



## Improving Data Quality and Coverage On The Impacts of Biofuels Consumption on Health, Environment, GDP, Employment and Education.

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Presented at the Workshop on the Strategic Framework for the African Bioenergy Data Management, Sarakawa Hotel, Lomé, Togo, 24-26 April 2023

# Recent Woodfuel Surveys in Nigeria

## 1<sup>st</sup> Case Study

- **Fuelwood Consumption in Abuja FCT, 2015**

## 2<sup>nd</sup> Case Study

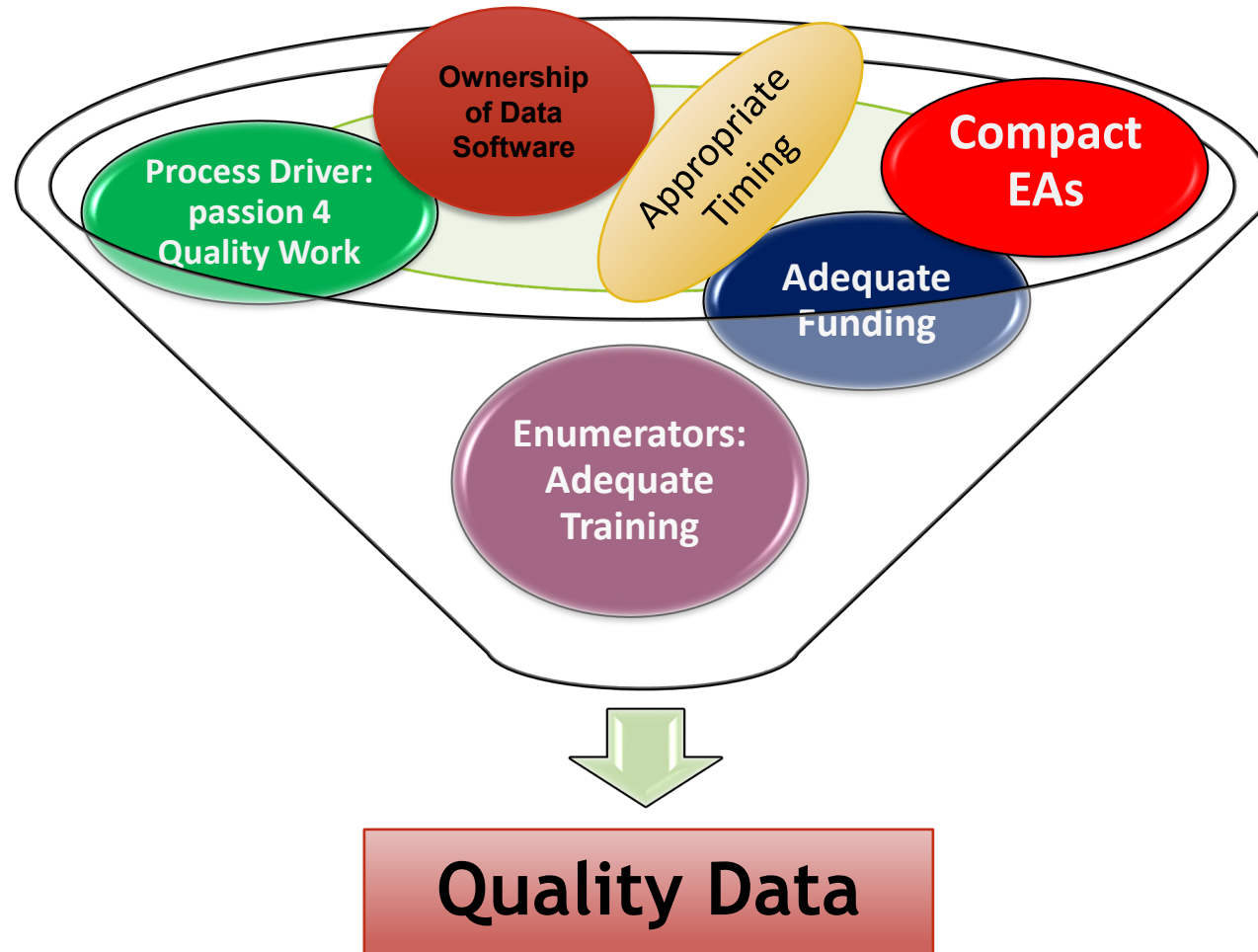
- **Survey of Fuelwood Consumption in Nigeria for Environmental Protection in Kogi and Kwara States of Nigeria, 2017**

