Practising biodiversity in Guinea: 
nature, nation and an international convention

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Summary

Biodiversity has become important to research and policy in Guinea; to daily work in the National Environment Directorate, the Forest and Wildlife Directorate, and the many donor funded programmes. Scientists and projects are reproducing and reworking the biodiversity concept as they grapple to find ways to operationalise it. Several kinds of practices are now configured together (and funded) under a biodiversity label, including (a) the production of lists of plant and animal species which university scientists and projects carry out with donor support; (b) the exploration of ecosystem dynamics through ‘cutting edge’ sampling and computer modeling techniques, (c) the harnessing of traditional plant medicines by environmental NGOs and networks of healers to promote conservation; and issues also linked with discussion and action concerning bio-piracy, multi-national corporations and ‘indigenous property rights’, and (d) promoting the use of semi-wild plants such as oil palms, which link conservation with land user’s economic interests.

Modern concern for biodiversity echoes older colonial environmental concerns. Contemporary science and policy draws on historically sedimented practices (science and policy traditions) shaped by the particular history of administrative succession: from colony, to independent African socialist state, to one party military dictatorship, to contemporary liberal democracy. The policy practices of each epoque have been shaped in relation to its predecessor. For example, Guinea’s radical pan-Africanist socialist state sought to promote African herbal medicine. An economic necessity, this was also a political act which gained meaning in opposition to the alien colonial health regime which had earlier demeaned indigenous health practices. Yet whilst framed in opposition to colonial medical practice, research practices (and claims to scientific authority) also drew on colonially shaped scientific practice. Research sought to identify active plant chemicals, but not the social practices of medicine in which herbs were embedded. The policy thus trod a difficult line between Africanization on the one hand (defined in opposition to colonial practice), and ‘demystification’ defined according to colonial traditions of ‘scientific’ practice. In doing so, it helped shape new meanings for those involved about what it is to be African and Guinean; what is natural and what is supernatural, what is cultural and what is ‘mystification’.

With attention on biodiversity, numerous programmers now compile knowledge of plant medicines, encouraging environmental and health NGOs and ‘traditional healers’ to pool information and discuss strategies for biodiversity conservation. This suits a generation of development donors concerned to link biodiversity conservation with participation and to carry out development by working through ‘traditional’ forms of organization and authority. But whereas under Sekou Toure this interest derived from a focus on human health, the interest of international discourse focuses on vegetation health, and whereas it was earlier locked into a nationalist discourse, international interest in biodiversity conservation is locked into an internationalist one.

Other contemporary biodiversity practices similarly present biodiversity as a ‘nature’ which people might act on or exploit, but from which their lives are ontologically distinct. Species lists drawn up for reserves iconise their superior diversity, but remain uncompared with inhabited landscapes. Semi-domesticated plants are recast as ‘semi-wild’ ones, detached from the social processes of their establishment. These practices reproduce and reinforce ideas of nature as separate from people, whether in the form of commodities, of spaces (parks, reserves), or of desocialized medicinal plants.
This contrasts with local framings which present a more socialised historical perspective on ecology and landscape. Despite avowed attempts to ‘include people’ in biodiversity conservation – to move from colonial exclusionary approaches to modern ‘conservation with development’ and ‘participation’, the framing and institutional/funding imperatives linked to international biodiversity debates have pushed those working within their ambit further towards practices which reproduce western, colonial distinctions between nature and culture, and which are antithetical to understanding relationships between people and vegetation in the region. Where perspectives of villagers have been incorporated, this has been only partially, with ‘good’ and ‘bad’ practices in African social life being adjudicated by scientific enquiry based on alien values.

Introduction

A cacophony of voices now speaks ‘environment’ in Guinea. French bacteriologists researching nitrogen-fixing leguminous trees justify it ‘to minimize the environmental impact of refugees’. Much European, German and World Bank funded assistance to Guinea’s rice farming, tree cropping, even bee keeping is financed by environmental programs. Curiously, it is these programmes which have funding to build schools and bridges and to dig wells to entice villagers to transform their land management ways.

All three national universities are altering interdisciplinarity structures to respond to ‘environmental’ questions, and to the research funding these can attract. The only PhD program in the country is in environmental studies (not agriculture, geography, history, politics, mining, or economics as one could expect). Indeed, the environmental research centre which houses this program is a stunning oasis of Canadian funding in an otherwise destitute and depressed institution. At the other end of the educational scale, primary school teachers’ latest glossiest handbooks are not for mathematics, science, history, but for environmental education.

