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1) There are 57468 observations in this dataframe.

2) The fub_collby variable describes whom the product was collected by. If fub_collby = 5, that means that the product is collected only/mainly by boys (<15 years) in the household.

Table 1, Meaning of different fub_collby values.

Fub_collby Value	Respective Meaning
1	Product is collected only/mainly by wife and adult female household members
2	Product is collected by both adult males and adult females participate
3	Product is collected only/mainly by the husband and adult male household members
4	Product is collected only/mainly by girls (<15 years)
5	Product is collected by only/mainly by boys (<15 years)
6	Product is collected only/mainly by children (<15 years), and boys and girls participate about equally
7	Product is collected by all members of household participate equally
8	None of the above alternatives
9	Product is collected by a person employed by and living with the household

3) The top three households are located in Zambia (ghousecodes **3081**091 and **3081**077), and Cambodia (**2081**138).

4) "fup_pdt" represents Forest Product. For Zambia, the fup_pdt is 1, which is timber. For Cambodia it is 2, which is poles.

5) The wild coffee harvesting households are in Uganda.

6) fup_collby means collected by whom. In relation to the wild coffee, this is 3, which means collection occurred only/mainly by the husband and adult male household members.

7) The most collected forest product in Cameroon was Fuelwood/Firewood (code 3).

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8)

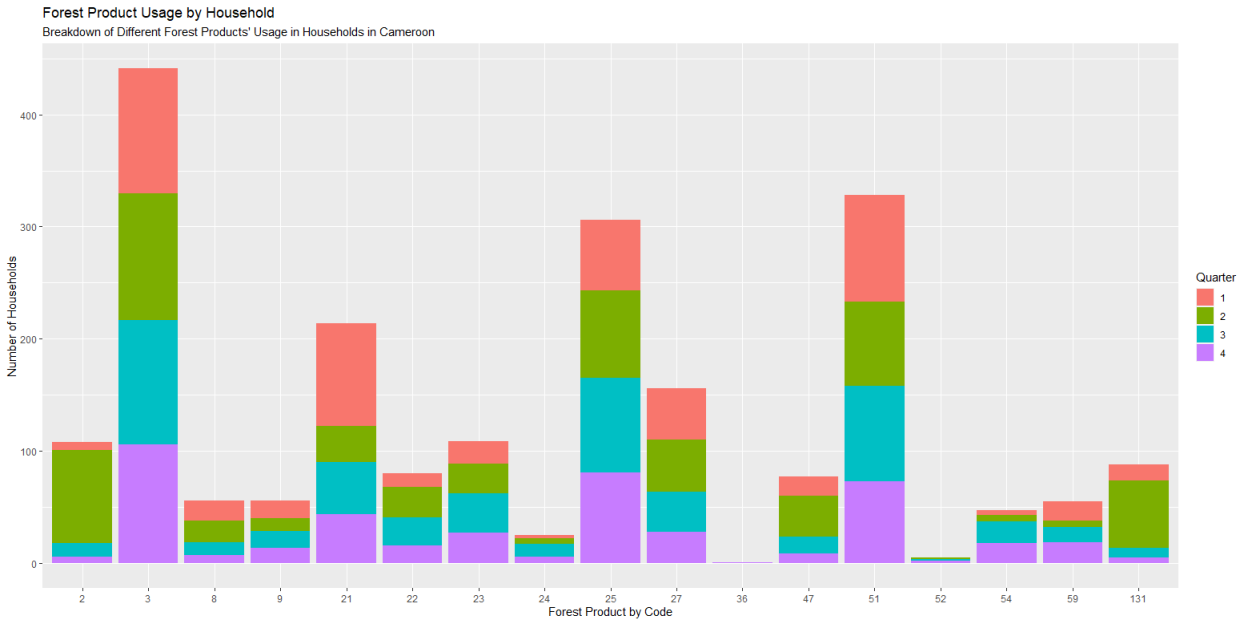

Figure 1, Forest Product Usage by Household in Cameroon. The x-axis shows forest products by their respective code, whereas the y-axis shows the number of households. The legend describes the quarter under which the data was collected.

