Native Plants of Guinea-Bissau

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Introduction

Guinea-Bissau, nestled on the West African coast between Senegal and the Republic of Guinea, is a land of remarkable ecological diversity and natural beauty. Despite its relatively small size, the country hosts a mosaic of landscapes—from tidal mangrove swamps lining the Atlantic shore, to palm-studded transitional zones and the rolling savanna plains toward the east. The Bijagós Archipelago, off the mainland, adds further intrigue with its unique array of forest and wetland habitats. This rich environmental heterogeneity supports a vibrant array of native plant life, making Guinea-Bissau an important yet often overlooked center of botanical diversity in West Africa.

The flora of Guinea-Bissau is both abundant and distinctive, comprising over 1,500 vascular plant species spread across 157 families and almost 700 genera. While the vast majority of these plants are native, the country is home to only a handful of strictly endemic vascular species, reflecting the influences of its uniform climatic patterns and geographic connectivity with neighboring regions. Nonetheless, Guinea-Bissau's native plant species display notable adaptations to local conditions and contribute significantly to the ecological integrity of the country's diverse habitats.

Each vegetation type—from the extensive mangroves and lush palm groves to the open savannas and remnant primary forests—harbors distinct plant assemblages, showcasing the country's botanical wealth. Mangrove wetlands, for instance, support specialized flora adapted to saline, tidal regimes, while woodland and savanna areas are interspersed with trees vital for both wildlife and local communities. Emblematic species such as the majestic baobab, African rosewood, and kapok tree not only shape the physical landscape but also hold deep cultural and practical importance.

Traditional knowledge and cultural practices in Guinea-Bissau are closely linked to the use of native plants, particularly in the realm of medicine. Healers and communities draw on the country's botanical resources to treat a vast spectrum of ailments, employing an impressive array of native species for their therapeutic properties. This intersection of biodiversity and traditional knowledge forms a core element of Guinea-Bissau's natural heritage, offering vital resources for health and wellbeing, as well as inspiration for scientific research and conservation.

Yet, the native flora faces significant threats, primarily from habitat loss due to expanding agriculture, deforestation, and economic shifts such as the rapid growth of cashew cultivation. Protected areas and national parks safeguard critical habitats, but continued pressure on natural ecosystems underscores the urgency of comprehensive conservation efforts, informed research, and active community engagement.

This book, “Native Plants of Guinea-Bissau: A Guide to the Native Plants of Guinea-Bissau,” offers a comprehensive journey through the country’s botanical landscapes. It seeks to illuminate the diversity, adaptations, and significance of native plants, integrating scientific understanding with local knowledge and conservation perspectives. Whether you are a botanist, a conservationist, or simply a lover of nature, this guide is designed to deepen your appreciation for the rich plant heritage of Guinea-Bissau and to foster a renewed commitment to its preservation for generations to come.

CHAPTER ONE: The Stage is Set - Guinea-Bissau's Land and Sky

Guinea-Bissau occupies a modest corner of West Africa, a nation where the land gently meets the vast expanse of the Atlantic Ocean. Bordered by Senegal to the north and the Republic of Guinea to the south and east, its physical contours are predominantly shaped by its coastal location and position within the tropical zone. Covering an area slightly smaller than the state of Maryland, the country presents a landscape of subtle variations rather than dramatic geographical features, though these nuances profoundly influence its plant life.

The topography of Guinea-Bissau is characterized by its low elevation, giving it a largely flat appearance. The terrain begins at sea level along the Atlantic coast and gradually rises towards the interior. While generally low-lying, the eastern parts of the country feature slightly higher ground, hinting at the proximity of the Futa Djallon massif, a significant highland region in neighboring Guinea. The highest points in Guinea-Bissau are relatively modest, reaching around 262 to 300 meters above sea level in the northeast, near the border with Senegal and Guinea.

One of the most defining geographical features is the extensive network of low-lying coastal plains and estuaries. These areas are subject to the daily ebb and flow of tidal waters, which can penetrate remarkably far inland, sometimes up to 100 kilometers. This constant interaction between freshwater from rivers and saltwater from the ocean creates unique brackish environments, most famously the vast mangrove swamps that fringe the coastline and penetrate deep along riverbanks.

Moving eastward from the coast, the landscape transitions from these tidal plains. Here, the influence of saltwater diminishes, giving way to areas shaped by freshwater rivers and slightly higher ground. This transitional zone supports different types of vegetation, including significant palm forests and groves, which thrive in the less saline conditions. The meandering rivers themselves form vital arteries, carving through the landscape and supporting distinct riparian ecosystems along their banks.