Universities, schools and development programs form a only small part of a broader informational realm in which environmental worries are evoked, local land use stigmatized and environmental programs applauded. There has been an efflorescence of environment messages in popular culture and mass-media. Indeed, environment is pivotal in the shaping of mass media in form as well as content. A European union environment program funds the local language newspaper. It funds the journalists, and it funds the establishment and running of rural radio. Alongside the newspapers and radio, environment projects are working with Imams to green Islam and the Friday prayer, and preachers and their sermons. They work with hunter societies - ‘brotherhoods’ - to green and groom rural society to project objectives, and with theatre groups and praise singers who now eulogize the trees as much as chiefs and ancestors.

It would be interesting to explore how and why society in this poorest of African countries has been so shaped by environmental anxiety. As we have written elsewhere, it is certainly not because its environment is in terminal decline – far from it. But this question would be digression. Within this cacophony of environmental voice, biodiversity has become a key organizing concept. Guinea was the second country in Africa to ratify the 1992 biodiversity convention which was signed in Rio at the Earth Summit, and the concept of biodiversity is now central to the strategizing and daily work in the National Environment Department, and the Forest and Wildlife Department, and the many donor funded programs which have now reoriented their work towards ‘biodiversity’ conservation objectives.

But how do the ideas concerning ‘biodiversity’ and its conservation which circulate in international organizations relate to the national and local settings which may reproduce or rework them? How do Guineans relate to evolving international scientific and policy practice in the specific locales of application, and in the equally specific locales of national bureaucracies? How do those working in national organizations and their street and field level representatives understand and operationalize
conservation of ‘biodiversity’? And in their work, how are their ideas of nature and of society and culture being reproduced or transformed? These are the questions we want to address.

Modern concern for biodiversity and for its conservation echoes older colonial environmental concerns, although this had focused more on deforestation and its supposed influence on climatic desiccation. As today, colonial administrations and their ‘street level bureaucrats’ had to balance international scientific practice and policy (which they sometimes had a hand in) with the political, economic and ecological specificities of the territory they administered.

Yet there are differences, as we shall explore. The evolution of contemporary science and policy draws on the practices (science and policy traditions, if you will) sedimented in earlier colonial times. These are traditions of practice which have been shaped by the particular history of administrative succession; in Guinea, the colony from 1890s to 1962, the independent African socialist state (from 1962 to 1984), the one party military dictatorship (1984-93), and now a contemporary liberal democracy. When the policy practices of one epoch are transformed, they are often shaped in a dialogical relation to their predecessors.

Take for example, the attempt after Independence of Guinea’s radical pan-Africanist socialist leaders to promote African herbal medicine. This was in part a political act which gained its meaning in dialogical opposition to the alien colonial health regime which had earlier demeaned indigenous health practices. It also made sense in relation to economic realities then faced by Guineans in the isolated and bankrupt economy. Yet whilst the subject of the research was framed in opposition to colonial medical practice, the practice of research (what made it scientific) drew on colonially shaped scientific practice. Research sought to identify active plant chemicals, but not the social practices of medicine in which herbs were only a part. The policy thus trod a difficult line between Africanization on the one hand (defined in opposition to colonial practice), and ‘demystification’ defined according to colonial tradition of ‘scientific’ practice. In doing so, it helped shape new meanings (for those involved) about what it is to be African and Guinean; what is natural and what is supernatural, what is cultural and what is ‘mystification’. Colonialism may be over, but its echoes still shape the present.

In this vein, we want to explore here the current practices of scientists and projects involved in mobilizing the biodiversity concept in national research and policy, examining where they build on earlier traditions of practice, and the implications of this for the culture of nature, and the nature of culture. Presently, several rather diverse kinds of practices are configured together (and funded) under a biodiversity label. These include:

- first the production of lists of plant and animal species which university scientists and projects carry out with donor support. As we shall see, such research is intimately related to the creation, justification and funding of national parks, and forest reserves.
- second, the exploration of ecosystem dynamics through ‘cutting edge’ sampling and computer modeling techniques, which is equally linked to funding justification,
- third, the harnessing of traditional plant medicines by environmental NGOs and networks of healers to promote conservation; and issues also linked with discussion and action concerning bio-piracy, multi-national corporations and ‘indigenous property rights’,
- fourth, promoting the use of semi-wild plants such as oil palms, which link conservation with inhabitants economic interest.

