

# Morphological diversity of *Allanblackia parviflora* in Ghana

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## Introduction

*Allanblackia parviflora* A. Chev. is a multipurpose tree indigenous to West Africa  
Under-utilized fruit tree currently being targeted for improvement towards domestication  
Seeds – the economically most valuable product; high nutritional values  
Seed oil being developed as new agri-business in Ghana, Nigeria, Cameroon and Tanzania  
Limited information on natural variation in tree phenotypic characteristics  
The objective was to evaluate morphological diversity across four provenances in Ghana

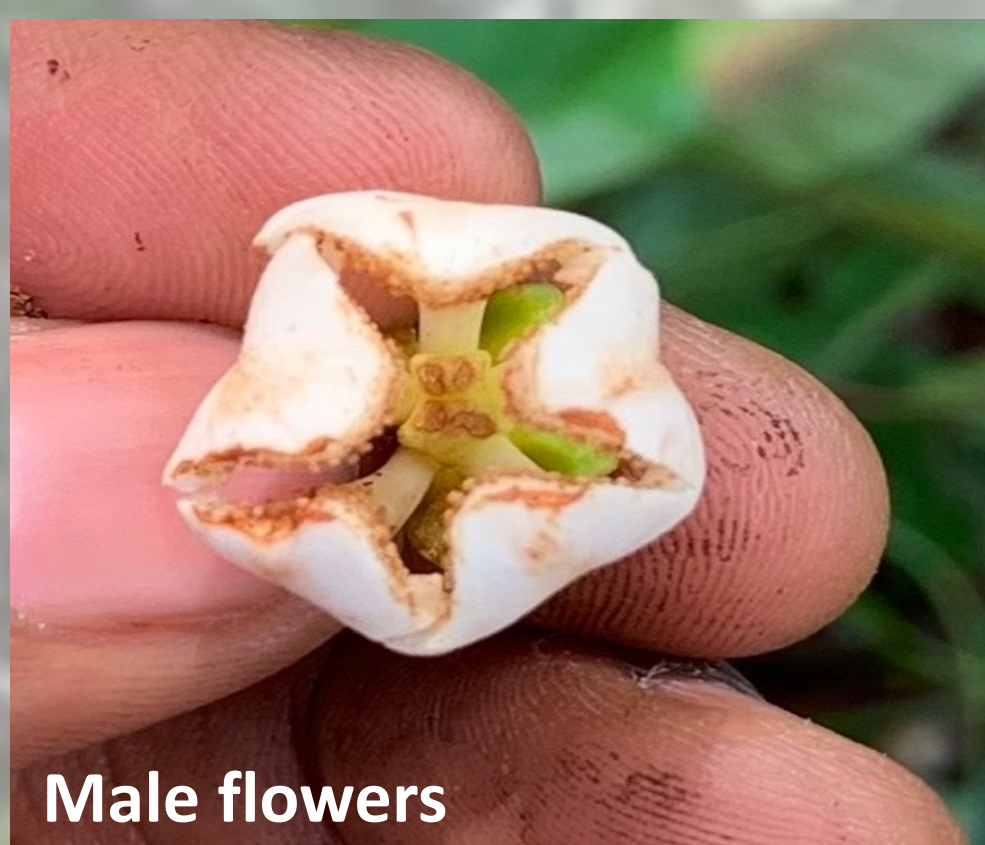
## Methodology

Sampling period: February – April 2021,  
Total of 104 trees sampled  
Measurements: tree height, trunk height,  
DBH, crown diameter  
10 fruits + 5 leaves per tree evaluated,  
all the seeds analyzed  
Basic morphotypes of fruits, seeds and  
leaves identified

Conducted across 4 provenances in Ghana;  
Wet Evergreen (WE), Moist Evergreen (ME),  
Moist Semi-deciduous South-East (MSSE),  
Moist Semi-deciduous North-West (MSNW)