## 3<sup>rd</sup> Case Study

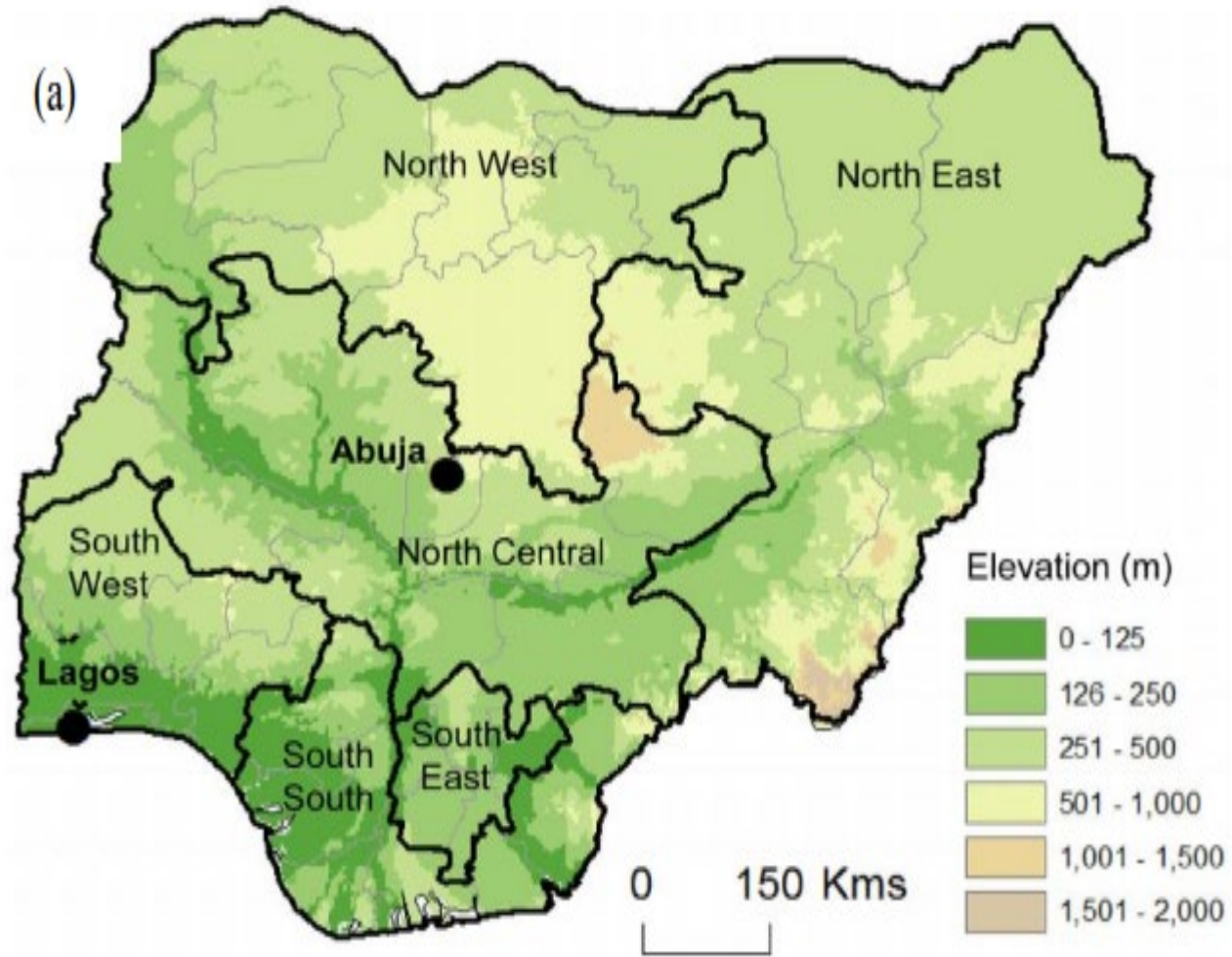
- **Pilot Testing of Residential Woodfuel Supplementary Module (WSM) in North-West Zone of Nigeria.**



# Good Case - Some Recommendations

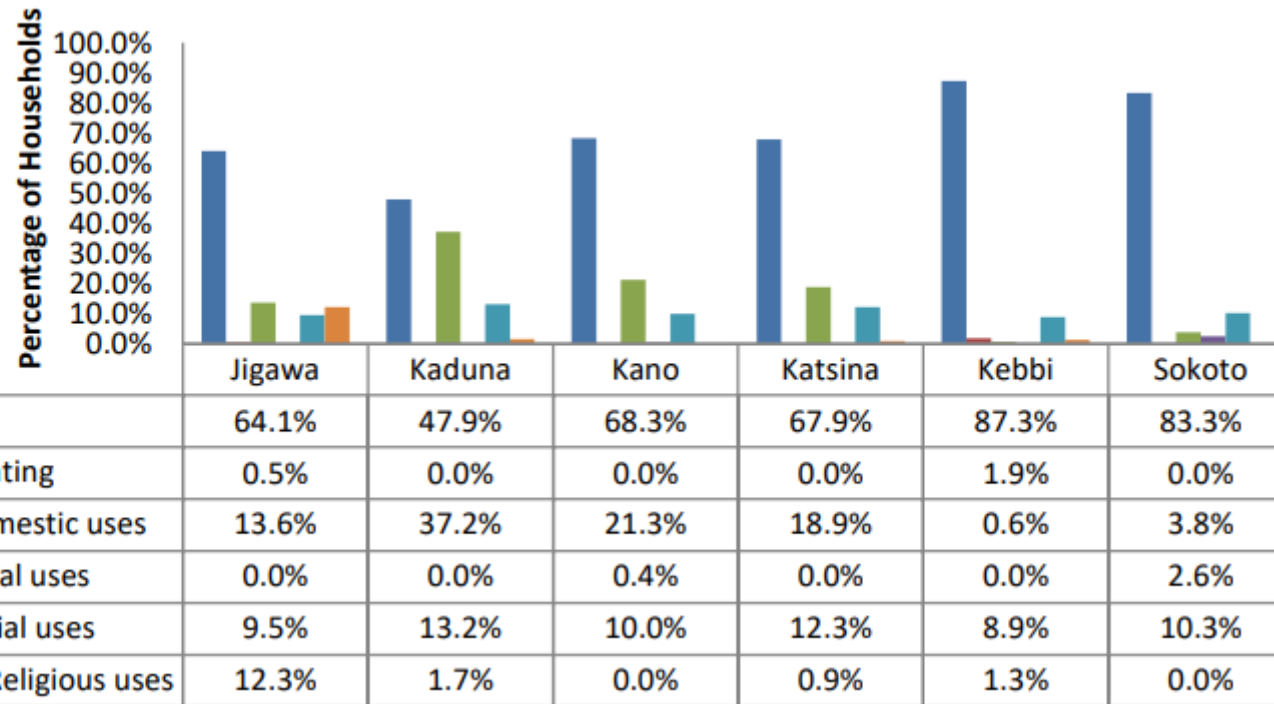


ZONE	STATUS
North West	Surveyed Completed, Report Submitted
South East	50% surveyed,
South West	1 state surveyed, 5 states outstanding
North Central	1 state surveyed and Report submitted, 6 states outstanding
North East	No Survey
South South	No Survey