Biodiversity has acquired significance in Guinea through these fields of practice, involving as much low level government and non government employees as those in ministerial and donor offices. Each of these practices involve different social relations and funding of science; different international networks, and different political discourses. In this respect while each set of practices relates to biological conservation, each also carries wider importance in shaping national, and local social and cultural identity, and it is this that we ultimately seek to explore.
Some theoretical clarifications

Our approach engages with a range of literatures concerning the ways science and policy mutually inform each other. As in many such studies, we take a methodological skepticism to the content of science, to enable an exploration of its social construction and meanings (cf. Gordon in Foucault 1981, Barnes and Bloor 1992, Jasanoff, 1996, Wynne 1996). Rather than attempt to argue for any particular perspective (in this paper at least), what we are interested in how social and historical context shapes scientific research and findings and its relationship with policy and wider society.

Work in the sociology of science has long problematized the ways that social and political values inform the setting of scientific agendas, the way scientists work, and the ways they reach their conclusions. It emphasizes how ‘scientific knowledge embodies implicit models or assumptions about the social world’ (Irwin and Wynne 1996: 3). As emerges in a review by Keeley and Scoones (1999), researchers examining policy processes and the contests over knowledge which they imply have varied in the extent to which they take a more ‘structural’ or more ‘agentive’ approach. Among the more structural approaches, some see science and policy change as negotiated between structured political interest (policy communities, ‘advocacy coalitions’ (Jordan and Richardson 1987, Sabatier 1988)), or as socially constructed through particular discursive regimes of power/knowledge (e.g. following Foucault, Shore and Wright 1997, Drysek 1997). Other approaches give more weight to the agency of particular actors, their strategies, and interactions, ranging from Norman Long’s interface analysis (Long and Long 1992) and the Paris School’s actor-network theory (e.g. Callon and Latour 1981), to work on the strategizing behavior of what Grindle and Thomas (1991) characterize as policy entrepreneurs, or to knowledge elites, who share core beliefs, characterized as ‘epistemic communities’ by Haas (1990, 1992).

Our methodological approach to science and policy takes the focus off agency and structure, and focuses instead on the constellation of particular practices and procedures which can be and are considered as science or policy, and on the field which they add mass to and from which they derive funding. Ideally, such a perspective allows each practice – each workshop, meeting, report, legislative decision, funding flow - to have its own biography, which at once contributes to ‘policy’ without conforming to any particular totalizing narrative of its evolution, enactment, or meaning. Practices that are scientific can have their own specificity (reviewing species lists, characterizing ecological zones, listing the forces leading to degradation), and need not conform to any totalizing narrative of scientific method and scientific advance.

Included in the idea of practice, as we want to use it at least, are the ways in which ideas can become vested in (encoded in) landscape features (such as ‘watershed protection reserves’ ‘fire curtain reserves’ or ‘permanent sample plots’). Ideas become encoded in networks of collaboration (such as those linking national park management and university zoology departments) as well as in methodological practices. Particular ideas may endure through their practice, and because they are practiced, while other ideas, not embodied in such practice, become rather different phenomena. Scientists may have disproved that the Sahara is advancing because of anthropogenic influence, but the idea that it does lives on in the international desertification convention, and the myriad of program extolling inhabitants to change their ways. If the idea of human induced desertification had never been practiced, its refutation would be a very different phenomenon.

Practices of science and policy may to some extent be generated and proceed independently with particular ‘bits’ of science taken up by particular bureaucrats at certain points in policy processes. Yet as Shackley and Wynne have argued, there are important ways in which science and policy may be co-produced by processes such as funding; the commissioning of studies and consultancies, and practices of ‘applied, policy relevant research’. When citizens generate their own science to contest particular policy directives, science is being produced within policy process. More broadly, scientists may contribute to the framing of policy issues by defining what evidence can be produced and its policy significance. Those working in policy also frame scientific enquiry by defining areas of
relevance, and pertinent questions for investigation. Such co-production also occurs at a second level; participation in policy lends credence to calling practices (such as listing species) ‘scientific’ – and political action based on science gains credibility to be called policy – or at least to be considered a contender for it. Taking a practice-based approach encourages us to pay attention not only to co-production (of science and policy) but to co-endurance (through repeated practice, bureaucratic tradition etc.) and co-validation.

The social relations of science and policy are shaped through political history. In one-time colonies such as Guinea, this shaping has been such as to produce almost total disengagement of land users from the development of environmental science and policy to date. We are not going to explore how villagers in Guinea consider and debate ‘environmental issues’. We have explored this at length elsewhere. But suffice to note that it has made remarkably little impact on the development of science and policy. In the instances where local resource users have been involved in research and policy processes, we explore how it has been on terms which do not permit the full engagement of their alternative perspectives, and which merely repackage the elements of local knowledge meaningful to science/policy discourse. Alternative lines of scientific enquiry have therefore been excluded, shaping the silences and well as the concerns of science/policy.

