

NTPF DOMESTICATION IN AGROFORESTRY SYSTEMS

for sustainable multifunctional landscapes at Lake Bosumtwi Biosphere Reserve, Ghana

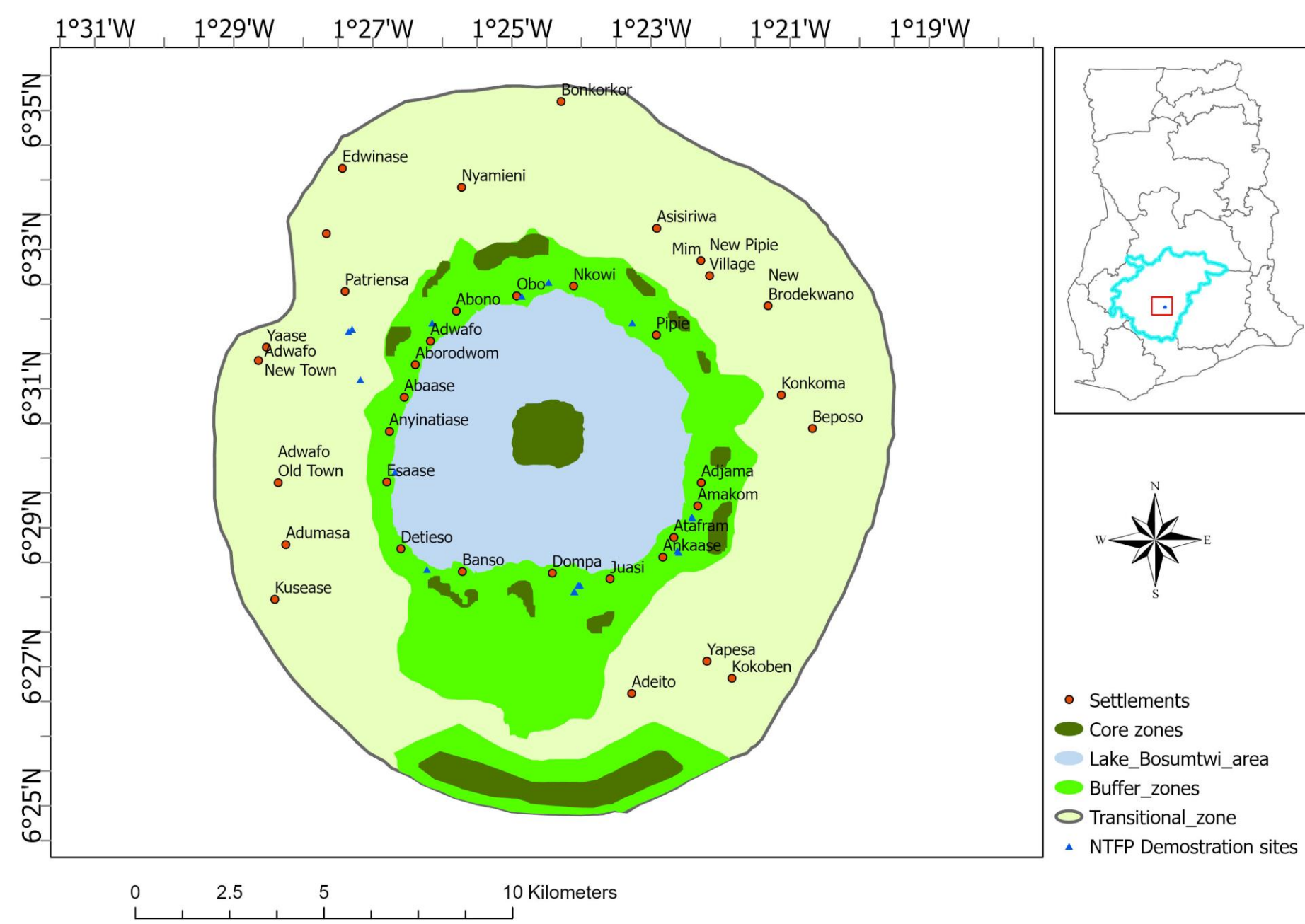


Figure 1: Map of Lake Bosumtwi Biosphere Reserve with zonation and location of NTPF demonstration plots

CONTEXT & PROJECT OBJECTIVE

Context:

- Lake Bosumtwi Biosphere Reserve (LBBR)** in Ghana (see fig. 1) is a mosaic landscape covering almost 29,000 ha in Ashanti region that is in need of higher tree-cover and diversity for increased ecological resilience and income diversification for local farmers

Project objective:

- Exploring and demonstrating **diverse and locally adapted agroforestry options that integrate non-timber forest products (NTPFs)**
- Options are based on **local knowledge & needs** and have **high potential for value chain development**
 - Suitable species for integration in LBBR production systems** are identified through mixed methods approach (see flow chart on the right)
 - On-farm demonstration plots** for NTPF domestication are established together with **local farmers**

PROJECT PROCESS

- Interviews**
- Interviews and focus group discussions with farmers on NTPF & shade tree preferences and agroforestry techniques

- Inventory**
- Inventory of plants in closed forest, open forest/fallow, arable farms, cocoa farms

- Gender and tenure assessment**
- Assessment of role of NTPF use for women, access to resources & land, marketing

- Excursion with farmers to other NTPF demonstration plots**
- Capitalizing on existing agroforestry experiences, observations and discussions with farmers

- Additional market studies**
- Which NTPFs are currently demanded and of value in markets?
 - Which packaged products containing NTPFs are available in supermarkets?