S/N	STATES	POPULATION (2017)	FUELWOOD CONSUMPTION PER CAPITA (kg/day)	DAILY FUELWOOD CONSUMPTION (tonnes)	CO <sub>2</sub> EMISSION (tCO <sub>2</sub> )
1.	Jigawa	5,828,163	1.197	6,980.24	11,475.51
2.	Kaduna	8,252,366	0.977	8,068.28	13,264.25
3.	Kano	13,076,892	0.977	12,785.20	21,018.86
4.	Katsina	7,831,319	1.136	8,900.83	14,632.96
5.	Kebbi	4,440,050	1.197	5,317.73	8,742.34
6.	Sokoto	4,998,090	1.124	5,619.60	9,238.62

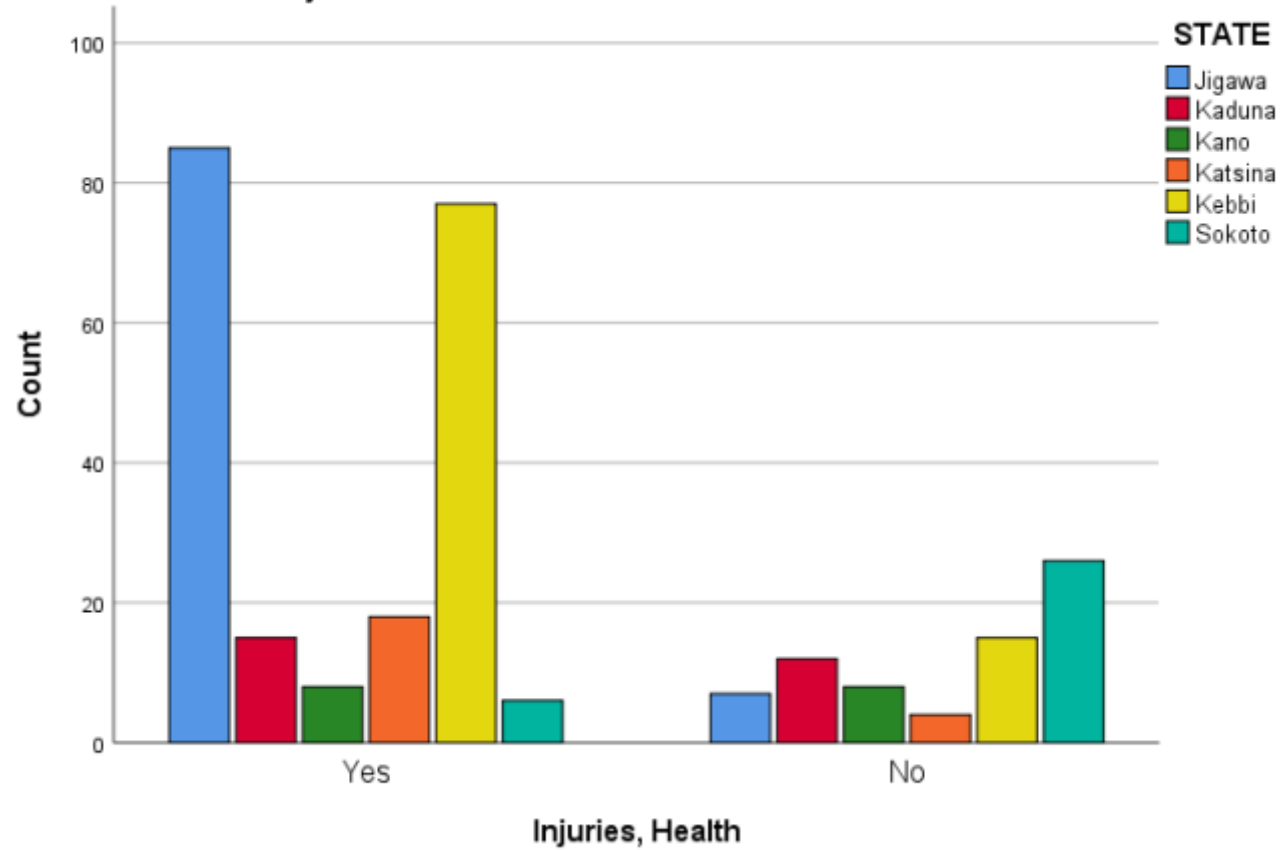
**Percentage of Fuelwood Consumption for Different Purposes in the North West Zone by State**