An era of biodiversity

Guinea’s Environment Directorate has been responsible for the negotiations and the subsequent implementation of the biodiversity convention, and the production of a national biodiversity strategy and action plan. Whereas the Environment Directorate cannot implement, the Forestry Directorate can, with its large staff managing state forests and forest law throughout its Prefectoral and Sub-Prefectoral administrations. The Forest Directorate is, however, heavily dependent on supplementary funding and infrastructure from donor funded projects, and this – along with the green conditionalities imposed on Guinea by international financial institutions – means that large parts of its activity are now inflected by donors’ concerns, where biodiversity looms large.

That those working in forestry, conservation, agricultural and environmental jobs have been turning their attention to ‘biodiversity’ issues is certainly linked to funding. But it is also stimulated by a developing interest in the subject. Through the national and international networks a ‘mutually interested community’ (epistemic community) has developed which gives new meaning and application to the skills of many involved. For national university academics, biodiversity provides an opportunity for ‘research’, and for those in foreign universities, it provides funding and interest in ‘cutting edge’ research.

That the major EU funded Niger River Protection Programme which was initially conceived as a watershed protection program has recently employed as its key expatriate a specialist ecologist skilled in ecosystem research (not hydrology), and that the refinancing of the program that he is responsible for flags ‘biodiversity’ as a major theme clearly illustrates the shift (in donor interest) from concerns with watersheds to concerns with ‘ecosystems’ and biodiversity.

National academics in Universities, and Government Research Institutes have been incorporated into several of these developments. And many work simultaneously for non-governmental organizations which deal with environmental issues. International donors now often seek to work through NGOs rather than the state, and this enables talented government staff to work in the lucrative and better financed world in a freelance capacity. These rather entrepreneurial NGOs have been quick in ‘mobilizing’ biodiversity and the funds it attracts. One, to give an example, is developing a ‘biodiversity’ project with university staff to re-invigorate a national game reserve, receiving financing from the German national fund dedicated to international biodiversity conservation, helping spend the money which Germany is obliged to spend following its ratification of the biodiversity convention. The same NGO is developing a medicinal plant initiative.
However briefly, let us look at the spectrum of practices these state, projects and ministries engage in.

1. Listing diversity

Focused attention on biodiversity has heralded a resurgence of interest in the identification and listing of plant and animal species. Long before colonization, European visitors to West Africa had begun collecting and naming local flora. Early in the colonial period, botanical gardens and research centres collected, identified and classified plants, and established and managed plant herbaria.

Certain Guineans became indispensable to this process through their knowledge of the flora and their capacity to identify and distinguish plants. The Guineans involved became renowned for their botanical knowledge, and informally this contributed to their reputation as herbalists. At Independence it was these few Guineans and their apprentices who took over the herbaria. Their skills were valued when the state became interested in medicinal plants, as mentioned, and several were sent for botanical training in East Germany.

State funding interest in indigenous medical plants eventually waned following the death of President Sekou Toure in 1984, so the botanists had to continue with minimal resources and lack of recognition. They were kept busy ‘tree spotting’ (largely for forest inventories and forest exploitation), rather than for their herbaria and knowledge of diversity. In the last five years however, there has a rapid increase in the demands on these charismatic botanist-healers time as more attention being paid to making species lists, and in identifying endemic species, those ‘in peril’ and in totting up numbers of each. These lists are central to many university and ministry biodiversity studies.

Species lists appear in justifications to prioritize particular locations, yet their role in this is far from straightforward. First, species lists have generally been made in ‘protected areas’ such as forest reserves. Forest reserves have a long history in Guinea, being proposed in the 1900s and established from the 1930s onwards largely for their supposed influence on regional climate. Species lists were drawn up in early ecological studies within three logics; (a) the ‘practices’ of the taxonomist-collector (locating new plants, interacting with metropolitan plant collections to establish the classification, coupled to the cult of naming in recognition of the finder), (b) the practices then used to define ecosystems (via plant communities - phytosociology), and (c) the practices of inventory for determining the ‘economic value’ of a forest. Significantly, there was little attention paid to diversity per se.

So reserves and parks which had their own logic of foundation proved to be the site of taxonomic practice – producing the lists for one set of reasons which are now important to supporting the continued existence of such reserves for another, in an era of biodiversity conservation. The practice of compiling lists from secondary sources only reinforces such focus on existing protected areas.

Virtually no comparable lists have been established for inhabited landscapes. The lists give the semblance of logical prioritization to the parks and reserves which are long established, and by deduction, to the idea of biodiversity wealth and conservation in reserves, and biodiversity destruction in inhabited areas. In short, the presence of these reserves established for different reasons, has facilitated the development of science/policy around biodiversity in protected areas; in the same way perhaps as the emptying leprosaria for Foucault, facilitated the development of the clinics which redefined the mad (Foucault 1965).