Product 3 is fuelwood/firewood, and product 21 is wild fruits. Fuelwood/firewood shows greater collection than wild fruits in all four quarters. Fuelwood/firewood possesses practically equal quarters, with the lowest collection being quarter 4, only slightly below the rest. Wild fruits, on the other hand, possesses the greatest level of collection in Quarter 1, followed by Quarter 4, Quarter 3, and Quarter 2. The quarters are much less balanced than those of fuelwood/firewood. This is likely because fuelwood/firewood is used and needed all year around and is often always available. Wild fruits, on the other hand, are often seasonal, and the diet of the locals vary, and likely shift to other means of nutrition when fruits are not easily accessible. This explains why fuelwood/firewood has very balanced quarters of product use, and wild fruits much less balanced.

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9)

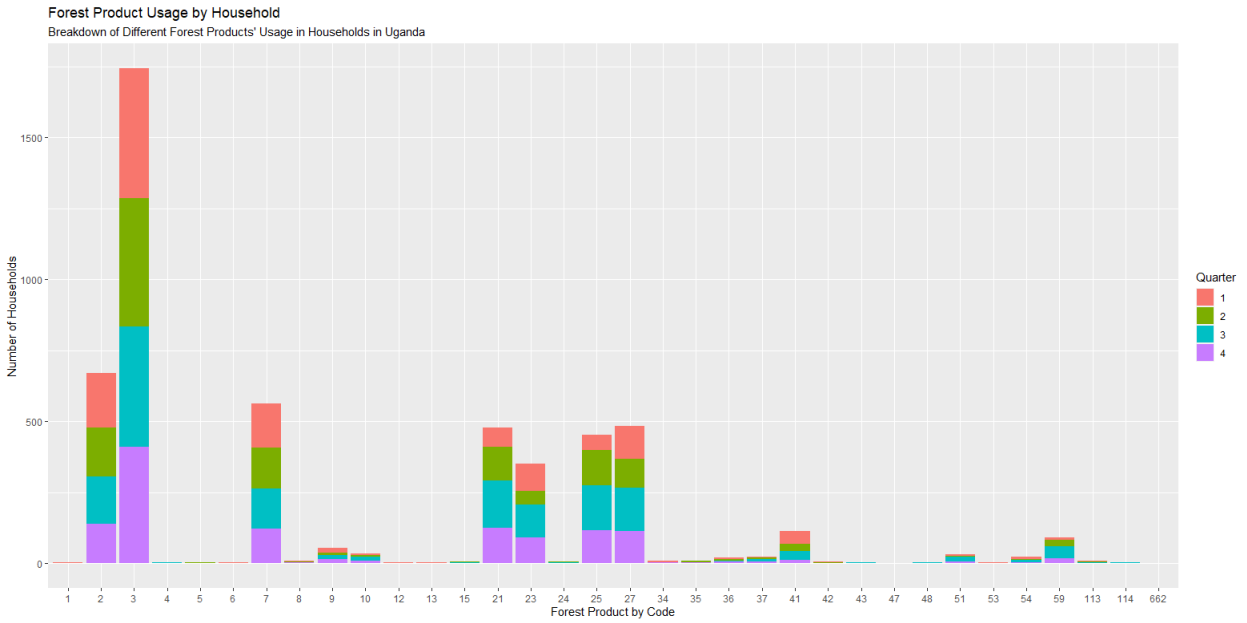

Figure 2, Forest Product Usage by Household in Uganda. The x-axis shows forest products by their respective code, whereas the y-axis shows the number of households. The legend describes the quarter under which the data was collected.

10) The full t-test can be found in the appendix. The mean net income from forest products in Cameroon (country code 301) was 6175.895. The mean net income from forest products in Uganda (country code 307) was 6054.355. The resulting p-value was 0.5569. This leads to the conclusion that the difference between the means of the net income from forest products in Cameroon and Uganda are not statistically significant.

Table 2, Welch Two Sample t-test for comparing means of net income from forest products in Cameroon and Uganda. The alternate hypothesis was that true difference in means between group 301 (Cameroon) and group 307 (Uganda) is not equal to 0.