# Health



**Injuries and other Health Issues Associated with Fuelwood Collection**



# Despite Health Risks, Firewood Use Still Thrives In Nigerian Communities

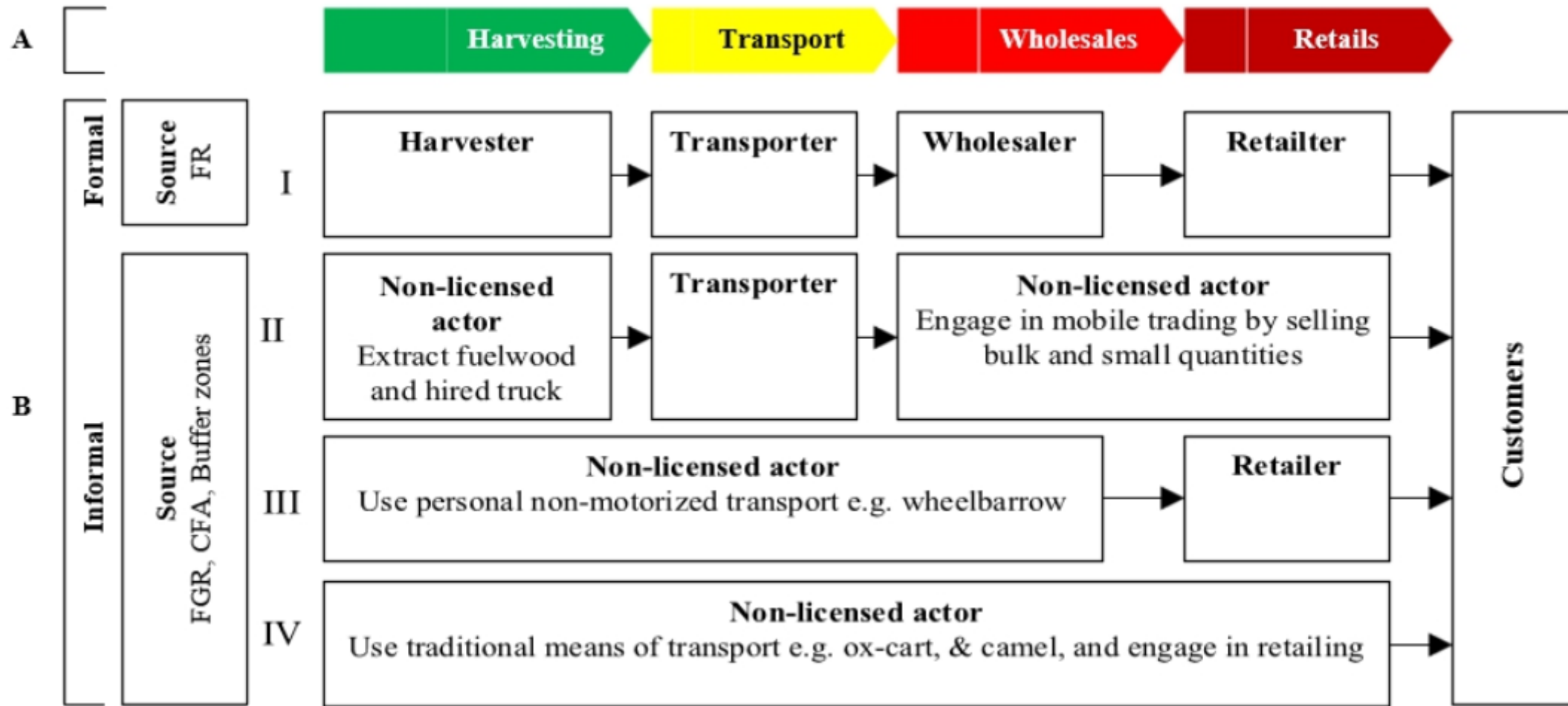


SIMILAR SIGNS OF WOMEN COOKING WITH FIREWOOD AND CHARCOAL

- CHEST PAIN
- TEARY EYES
- HEADACHE
- CONSTANT COUGH
