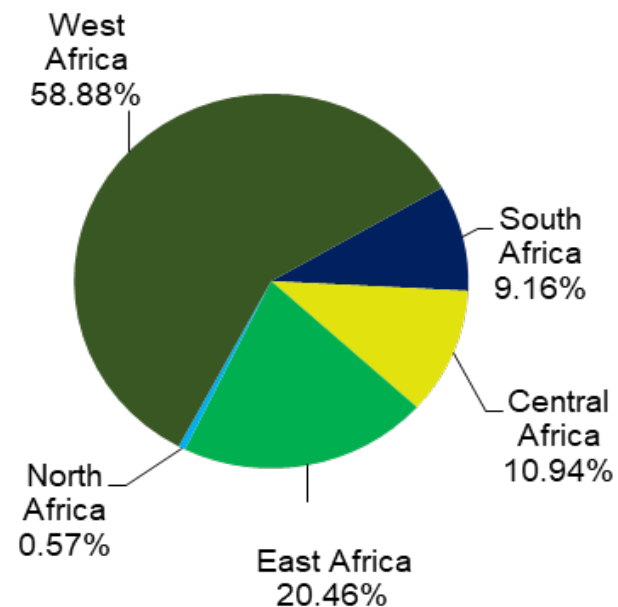
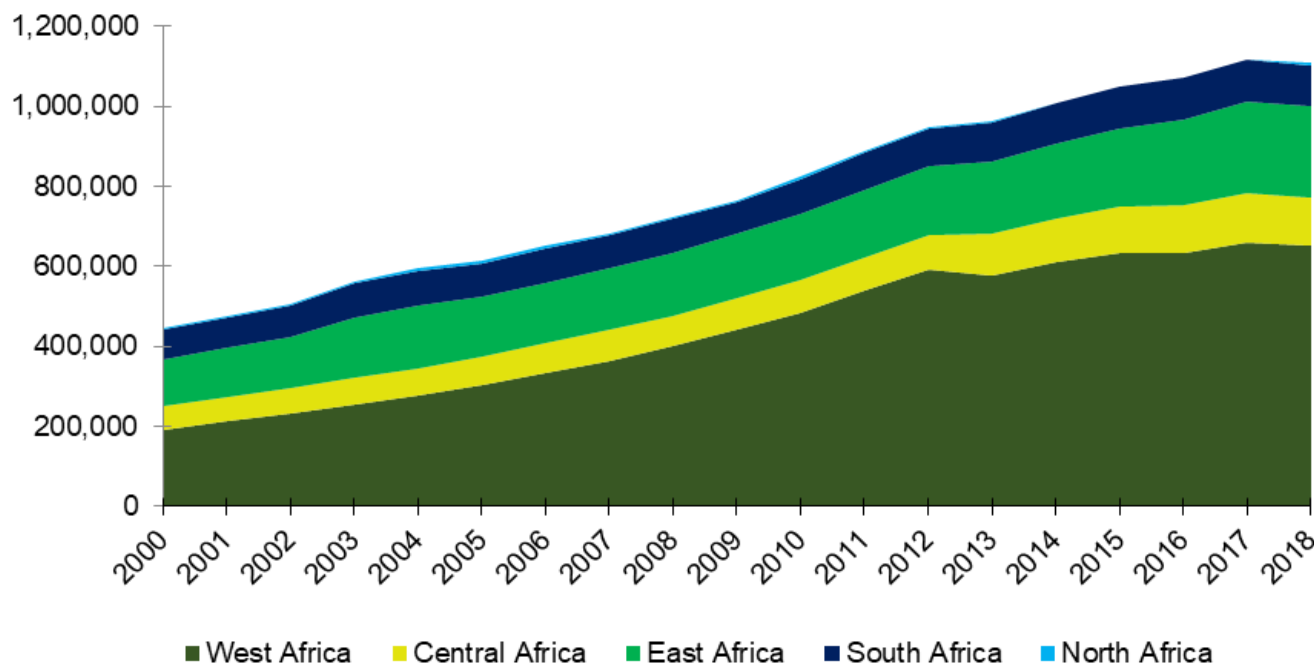
# Wood fuel production

Source P. Mayaux JRC  
from FAO statistics



- ✦ Sub-Saharan Africa produces 600million m3 of wood fuel/yr which covers 60% to 80% of the energy needs depending on country and region.
- ✦ In comparison, the EU produces around 90 million m3 of wood fuel/yr, which covers less than 1% to 18% of the energy consumption, depending on country and region.
- ✦ The efficiency of production in Africa is low compared to EU.
- ✦ For Charcoal production in Sub-Saharan Africa using traditional earth-mound kilns 5 -10 tonnes of wood are needed to produce 1 tonne of charcoal.