Welch Two Sample t-test
t = 0.58749, df = 4518.6, p-value = 0.5569
95% Confidence Interval: [-284.0467, 527.1264]
Sample Estimates:
Mean in group 301 (Cameroon): 6175.895
Mean in group 307 (Uganda): 6054.355

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11) Product 25, wild vegetables, was collected mostly by fub_collby code 1 (only/mainly by wife and adult female household members). Product 51, game meat - mammals, was collected mostly by code 3 (only/mainly by the husband and adult male household members).

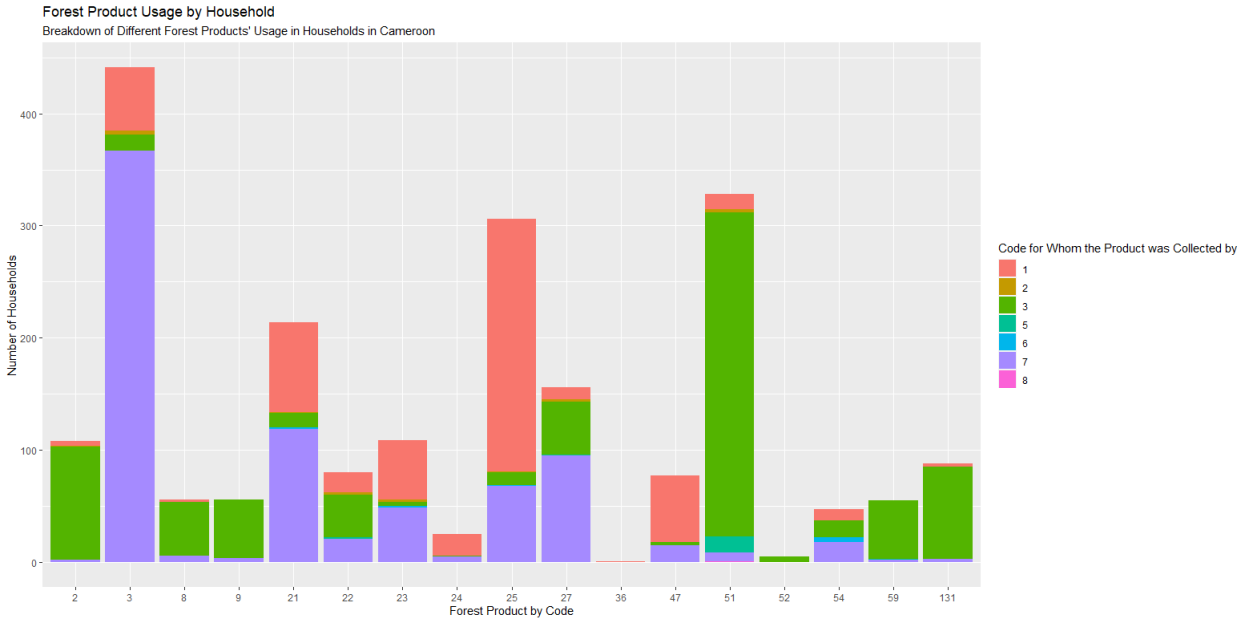

Figure 3, Cameroon Forest Product Usage by Household. This bar plot shows the frequency of forest products collected by households, also showing who collected the forest product. The x-axis shows forest product by code, whereas the y-axis shows number of households. The legend shows the code for whom the product was collected by.

12) Product 25 is wild vegetables, and product 51 is game meat – mammals. The full t-test can be found in the appendix. The calculated mean net income resulting from wild vegetables was 1455.882. The calculated mean net income resulting from game meat – mammals was 9284.402. With a resulting p-value of < 2.2e-16, the means are statistically significant. The statistically significant p-value shows that the difference in the two means is unlikely to be due to random variation. The fact that one acquires more money from game meat than from wild vegetables (based on the means calculated: 1455.882 for wild vegetables, and 9284.402 for game meat) shows that it is more efficient to spend your time hunting (you acquire more money from it) than collecting fruits. One plausible explanation for this is that game meat is more readily available than wild vegetables. Similarly to the wild fruits mentioned in question 8, wild vegetables are also seasonal, and therefore may be considered less reliable than hunting for game meat. The vegetables likely take longer to find or may be further away than animals. Moreover, an animal is likely to be more effective at feeding individuals in comparison to wild vegetables on their own, further explaining the differences in value and resulting profit observed.