- BACK PAIN

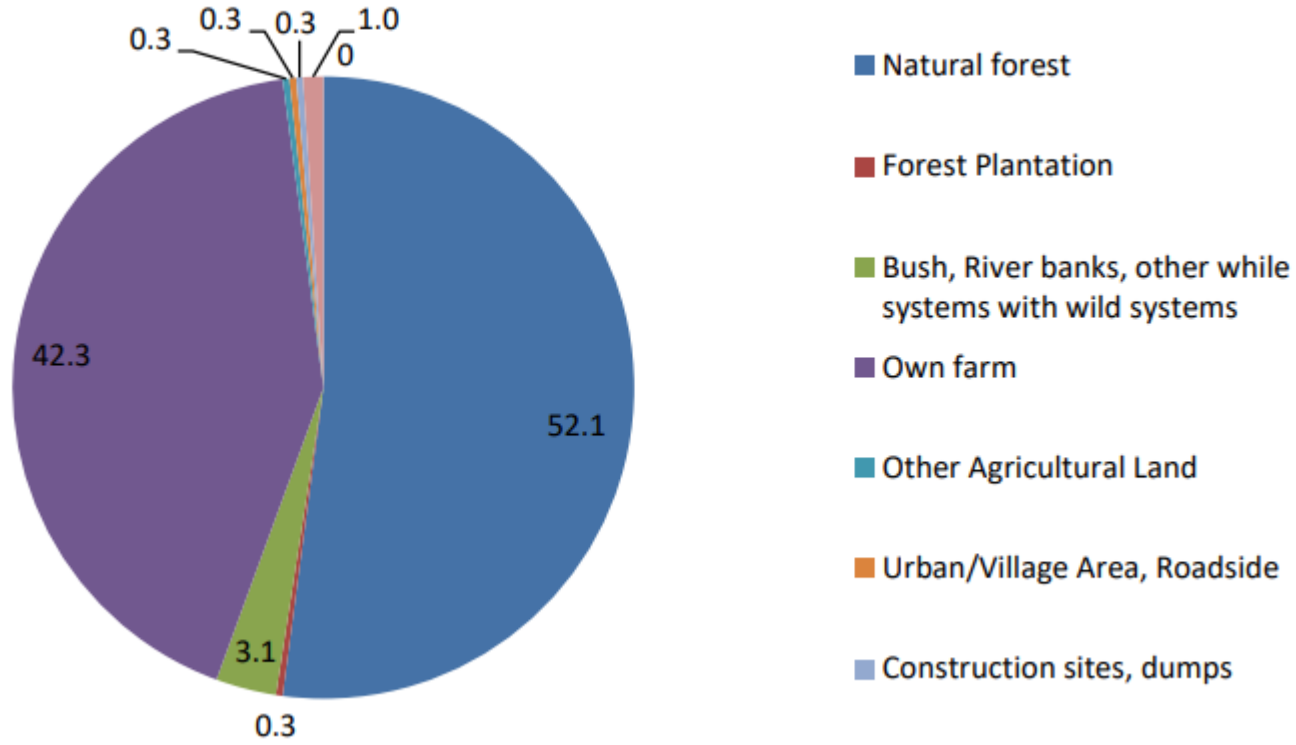


# Employment

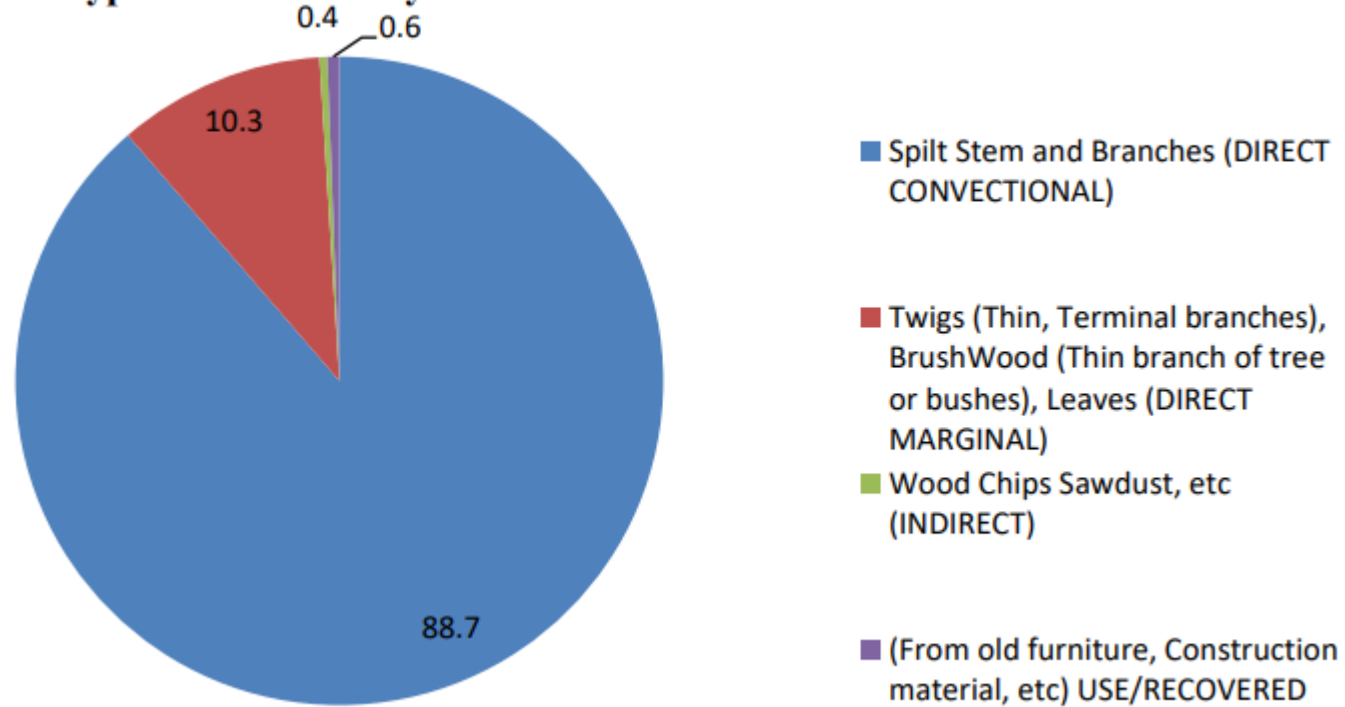


(A) Fuelwood generic chain; (B-I) Formal fuelwood supply chain; (B-II, B-III, & B-IV) Informal fuelwood supply chain; FR (forest reserve); FGR (federal grazing reserve); CFA(communal forest area).