This has very real effects on the way conservation management is evolving in the region. In one donor funded reserve oriented towards biodiversity conservation this logical association of biodiversity conservation with reservation has been reproduced, in the structure of its refinancing, and its conditioning of everyday practices. The forest reserve received support from one funder, and the inhabited buffer zone outside from another. The reserve project is responsible for ensuring ‘biodiversity and habitat conservation’, and the latter, for ‘local participation and livelihood sustainability.’ In this institutionally-divided setting, biodiversity and participation have come to be
seen as trade-offs. As one project staff member put it: ‘In village forests, biodiversity has no role. It does not interest villagers. In the forest reserve, the biodiversity aim must necessarily reduce the extent of participation; the more one has a goal of biodiversity conservation, the less one has participation.’

The reserve boundary came to be seen within the project as a dividing line between zones where important plants and animals might thrive, and those where farmers might be encouraged to intensify their agriculture and so reduce pressure on the reserve. As a Guinean critic observed, this structure precludes attention to the ways farmers have long used products from the forest reserve and integrated a huge diversity of ‘wild’ plants within their own landscapes. Yet his critique is not practiced.

A second weakness to the seeming scientific rationality of prioritization was made visible in a recent regional meeting held in Ghana of more than 300 international and national scientists and policy makers which focused on prioritizing biodiversity conservation in West Africa. Ideally, species number modified in relation to endemism was to be the key criteria in priority setting. Yet in discussion, participants were understandably keen to favour their particular projects and protected areas and indeed countries, and when national or local importance appeared to be reduced due to a relatively poor position in relation to list based endangerment, assorted arguments showing the real weaknesses of listing were marshaled in defense. The correct research had not been done... A key report had not been consulted... Important subspecies issues were overlooked... A focus on butterflies, orchids, or birds, rather than trees would show a different set of priorities...

Despite the practices of list-making, those managing protected areas actually consider the lists to be of little use. A major national park exemplifies this. University researchers have been contracted to conduct a series of animal and plant species inventories. The researchers involved find this rather tedious and uninteresting from a scientific point of view. They would prefer to be researching ecosystem dynamics, which they see as more important for advancing scientific knowledge of the region; ‘there is not much treatment of systemic aspects of vegetation; this is a major lacuna’ Yet given the social and funding relations of science in a Guinea where universities are chronically underfunded and foreign aid projects provide almost the sole context in which field research costs can be met, and reports published, researchers have little choice but to work on the project’s terms.

Paradoxically, however, those managing the park also see these qualitative inventories as of virtually no use in day-to-day management. As the Park’s director put it: ‘lists of species are fine for global biodiversity, but not for managers. We need to go deeper, to have quantitative information and information on ecosystem dynamics.’ From his perspective, data on species numbers and hunting kills, for instance, is needed to assess how endangered species are relative to hunting.

2. Ecosystems and diversity

A second conception of ‘biodiversity’ elaborated through contemporary scientific practices highlights how diversity is embedded in ecosystemic relationships. From the first years of the 20th century, colonial botanists categorized particular plant communities in relation to broad climatic zones. Ecosystems were seen as stable formations, characterized by particular dominant trees – a ‘climax vegetation’ in relation to prevailing climate and soil conditions, unless ‘disturbed’ and ‘impoverished’ by human impact. This analytical frame persists today in the national biodiversity assessments, made by national university staff commissioned by the Environment Directorate. Natural and social scientists have assembled data from secondary sources in such a way as to present general arguments about ‘loss of habitat integrity’ under pressures from farming, burning, overfishing, overhunting, population increase and so on. The work supports the reserve strategy for biodiversity conservation.

Simultaneously, however, another research programme is being conducted as part of the Niger River Protection program, by expatriate researchers. This is using a highly detailed quadrat survey method and computer modeling technique which generate patterns of species association in relation to soil,
climate land use, and the culture of it. Proclaiming that the modeling enables the research practice to be ‘without a-priori’ the expatriate project leader, and force behind this research, sees the method as an ultimate tool in objective ecosystem analysis.

The fresh approach provides a radical departure from the listing and climax ecosystem classification. First, it examines species diversity in inhabited landscapes, treating these not just as ‘impoverished ecosystems which would be better represented in reserves’. Second, it focuses on the forest-savanna transition zone as a species rich tension zone (a site of speciation), rather than a species-poor zone (a site of degradation).

