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Domestication of an underutilized tree species *Monodora myristica* (Gaertn.) Dunal: assessing agroforestry and socio-economic potential in Western Cameroon.

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Background

- In Sub-Saharan Africa, NTFPs play an important role in rural household’s livelihoods [1];
- African nutmeg: medicinal, spicy, culinary and nutritional properties [2] ;
- The harvesting of the species in agroforestry system is a source of income for local communities, but the availability of the species in these agroforestry systems has less been documented;

Aim of the study

- Assess the current potential of tree diversity in agroforestry systems as well as the socio-economic value derived from the sale of seeds.

Methodology

1-Data collection

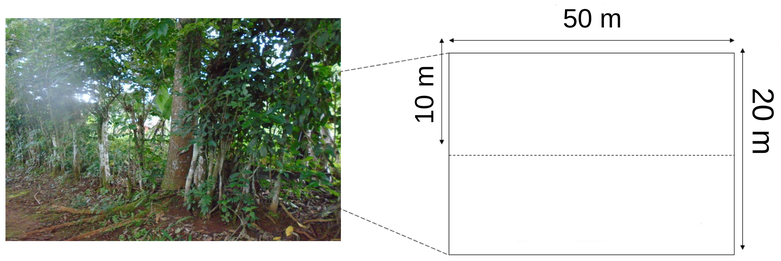

Figure 1: Experimental design used

Figure 2: Derived products of African nutmeg (fruits and seeds)

➢ Floristic inventories
- 5 sampling plots of 1000 m^2 (50mx20m) in each village;
- Areas: Bangoua and Batchingou in the Nde district (Western Cameroon);
- Inventories: trees with dbh≥10 cm

➢ Socio-economic surveys
- Households survey: 15 producers (Bangoua and Batchingou);
- Markets survey: 57 traders (Mfoudi and Mokolo) in Yaounde city;
- Semi-structure questionnaires

2-Data analysis

- Species diversity was calculated using Excel software;
- Analysis of market performance [4];

TR=PxQ

PM=VA-MC

VA=SP-PP

Where:
TR= Total revenue;
PM=Profit margin;

VA= Value Added;
SP= Sale Price
PP= Purchase Price

Results

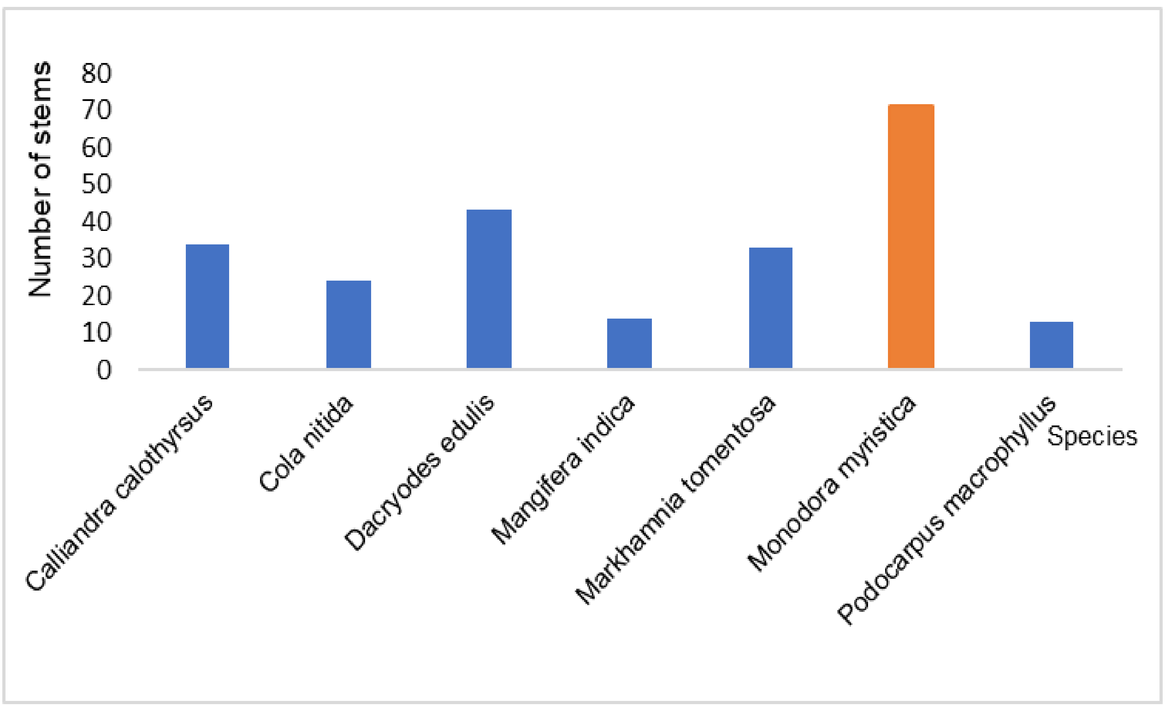

Figure 3: Species identified in the study area

- On a total area of 1 ha, a total of 314 species belonging respectively to 16 botanical families have been identified.
- According to their relative abundance, *M. myristica* (71 stems/ha) is the most represented species.

Table 1: Market performance of African nutmeg actors

Variables in Fcfa/15 kg bucket	Wholesalers n=6		Resellers n=33		Retailers n=18		Total n=	
Abundance period	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Quantity of seed (in bucket of 15 kg)	58	37.10	7	4.95	1	0.94	11	20.43
Purchase Price (PP)	12.83	0.75	16.60	0.93	19.55	1.46	17.14	2.28
Selling Price (SP)	17.00	1.09	48.93	12.74	42.33	12.35	43.49	15.24
Value Added (VA)	4.16	1.16	32.33	12.81	22.77	13.09	26.35	14.96
Marketing Cost (MC)	18.50	4.27	1.26	0.34	1.00	0.00	2.99	5.52
Profit Margin (PM)	-14.33	3.77	31.07	12.76	21.77	13.09	23.35	18.28
Scarcity period								
Purchase Price (PP)	12.83	0.75	43.51	6.74	44.44	6.34	40.57	11.42
Selling Price (SP)	42.33	4.08	95.63	24.09	78.66	21.86	84.66	27.43
Value Added (VA)	29.50	4.03	52.12	23.15	34.22	23.75	44.08	23.90
Marketing Cost (MC)	18.50	4.27	1.26	0.34	1.00	0.00	2.99	5.52
Profit Margin (PM)	11.00	6.54	50.86	23.03	33.22	5.59	41.09	25.52

Conclusion and perspectives

- The commercialization of African nutmeg seeds is a profitable activity for all actors involved in the value chain;
- Promote the growing of African nutmeg in agroforestry systems through its domestication could ensure the long-term availability and conservation of the resource.
- Local farmers could be empowered with marketing skills to improve their profit and livelihoods.

Acknowlegment
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References
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