**Location of Wood mainly Cut/Collected in the North West Zone**



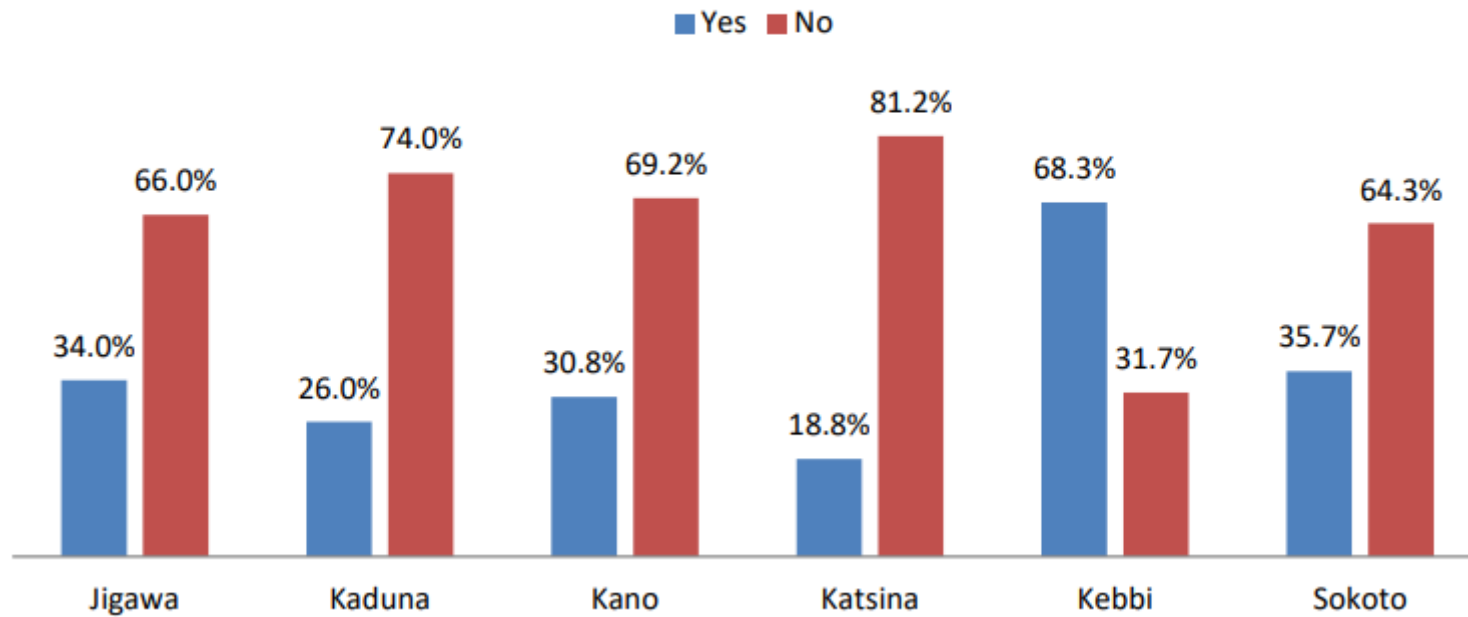
### Type of Wood mostly used as Fuel in the North West Zone



**Table 4.2.2 Monthly Fuelwood Purchased in the States**

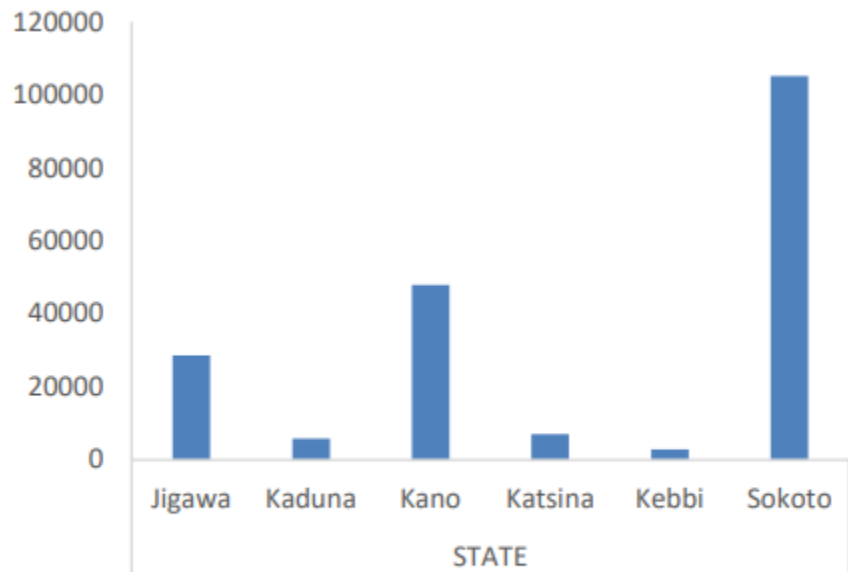
<b>Quantity</b>	<b>Jigawa</b>	<b>Kaduna</b>	<b>Kano</b>	<b>Katsina</b>	<b>Kebbi</b>	<b>Sokoto</b>	<b>Total</b>
0 - 100kg	0	10	14	28	13	10	75
101kg - 200kg	0	10	13	17	17	12	69
201kg - 300kg	8	4	23	20	14	11	80
301kg - 400kg	17	5	10	5	3	4	44
401kg - 500kg	19	4	5	7	4	2	41
501kg -600kg	9	2	14	17	3	4	49
601kg - 700kg	15	1	1	1	0	0	18
700kg - 800kg	8	2	4	6	5	7	32
801kg - 900kg	6	0	6	7	0	0	19
901kg - 1000kg	1	1	2	0	0	0	4
1001kg - 1100kg	3	0	1	1	0	0	5
1101kg - 1200kg	1	1	7	5	0	0	14
above 1200kg	7	5	18	6	3	0	39
<b>Total</b>	<b>94</b>	<b>45</b>	<b>118</b>	<b>120</b>	<b>62</b>	<b>50</b>	<b>489</b>
<b>Average Quantity Purchased (kg)</b>	<b>660</b>	<b>482</b>	<b>801</b>	<b>525</b>	<b>349</b>	<b>300</b>	

### Percentage of Households that Cut/Collect Fuelwood in the North West Zone by State





- **40 million** Nigerians are engaged directly in fuelwood collection and charcoal production,
- **530,000** full-time equivalent direct jobs for the citizens.
- **200,000** people – mostly also full-time – provided transport services for retail and wholesale trade in the fuelwood and charcoal production in the country.