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Table 3, Welch Two Sample t-test for comparing means of net income from wild vegetables (product 25) and game meat – mammals (product 51) in Cameroon. The alternate hypothesis was that true difference in means between group 25 and group 51 is not equal to 0.

Welch Two Sample t-test
t = -25.686, df = 367.04, p-value = < 2.2e-16
95% Confidence Interval: [-8427.859, -7229.181]
Sample Estimates:
Mean in group 25 (Wild Vegetables): 1455.882
Mean in group 51 (Game Meat – Mammals): 9284.402

13) There is a general trend present. It shows decreases in forest dependence with increases in income decile ranking. This shows the possibility of a correlation between the two factors. However, statistical analyses would be required to prove the presence of a correlation between the two factors.

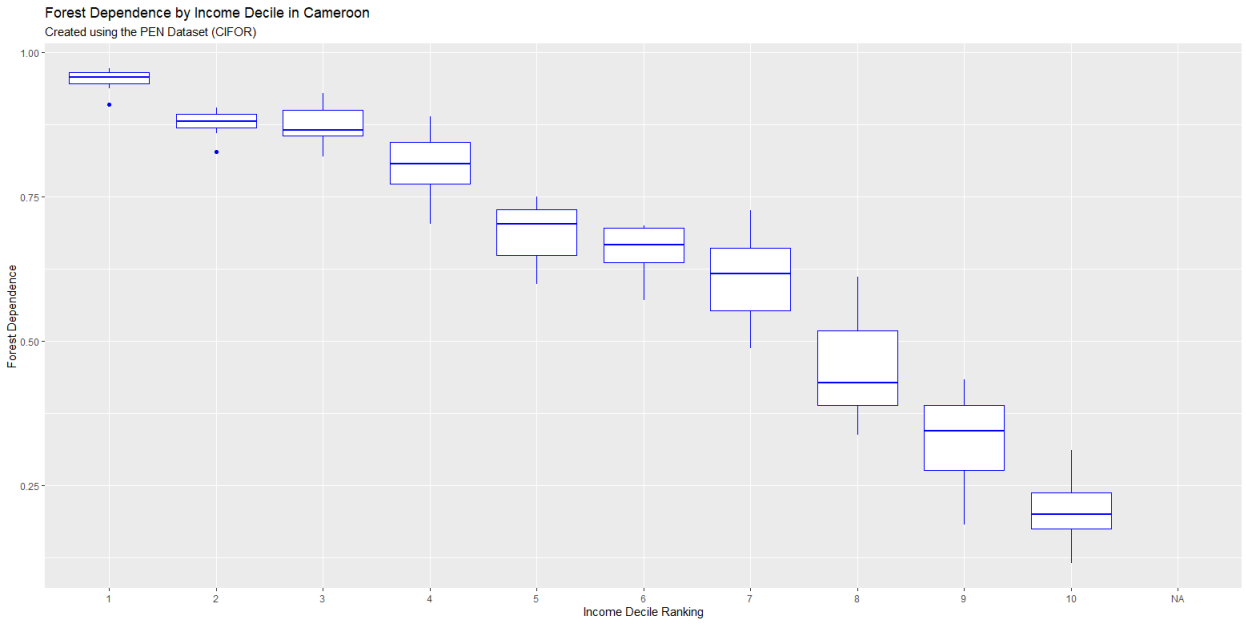

Figure 4, Box Plot of Forest Dependence by Income Decile in Cameroon. The x-axis shows Income Decile Ranking whilst the y-axis shows Forest Dependence.