There are clear ways in which this research is shaped in its co-production with policy. Not only is it being conducted by an environmental programme, but it is already project policy to work to promote biodiversity in lived-in landscapes. And for regional political reasons the project must now work in the ‘forest-savanna’ transition zone. Both these dimensions are crucial to the refinancing of the program, which has been uncertain. The expatriate was hired with the skills to conduct this research.

These scientific practices are perhaps more significant for the way they speak to an international scientific community, enrolling certain Guinean and expatriate researchers working in Guinea into a global actor-network developing high-tech ecosystemic research. To date, Guinean university biologists who conduct national biodiversity research have been ‘confined’ to carrying out taxonomic studies for donor projects. They do not even know of the existence of this research.

It is ironic and sad that Guinean natural and social scientists, academics and project staff remain locked into colonial scientific paradigms, the view of nature they embody, and the reservation policy it has endorsed. The new, expatriate driven, science presents a radical departure from this. Yet it does not just depart merely in ‘academic’ ways. The new science is in dialogical relation to the old not just in method, but in its policy practice. It may counter deductive methods about climax vegetation with generative ones, but it simultaneously counters the social exclusionary biodiversity conservation of reserves with an apparently socially incorporative policy of ‘participation’. As in the case of the dialogical reversal in medical research and practice under Sekou Toure the we have described, this apparent reversal depends ever more on the ‘practice of science’, and its capacity to differentiate the ‘good’ aspects of African practice (in this case land management for biodiversity) from the problematic. Indigenous framing of biological issues, and the debates they have does not enter the picture. The adjudication of good and bad practices concerning African social life are again scientised, and in social relations of science as – or even more – alien than under colonial times.

3. Medicinal plants and diversity

A third set of practices considered within the rubric of ‘biodiversity’ concerns medicinal plants. Numerous programmes now compile knowledge of plant medicines, encouraging environmental and health NGOs and ‘traditional healers’ to pool information and discuss strategies for biodiversity conservation. This suits a generation of development donors concerned to link biodiversity conservation with participation and to carry out development by working through ‘traditional’ forms of organization and authority. This dimension of ‘biodiversity’ generates interest among many Guineans. The taxonomist-herbalists discussed earlier now find themselves in great demand as brokers between healers, professional botanists, donors and government staff. They are popular not least because they can speak – and help integrate – the various languages. Numerous younger university-educated people have aspirations to ‘join the circuit’. One in Kissidougou spends his spare time collecting and collating village information about plant medicines, and plans to produce a book which he hopes will attract the attention of ministerial and donor personnel interested in this aspect of biodiversity. Many Guineans who share this perspective are already in positions of authority in the national bureaucracy, and they have not found it hard to enroll others in their perspective.
Biodiversity interest has thus given renewed impetus to practices which promote ‘local’ plant medicines. As mentioned earlier, during the First Republic under Sekou Toure scientific and policy practices around plant medicines were most strongly promoted. Between 1972 and 1978, all pharmacy students had to conduct a study of the medical uses of a particular plant, comprising a botanical examination, a determination of chemical constituents, and local knowledge of its pharmaceutical and therapeutic importance. East Germany provided funding and materials.

This was part of a broader set of practices associated with the political philosophy of this phase in the First Republic, heavily influenced by the writings of the then President Sekou Toure and his ideologues. The key motives, as clarified in the students’ introductions to their dissertations include first, national self sufficiency, which is easily understood given Guinea’s self imposed economic and political isolation during this period; second, a valuing of national patrimony, and third, a revaluation of elements of African popular culture – albeit in the terms of modern science. For example:

> Our popular medicine is rich mine and is marked with the impressive character our historical legacy. The revalorization of this popular medicine through a painstaking exploration of our flora, and its restitution to all the people of Guinea remains a pressing and ‘exultant’ duty of every militant of our country (Barry 1974)

The pharmaceutical research practices of the era were thus shaped by, and contributed to, discourses which simultaneously promoted modernist science and ‘authentic’ African culture. The practice of cataloguing medicinal plant knowledge and repackaging it in the terms of (medical/pharmacological) science, and valorizing vegetation is very similar to international biodiversity concern today. In both cases, medicinal plant knowledge is extracted from the social relations of its day-to-day practice in village settings (cf. Thrupp 199x, Agrawal 1995). But whereas under Sekou Toure this interest derived from a focus on human health, the interest of international discourse focuses on vegetation health, and whereas it was earlier locked into a nationalist discourse, international interest in biodiversity conservation is locked into an internationalist one.