■ Total Income derived by household from fuelwood sales in the last month Naira (Mean)

**Table 6.22: Fuelwood Sales Income by State**

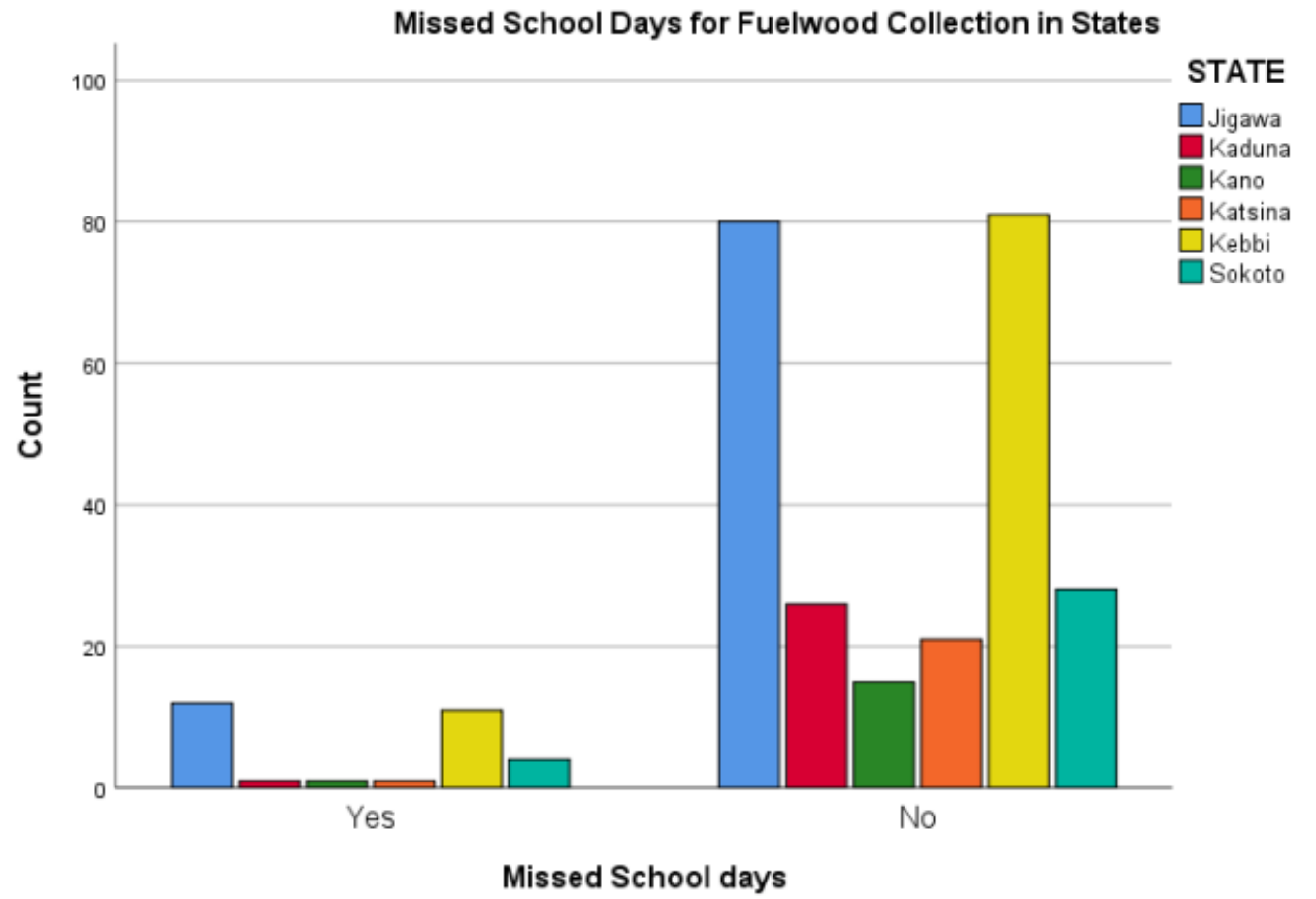
	Total Income derived from fuelwood sales (Mean)
<b>Jigawa</b>	28667
<b>Kaduna</b>	5857
<b>Kano</b>	47880
<b>Katsina</b>	7000
<b>Kebbi</b>	2866
<b>Sokoto</b>	105125

**GDP**

Quarterly Household Spendings (Billion Naira)	Q1 2020	Q2 2020	Q3 2020	Q4 2020	Total 2020
Electricity	144.13	123.45	141.90	147.55	557.03 <b>1.27</b>
Cooking Gas	182.91	71.80	82.11	84.21	421.03 <b>0.96</b>
Fuel for household use	236.72	241.76	246.56	263.78	988.82 <b>2.25</b>
Fuel used for transport	288.83	253.88	310.70	324.19	1,177.61 <b>2.67</b>
firewood and charcoal	191.47	175.41	187.67	203.53	758.08 <b>1.72</b>

The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the frame, creating a modern, layered effect. The rest of the background is plain white.