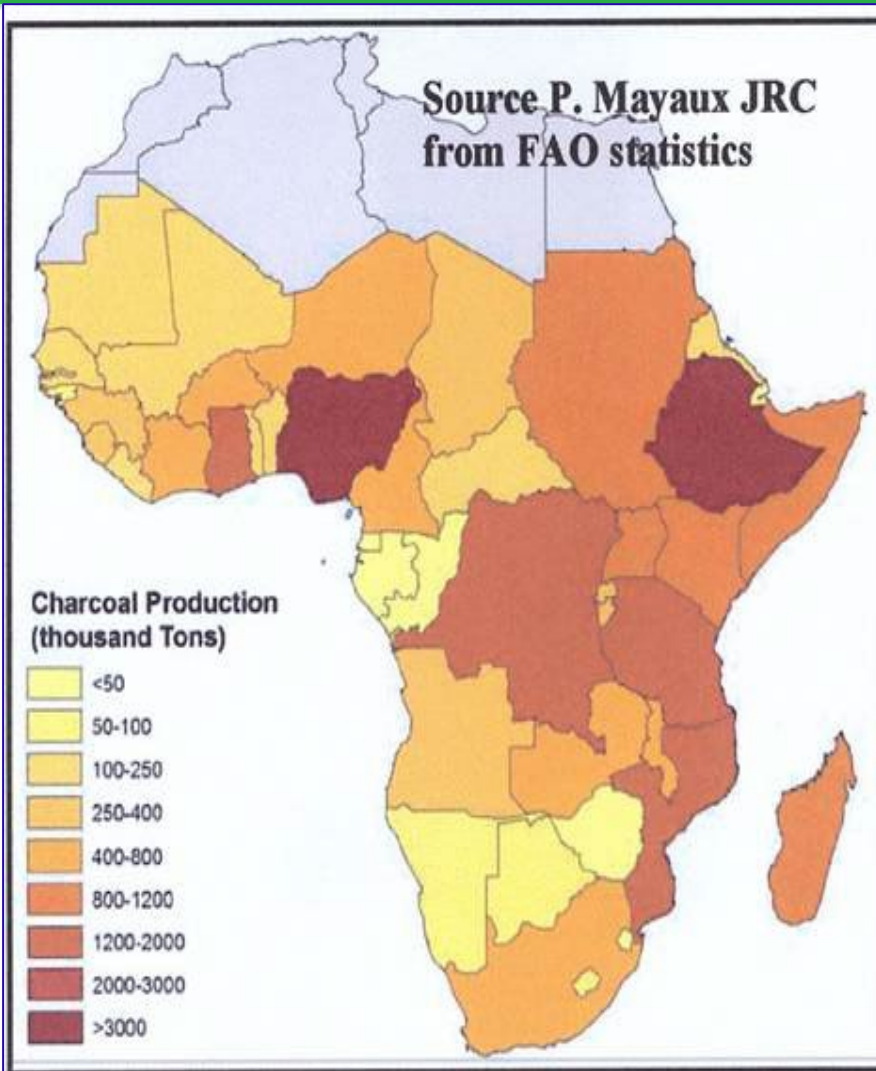
# Firewood production (Solid Biofuels)



N°	Producer	kt
1.	Nigeria	547 477
2.	Ethiopia	102 658
3.	DR Congo	85 087
4.	Uganda	37 813
5.	Kenya	35 034
6.	Tanzania	20 252
7.	Sudan	19 410
8.	Zambia	18 977
9.	Mozambique	17 456
10.	South Africa	17 398