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14) Figure 5 displays the data showing different ranges of the calculated forest dependence value (see figure 5 legend). Figure 6 has categorized the different countries in terms of ranks of dependence from 1 to 11. Figure 6 is the better way to display mean forest dependence, as one can easily identify the countries and understand the order. Figure 5, on the other hand, displays numbers which are not as easily interpreted by a general audience (the results from a calculation of dependency). Furthermore, Figure 6 shows a greater level of information, categorizing 11 countries, whereas the legend for Figure 5 only has five options and has combined multiple countries into the same category, making their level of dependence indistinguishable from one another.

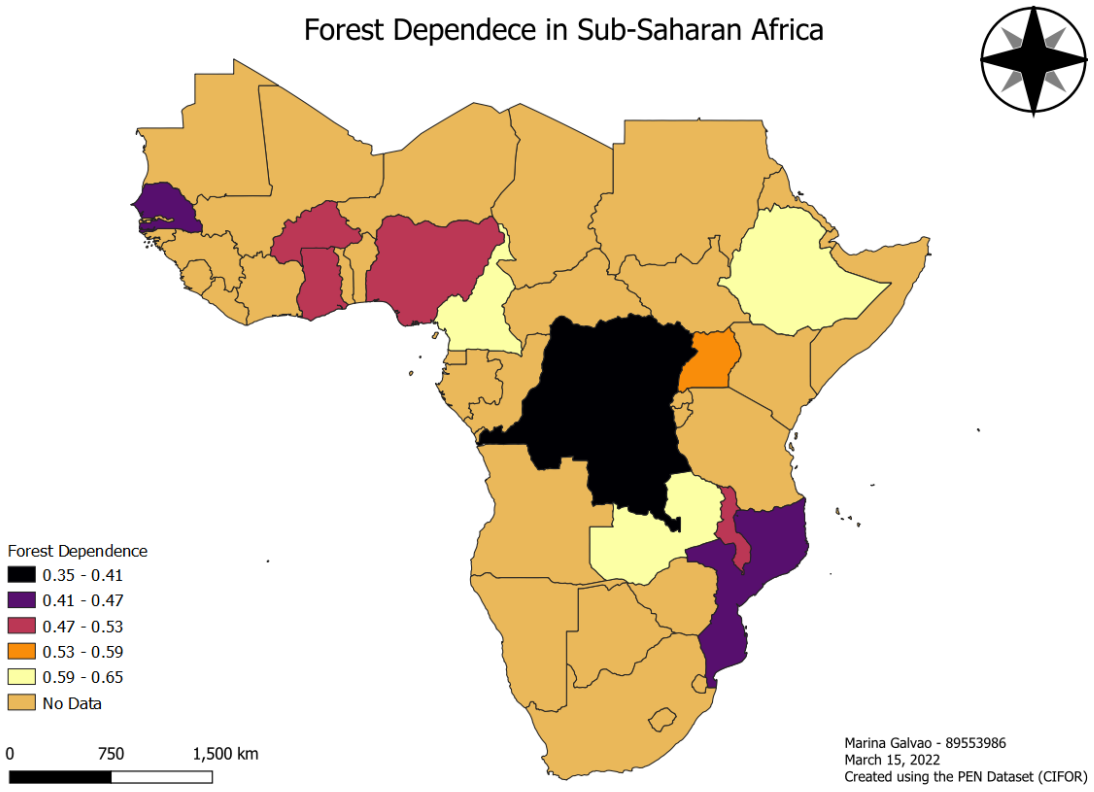

Figure 4, Forest Dependence in Sub-Saharan Africa based on the PEN Dataset (CIFOR). The data is displayed by country and graduated color ramp shows different regions' level of dependence. Figure completed with Ben Carbell.