**Education**



# Environment

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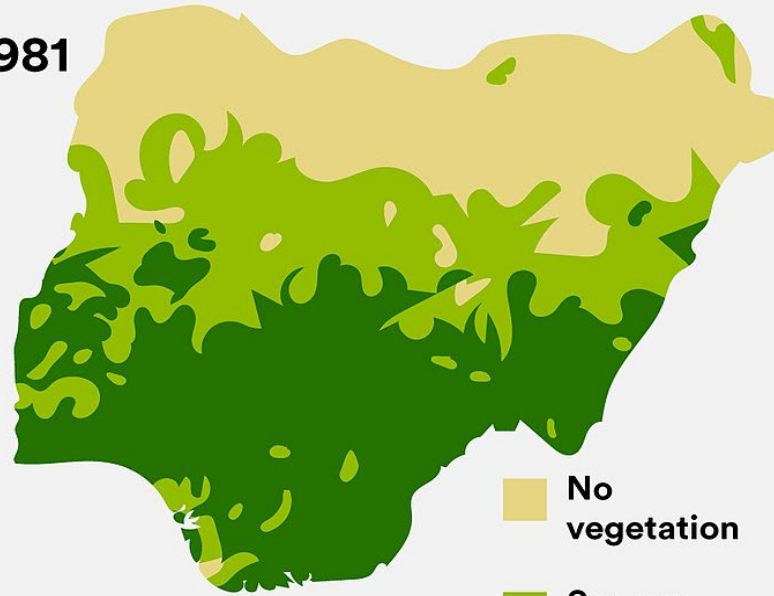
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<b>Energy Source</b>	<b>Jigawa, %</b>	<b>Kaduna, %</b>	<b>Kano, %</b>	<b>Katsina, %</b>	<b>Kebbi, %</b>	<b>Sokoto, %</b>
Electricity National Grid	0.00	2.60	4.30	7.70	2.70	1.10
Electricity, Generator	0.00	0.00	0.00	0.00	0.50	0.00
LPG (Cylinder)	0.70	12.30	10.20	7.70	3.20	1.10
Piped gas	0.00	0.00	0.00	1.70	0.00	0.00
Kerosene	0.70	7.00	6.60	6.90	2.70	1.10
Charcoal	2.70	25.40	22.80	7.30	2.70	22.80
Coal	0.00	0.00	0.00	0.00	0.50	0.00
Firewood	90.0	52.60	46.20	68.70	87.60	69.60
Crop Residues/Grass/Straw/Shrubs	5.30	0.00	9.60	0.00	0.00	4.30
Animal Dungs	0.70	0.00	0.00	0.00	0.00	0.00
Sawdust	0.00	0.00	0.30	0.00	0.00	0.00

<b>Conversion Technologies</b>	<b>Jigawa</b>	<b>Kaduna</b>	<b>Kano</b>	<b>Katsina</b>	<b>Kebbi</b>	<b>Sokoto</b>	<b>Total</b>
Induction stove	0	0	1	0	0	0	1
Electric stove/Cooker	0	3	12	17	5	1	38
Solar thermal stove/Cooker	0	0	1	1	0	1	3
Gas stove/Cooker	1	14	26	23	6	1	71
Liquid fuel (Kerosene) stove	1	8	20	17	5	2	53
Manufactured solid fuel stove	5	0	2	4	1	1	13
Locally fabricated Char, Stove	4	29	64	15	7	19	138
Sawdust Stove	0	1	3	0	0	0	4
Three-stone fire (Open Fire)	137	57	146	114	113	50	617
One directional open fire	3	3	24	42	49	17	138
Other (specify)	0	0	5	0	0	0	5
<b>Total</b>	<b>151</b>	<b>115</b>	<b>304</b>	<b>233</b>	<b>186</b>	<b>92</b>	<b>1081</b>

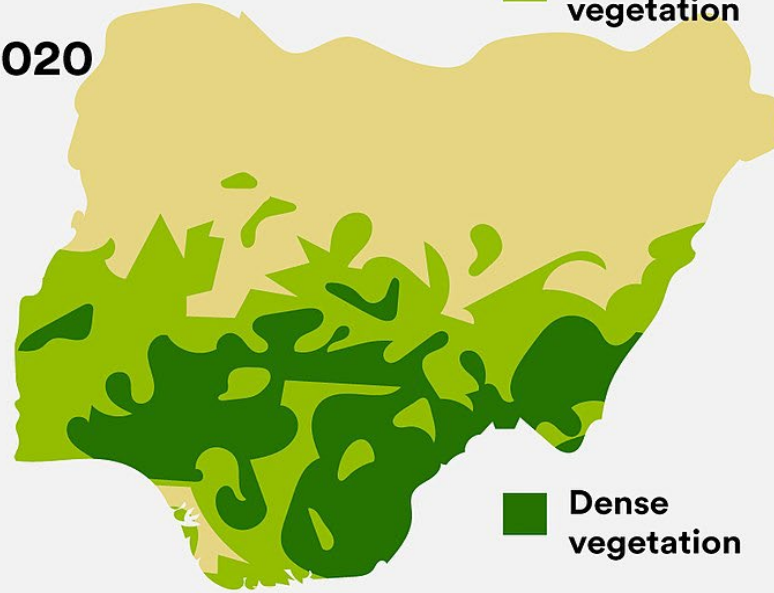
**1981**



**No  
vegetation**

**Sparse  
vegetation**

**2020**



**Dense  
vegetation**

The Woodfuel Supplementary Module (WSM) of the FAO was tested in a survey conducted in the North West Zone. The Module was found convenient and suitable for the household survey. The Module was also used for the survey of part of the South East in 2022 and South West zone in 2023.

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# AKPE

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