Guinean historical experience continues to shape its engagement with international discourse. In particular, Guineans are particularly sensitive to bio-piracy (the exploitation of local biodiversity resources by other nations or corporations). This has been important to most ‘southern’ perspectives on international conservation discourse, but have added weight in Guinea for at least three reasons. First, because there is a long history of the exploitation of local plant resources by foreign powers – colonial and soviet block. Second, the plundering of Guineas other mineral and timber resources by foreign companies is today of great significance, and there have been numerous popular insurgencies against them. ‘David and Goliath’ stories of these struggles are on the lips of rural and urban publics alike. Third, bio-piracy presupposes ‘bio-wealth’, affirming the idea that Guinea is tremendously rich in biodiversity resources, giving weight to the economic importance of conservation (past and future). Thus the concern is less with ‘international wealth’ and ‘plants for plants’ sake’ that with national wealth, and the economic benefits of conservation.

When actively contributing to international debates concerning this issue, Guinean national spokespeople also bring a second distinctive perspective. Generally in international discourse, concern with biopiracy is juxtaposed with ‘indigenous intellectual property rights’. But Guinean spokespeople reject the ‘indigenous’ polarity of this debate, continuing to see the practice of valorization of biota as a ‘nationalist’ enterprise, and understanding ‘indigenization’ of rights as a threat to state authority and stability. It promotes ethnogenesis; the antithesis of African nationalist discourse which those working in ministries had learnt at school. With Sierra Leone and Liberia on the border, this is also a very modern concern.

Once again, the particular way biodiversity is being mobilized in the country has been shaped by national history; by a sedimentation of practices from colonial times, transformed dialogically at independence, and transformed again in contemporary debate.
4. Economic plants and diversity

Extending out of interest in medicinal plants, the practice of ‘biodiversity’ in Guinea also draws on a fourth set of existing practices which concern economically-useful wild plants. Projects are keen to ‘show villagers how valuable are products such as tree nut oils, palm oil, honey, dental sticks’. In project rhetoric, such an approach is linked to ‘participation’, especially among certain groups such as women’s groups. It also conveniently links economic incentives to biodiversity protection.

Focusing on the latter, one project worker noted:

‘Biodiversity is one of our strategies for the protection of natural resources which enables us to fuse economy and protection. We were oriented only towards protection, and it didn’t work very well. Now with an economic emphasis, peasants are more interested. For instance, honey is a product of biodiversity, so is palm oil and palm nut oil.’

Many projects have done surveys of potentially economic products. Yet all of those they identify are already widely used and semi-domesticated. Villages actively preserve wildlings, and sometimes transplant them for accessibility and convenience. In this respect the plants could be considered more ‘agricultural’ than truly ‘wild’; a point overlooked by those discussions which make a general equation between biodiversity and ‘wild plants’ and associate the latter with undisturbed ‘nature’.

Projects have long been teaching villagers the value of their own environment, especially in relation to timber. In doing so they simultaneously construct an ‘ignorant peasant’ who does not know the value of the resources around them, and an ‘intelligent project’ which does. When explicitly challenged with the idea that villagers might already use and value palm oil, honey and so on, personnel promoting this perspective tend to respond with the notion that this is specialized, not generalized knowledge, thereby allocating development projects a role in ‘diffusion of information’. They also suggest that villagers may use these products, but are ignorant of their market value, thereby allocating projects a role in promoting commercialization.

It is not difficult to trace these practices back to the colonial botanical gardens and their role in the commodification of wild plants. Botanists in the first decades of the twentieth century also sought out useful ‘indigenous species’ - of rubber, coffee, and so on – and sought to propagate and improve these products with a view to commercialization.

But then, the plants concerned were generally recognized to be semi-domesticated by local populations, and indeed an aim of colonial policy was to domesticate and improve these plants further in order to enhance their economic value. Modern biodiversity concern, in contrast, seems to dictate a definition of these as ‘wild’ plants, not least because this confirms the relevance of developing them in a ‘biodiversity’ project. Other possible interpretations of biodiversity which would guide practices around these plants differently – for instance emphasizing agro-biodiversity and the ways local plant use practices conserve and enhance genetic diversity among domesticated species – are hardly evident in Guinea. The difference is telling. Those practicing this aspect of biodiversity policy in Guinea consider biodiversity to be something of nature, something wild; the antithesis of farming and land use.

Some concluding remarks

‘Biodiversity’ as an explicit organizing concept for conservation is new to policy in Guinea. Here we have tried to explore the way that Guineans and expatriates working in the country have interpreted and ‘operationalized’ it. The different sets of biodiversity practices that we have explored in this paper are not associated exclusively with particular people. Rather, individuals and institutions are engaging simultaneously with practices that we have considered separately.
To understand the emergence of these practices in Guinea today, one would need to explore the genealogy of international scientific concern and funding for ‘biological diversity’. What we have tried to explore, though, are some of the particular forms that the policy has taken in the country, showing the need to consider this both in relation to specific history of the country, and to contemporary social and political circumstances. We have taken a practice perspective (disembodied practices which have their own specific histories, yet come to cluster in particular ‘projects’) to do this, which combines – we feel – a way to explore both the sedimentation of history into ‘structure’, and the capacity for people to be the creative agents, or bricoleurs.