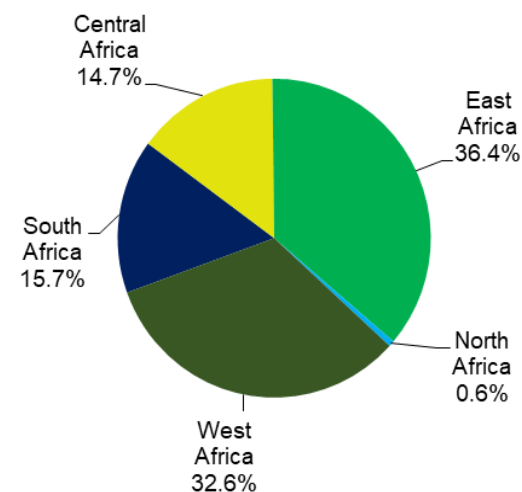
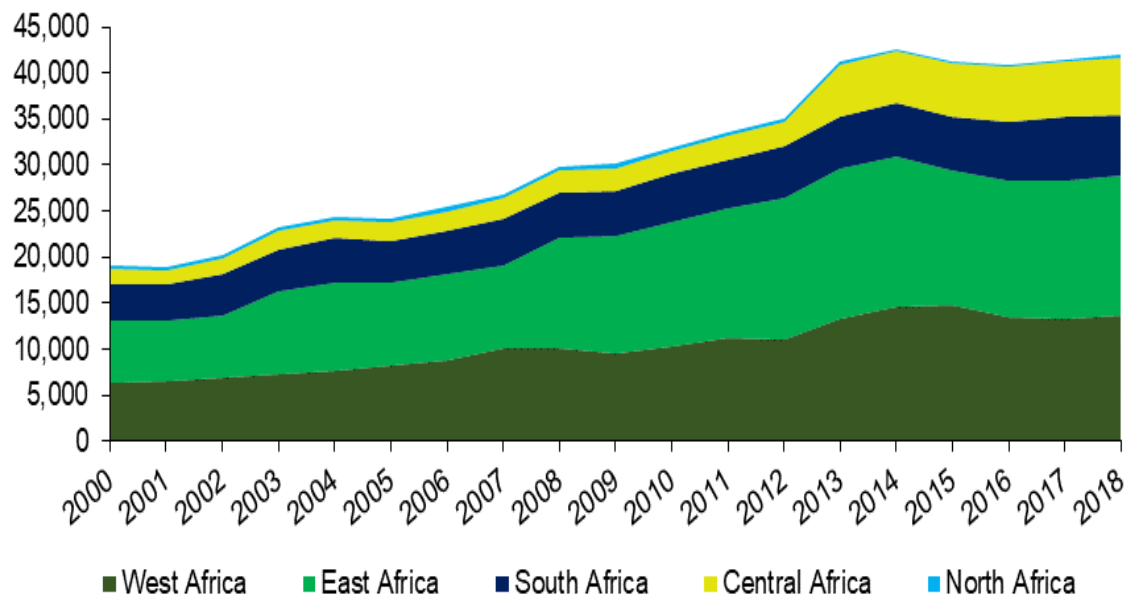
Source : AFREC 2020

# Firewood production (Solid Biofuels)



- ✦ Africa produces over 15,271.00 kt of charcoal/yr but the undeclared production may far exceed this figure.
- ✦ In Tanzania, for example, only 25% of the estimated 24,500 sacks of charcoal consumed daily in the city of Dar Es Salaam are accounted for at the road checkpoint.

# Charcoal production (Solid Biofuels)



N°	Producer	kt
1.	Ethiopia	6 645
2.	Nigeria	4 574
3.	DR Congo	4 130
4.	Soudan	2 017
5.	Uganda	1 979
6.	Guinea	1 970
7.	Tanzania	1 955
8.	Ghana	1 719
9.	Mozambique	1 559
10.	Madagascar	1 534

Source : AFREC 2020

# Traditional Earth-Mount Kiln



**Using traditional kilns, 60-80% of wood's energy is lost in charcoal production process**



# Challenges

- Policy makers need to know key information on the Bioenergy sector :

👉 Who produces/collects what ?



👉 Who transforms what (charcoal)



👉 Who distributes what



## How to collect necessary data ?

There are four main methodologies:

Survey

Modeling

Measuring

Administrative sources

*There are often a combination of various methodologies*

# Conclusion

- ❑ **Surveys seem to be the best way of getting quantitative and qualitative information and data.**
- ❑ **AFREC plans to develop a tool for collecting missing data on bioenergy to the MS.**

**Thank you**  
**Merci**  
**شكرا**  
**Obrigado**

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