- Exchange & innovation platform**
- Way forward: further adaptation of the system to the local social-ecological context
 - Monitoring of demonstration plots

Ongoing / future activities

PRELIMINARY RESULTS

Table 1: Selected species for demonstration plots

Species planted	Use category	Trait preferred by farmers / factor for adoption	Conservation status	Priority*
Shade tree species				
<i>Triplochiton scleroxylon</i>	Timber, vegetable, medicinal, fungi and larvae production	Demand for product, multiple use options	Least Concern	1
<i>Terminalia superba</i>	Medicinal, dye, timber	Fast growth	Least Concern	2
<i>Khaya grandifoliola</i>	Medicinal, timber	Income generation potential, Demand for product	Vulnerable	3
<i>Milicia excelsa</i>	Medicinal, timber	Soil improvement, Income generation potential, Demand for product	Near Threatened	4
<i>Tieghemella heckelii</i>	Medicinal, timber, oil	Demand for product, Income generation potential	Endangered	5
<i>Terminalia ivorensis</i>	Medicinal, timber	Fast growth	Vulnerable	6
<i>Pericopsis elata</i>	Medicinal, timber	Income generation potential, Demand for product, Soil improvement	Endangered	Not mentioned
NTPF species				
<i>Tetrapleura tetraptera</i>	Spice, fruit, medicinal	Income generation potential, Demand for product	Least Concern	A
<i>Aframomum melegueta</i>	Spice, medicinal, fruit	Income generation potential, Demand for product, Ease of growing	Data Deficient	C
<i>Piper guineense</i>	Spice, medicinal	Income generation potential, Demand for product	Least Concern	D

*Prioritization distinguished between shade trees (1-42) and NTPFs (A-E)

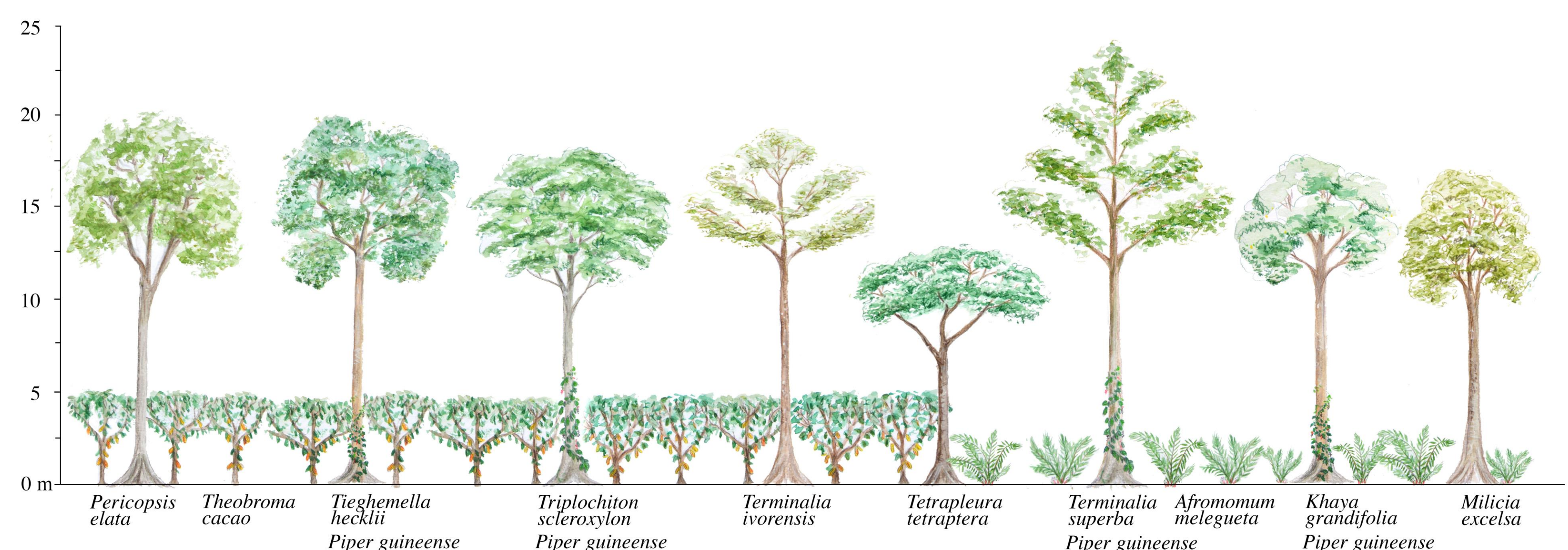


Figure 4: Possible agroforestry systems with NTPFs for Lake Bosumtwi BR based on prioritized species approx. 10 years after planting. Cocoa and Aframomum melegueta are planted separately to avoid interference. Image by Lena Heberlein

WAY FORWARD

- Workshops and exchanges with farmers to **capture lessons learnt from planting and integration**
 - Further studies on economic values and **market potential** of species, exploring also possible **future NTPF-based products**
 - May be necessary to broaden the scope from **NTPFs to agroforestry tree products (AFTPs)** :
- Allows to capture **the full range of preferred species** (including fruit trees preferred by women), while still creating **diverse production systems preserving locally used biodiversity, enhancing the landscape matrix and meeting livelihood needs**

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