Those mobilizing the biodiversity concept are grappling with its relevance to their work and its ‘applicability’ to policy, latching on to existing sets of practices. The impetus from biodiversity has not left scientific and policy practice unscathed, as enduring phenomena. Rather these have been subtly changed in form and in meaning for those conducting them. Yet this has occurred in a dialogical relationship with the practice-as-was. It is thus still shaped by the historical meanings of such practices – albeit in part in relation also to contemporary experience.

Science-policy processes also ‘do other things’, producing and reproducing certain images of wider society and economy – a point sometimes missed by the genre of close-focus, micro-historical analyses. To date, the new meanings that conservation bureaucrats now give to these practices have reproduced/reinforced ideas of nature as separate from people, whether in the form of commodities, of spaces (parks, reserves), of desocialized medicinal plants. Where it has incorporated perspectives of villagers, this has so only partially, with the good and bad practices in African social life being adjudicated by scientific enquiry into issues based on alien values.

Indeed for all their variation, the perspectives we have discussed here all in their different ways present biodiversity as a ‘nature’ which people might act on or exploit, but from which their lives are ontologically distinct. In so doing, they exclude key alternative local framings, and what we would term a dynamic landscape perspective which would see biological patterns throughout the region as shaped through the interaction of social and ecological processes over time. Paradoxically, it seems that even foci with the potential for building a landscape perspective – such as oil palms, long managed, used and spread by people – become detached from the social processes of their establishment in their reconfiguration into the ‘wild plants’ of international biodiversity debates. Despite avowed attempts to ‘include people’ in biodiversity conservation – to move from colonial exclusionary approaches to modern ‘conservation with development’ and ‘participation’, the framing and institutional/funding imperatives linked to international biodiversity debates have pushed those working within their ambit further towards practices which reproduce western, colonial distinctions between nature and culture, and which are antithetical to understanding relationships between people and vegetation in the region.

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1 Interview, Evert Wauters, Nzerekore, 15th February 1999.

2 Interview, Director, Institut de Recherche Agronomique, Seredou, 18th February 1999.

3 Listing practice (what is listed, and what is significant to the list) is shaped by culture. Certain species have come to iconise (or embody) the idea of ‘endangerment’. In these lists, chimpanzees, for example, have come to stand for their own endangerment, and for their habitat loss and without, seemingly, a need for research into their changing status and whether they (or their habitat) is in fact in danger. How chimpanzees (and other icons) have acquired this status would require a full genealogy of iconography, but European debates about their export from West Africa for scientific experimentation in the 1960s would come into it. Yet chimpanzees (which are not in the least endangered according to villagers in many parts of Guinea) have a very different significance for Guineans.


5 Interview, M. Oulare, Sidakoro, 26th February 1999. Although appealing at face value, scientific practices which give this data could not generate a precise estimate of the effects of hunting on particular species, given the more chaotic ecological dynamics affecting species numbers, and the difficulties of recording the outcomes of various, often secretive hunting practices. Yet aspiration to do this is used as a justification both for controlling hunting in a precautionary sense, and for creating the park as an arena for research to fill that data gap. In this case indeterminacy (unknowability) is constructed as uncertainty (knowable through further scientific research). Science and policy, framed within a similar set of assumptions and funding structures, are thus mutually constructed (cf. Shackley and Wynne 1996).

6 The broad topics and orientation for these thematic papers derives in part from the requirements of the international biodiversity convention, ‘adapted to suit Guinean conditions’ by members of the UNBio committee (Interview, Maadjou Bah). Such adaptation nevertheless neatly slotted into a long analytical tradition of both botanical and social science work in Guinea framed by such assumptions from colonial times onwards.

7 These methods construct what is inevitably indeterminate as uncertainty, knowable through its sampling and advanced computation. Indeterminacy is inevitable, given the chaos of path dependency, multiple variables,
some unknown all changing over unknown timescales in interaction with unknown effects of land-use over an unknown history.

9 Interview, Bignan, UGIVARNA, Kissidougou, 1999

10 It should be noted, however, that the economic concerns surrounding this earlier interest in useful wild plants were primarily those of a colonial regime. Resources were extracted from local ecology and economy to serve the needs of a national administration, rather than developed locally towards building synergies between local livelihoods and conservation as today’s projects would emphasise.