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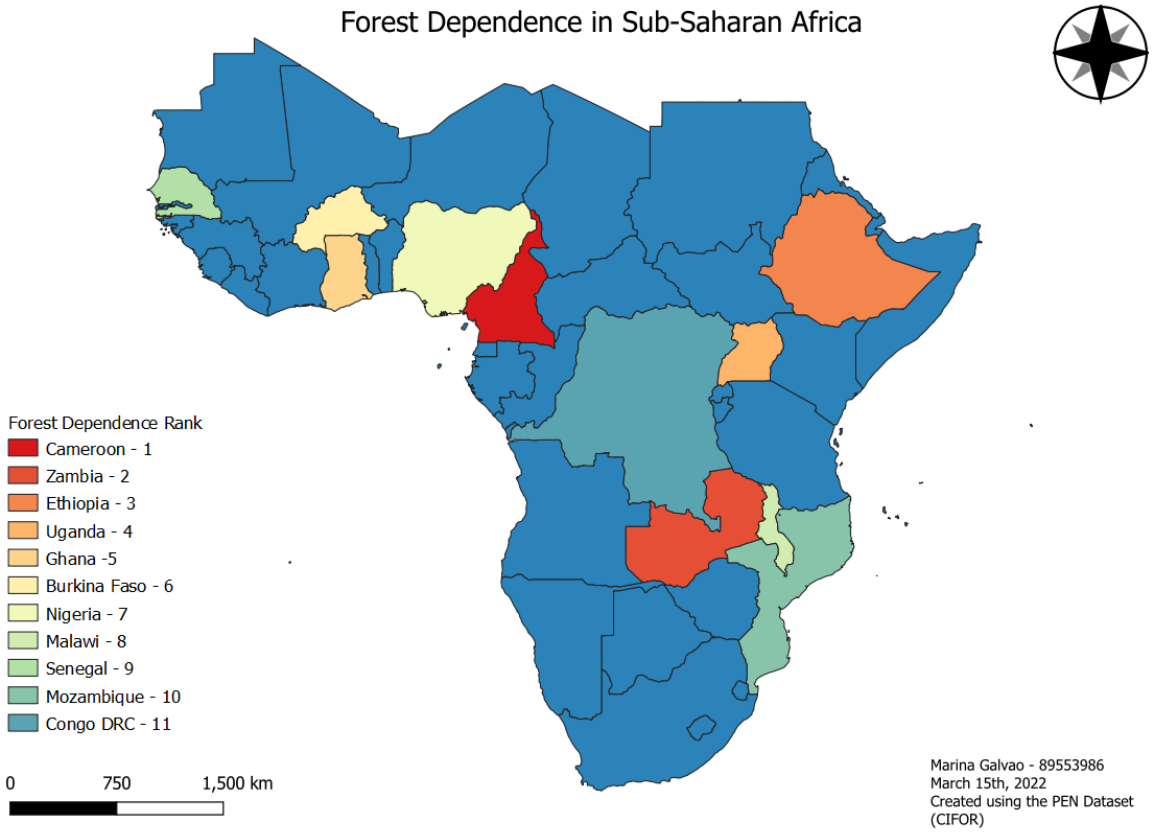

Figure 6, Forest Dependence in Sub-Saharan Africa based on the PEN Dataset (CIFOR). The data shows different country's rank (out of 11) in relation to respective forest dependence findings. Figure completed with Ben Carbell.

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References

PEN, 2016, "CIFOR's Poverty and Environment Network (PEN) global dataset", https://doi.org/10.17528/CIFOR/DATA.00021, Center for International Forestry Research (CIFOR), V2

Rowland, Dominic; Ickowitz, Amy; Powell, Bronwen; Nasi, Robert; Sunderland, Terry (2017). "Forest foods and healthy diets: quantifying the contributions". *Environmental Conservation*. **44**: 102–114.

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Appendix

Question 10:

Welch Two Sample t-test

data: fup_nety by country_code
t = 0.58749, df = 4518.6, p-value = 0.5569
alternative hypothesis: true difference in means between group 301 and group 307 is not equal to 0
95 percent confidence interval:
-284.0467 527.1264
sample estimates:
mean in group 301 mean in group 307
6175.895 6054.355

Question 12:

Welch Two Sample t-test

data: fup_nety by fup_pdt
t = -25.686, df = 367.04, p-value < 2.2e-16
alternative hypothesis: true difference in means between group 25 and group 51 is not equal to 0
95 percent confidence interval:
-8427.859 -7229.181
sample estimates:
mean in group 25 mean in group 51
1455.882 9284.402