Further into the interior, particularly in the eastern and southern regions, the terrain continues its gentle ascent. This part of the country is dominated by broader, more open landscapes. Here, woodlands and savannas become the prevalent vegetation types, interspersed with areas of wet grass savanna in lower-lying or seasonally flooded areas. The subtle undulations of the land in these parts, while not mountainous, create varied microhabitats that contribute to regional plant diversity.

Off the coast, adding another layer to Guinea-Bissau's geography, lies the Bijagós Archipelago. This collection of over 80 islands and islets is a world unto itself, shaped by the same coastal processes as the mainland but with its own distinct character. The islands feature a mix of mangroves along their shorelines, palm groves, and drier forested areas, influenced by their isolation and maritime climate. These islands represent a significant ecological zone, harbouring plant communities adapted to their specific insular conditions.

The interplay between the land's low elevation, the pervasive influence of tidal waters in the west, and the gradual rise to the savanna-dominated east creates a gradient of habitats across Guinea-Bissau. This geographical structure is the fundamental canvas upon which the country's diverse native flora has evolved and is distributed, with different plant communities occupying specific niches dictated by elevation, soil type, and water availability.

Complementing the physical geography is Guinea-Bissau's tropical climate, a key driver of its plant life. The country experiences a hot and humid climate year-round, largely governed by the movement of the Intertropical Convergence Zone (ITCZ). This atmospheric belt, where trade winds from the Northern and Southern hemispheres converge, dictates the distinct seasonality of the region, bringing with it predictable patterns of rainfall and sunshine.

The climate is divided into two primary seasons: a hot, rainy season and a hot, dry season. This clear division in weather patterns profoundly impacts the growth cycles and distribution of native plants. The timing and intensity of these seasons are critical factors shaping the ecological calendar of Guinea-Bissau.

The rainy season typically commences around May or June and lasts until October or November. This period is characterized by significant rainfall, brought by the African monsoon and prevailing southwesterly winds originating from the Atlantic Ocean. The rains are often heavy and can lead to widespread flooding, particularly in the low-lying coastal and central areas. August is frequently cited as the wettest month, receiving a substantial amount of precipitation.

While the entire country experiences the rainy season, the amount of rainfall varies geographically. The coastal and central-southern regions generally receive more precipitation, sometimes exceeding 2,000 or even 3,000 millimeters annually, reflecting the direct influence of the maritime air masses. Moving inland towards the northeast, the total rainfall decreases, typically ranging between 1,000 and 1,500 millimeters per year. This gradient in precipitation is a major factor in the transition from coastal wetlands and forests to drier savanna ecosystems in the east.

Following the deluge of the rainy season is the hot, dry season, which generally spans

from November or December to April or May. During this time, the ITCZ shifts southward, and the dominant winds change. The dry season is marked by the arrival of the Harmattan, a northeasterly trade wind originating from the Sahara Desert.

The Harmattan brings hot, dry air and is often laden with fine dust particles from the Sahara, which can reduce visibility and coat the landscape in a fine, reddish layer. This period is characterized by minimal rainfall, with some months, like March, often receiving virtually no precipitation at all. The lack of rain causes many seasonal water bodies to dry up and the vegetation to become parched, a stark contrast to the lushness of the rainy season.

Temperatures in Guinea-Bissau remain high throughout the year, befitting its tropical location. Average temperatures generally fluctuate between 26°C and 29°C. However, there are variations depending on the season and location. The hottest months typically occur towards the end of the dry season and the beginning of the rainy season, from February to May, when temperatures can soar, sometimes exceeding 40°C, particularly in the interior.

Even during the rainy season, temperatures remain warm, though the increased humidity can make the heat feel more oppressive. Coastal areas often experience slightly milder temperatures due to the cooling effect of the sea breeze, while inland regions tend to be hotter, especially before the onset of the rains. The dry season, while hot during the day, can bring cooler nights, especially in the months of December and January.

Humidity levels are significantly higher during the rainy season, often reaching around 80% or more, contributing to the muggy conditions. In contrast, the dry season is marked by much lower humidity, particularly when the Harmattan wind is strong, making the air feel dry and sometimes uncomfortably so. This seasonal fluctuation in humidity also influences plant life, affecting transpiration rates and water availability.

In summary, Guinea-Bissau's geography presents a transition from a tidal, low-lying coast to a slightly elevated eastern interior, punctuated by rivers and offshore islands. This varied terrain, combined with a strongly seasonal tropical climate defined by a wet monsoon period and a dry Harmattan-influenced season, creates a diverse range of environmental conditions. These conditions, in turn, provide the foundation for the rich and varied native flora that is the subject of this guide.

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