Female flowers



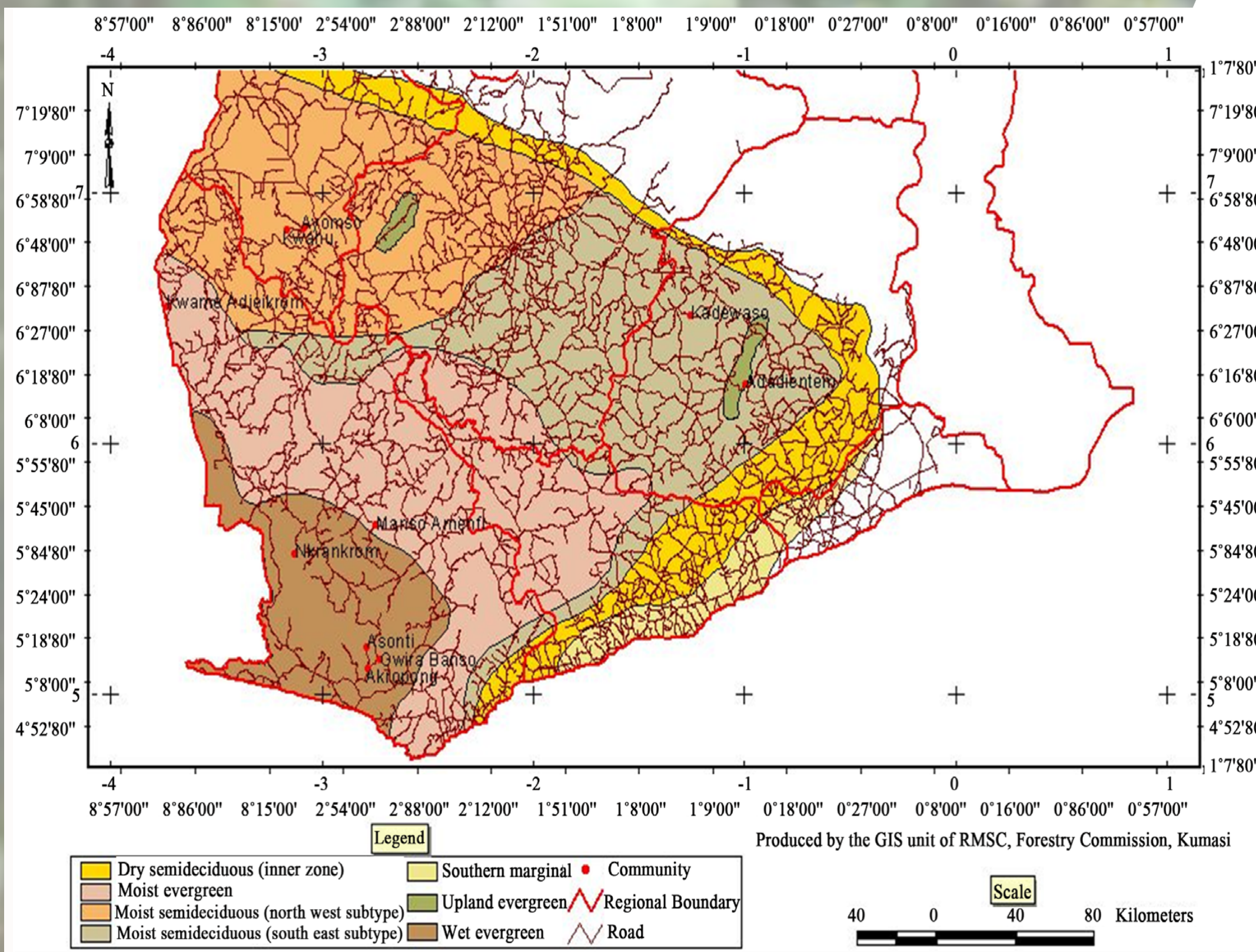
Male flowers



Seeds with different shapes and sizes



Fruits with different shapes and sizes



*Allanblackia* was found to be dioecious  
Colour of flowers ranges from white/  
grey to pink/ reddish

## Results

Provenance	WE	ME	MSSE	MSNW
Tree height (m)	18.35 ± 5.42	17.10 ± 4.93	17.09 ± 4.71	16.38 ± 4.77
Trunk height (m)	12.08 ± 4.53	11.38 ± 4.09	11.24 ± 3.77	11.00 ± 4.29
DBH (cm)	38.78 ± 13.01	34.72 ± 10.48	41.25 ± 17.43	34.08 ± 13.05
Crown diameter (m)	5.53 ± 2.09	6.34 ± 2.27	3.86 ± 1.91	5.21 ± 2.20
Leaf blade length (cm)	18.75 ± 2.19	20.10 ± 3.03	20.55 ± 2.27	19.01 ± 2.20
Leaf blade width (cm)	6.24 ± 0.90	6.81 ± 0.97	6.73 ± 0.92	6.52 ± 0.87
Fruit weight (g)	745.47 ± 109.77	820.75 ± 416.26	979.85 ± 552.76	1249.80 ± 244.80
Fruit lenght (cm)	19.27 ± 1.47	21.17 ± 1.45	23.66 ± 5.11	25.67 ± 3.81
Fruit width (cm)	9.27 ± 0.72	8.73 ± 1.97	9.70 ± 1.17	10.00 ± 1.54
Seed weight (g)	6.94 ± 1.42	7.29 ± 1.32	6.97 ± 1.55	7.68 ± 2.51
Seed length (cm)	3.20 ± 0.56	3.28 ± 0.18	3.42 ± 0.59	3.13 ± 0.47
Seed width (cm)	1.98 ± 0.29	2.28 ± 0.16	2.17 ± 0.37	2.21 ± 0.22
No. of seeds per fruit	16.76 ± 4.31	13.62 ± 5.79	14.82 ± 6.09	24.68 ± 6.15

## Conclusions

No clear morphological differences in fruit size and shape observed among different populations  
However, observed variations occurred both within and among different populations  
Variations could have genetic basis that may be reflected in molecular DNA analysis currently in progress  
Selection and cloning of trees with large fruits could lead to higher yield of seeds for oil production