

No to the “Eucalyptus War” in Madagascar!

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Photo 1.

Edge border of a young plantation of Eucalyptus, Analamazaotra, Madagascar.
Photograph Madagascar General Information Service, Overseas of France (1953).

RÉSUMÉ

IL N'Y AURA PAS DE GUERRE
DE L'EUCALYPTUS À MADAGASCAR !

Une vive polémique oppose à Madagascar les naturalistes au service des Eaux et Forêts, au sujet de reboisements en eucalyptus. Elle porte sur 3 000 hectares de plantations effectuées depuis 1908 à Périnet, au sein d'une forêt très dégradée et envahie par les bambous, afin de fournir le combustible nécessaire au fonctionnement des locomotives. Cette aversion à l'encontre des eucalyptus est pourtant mise à mal par les résultats convaincants des plantations expérimentales d'Anamalazaotra mais aussi, hors de Madagascar, au Brésil, au Kenya, au Maroc ou en Éthiopie. La capitale Tananarive et ses environs présentent aujourd'hui un visage boisé grâce aux eucalyptus (*E. robusta*, *E. maculata*) qui, rejetant vigoureusement de souche, approvisionnent les habitants en bois de cuisson et de service. Les plantations d'eucalyptus pourraient aussi enrayer la progression de l'érosion à Madagascar, notamment sur les collines dénudées du bassin du lac Alaotra, éventrées de *lavaka*. Les essences malgaches étant de croissance très lente, rien ne vaut les eucalyptus pour produire du bois. On ne peut rejeter l'utilisation des eucalyptus pour des raisons purement affectives, parce qu'elles n'appartiennent pas à la forêt autochtone. En outre, dans la forêt orientale de Madagascar, le climat est suffisamment humide pour permettre le développement d'un sous-bois et ne pas laisser craindre des phénomènes d'érosion sous eucalyptus. Enfin, il est regrettable que les associations naturalistes malmènent le seul service à s'opposer directement aux destructions des forêts en en classant une partie, en luttant contre les feux, en protégeant les espèces utiles, ou en assurant des travaux de restauration. Tenter de discréditer le service forestier, c'est nuire finalement à la conservation de la nature malgache.

Résumé adapté par la rédaction de la revue.

Mots-clés : *Eucalyptus robusta*, *Eucalyptus maculata*, associations naturalistes, controverse, forêts climaciques, reboisement, Périnet, Madagascar.

ABSTRACT

NO TO THE "EUCALYPTUS WAR"
IN MADAGASCAR!

A dispute has erupted in Madagascar between naturalists and the Water and Forests Service, on the subject of reforestation with eucalyptus. The matter specifically concerns the 3,000 hectares of plantations established since 1908 at Périnet, in a highly degraded forest invaded by bamboos, to supply fuelwood for railway engines. Yet this aversion for eucalyptus trees seems unwarranted given the convincing results of the trial plantations at Anamalazaotra, but also outside Madagascar, in Brazil, Kenya, Morocco and Ethiopia for example. Madagascar's capital, Tananarive, and its surroundings are now wooded thanks to the eucalyptus plantations (*E. robusta*, *E. maculata*) and their vigorous stump shoots that provide the local population with wood for cooking and construction. Eucalyptus plantations could also halt the erosion which is becoming widespread in Madagascar, particularly on the barren *lavaka*-scarred slopes of the Lake Alaotra basin. Madagascar's tree species are slow-growing, and eucalyptus has no equal for wood production. The use of eucalyptus can only be rejected for the purely sentimental reason that the species does not belong to the indigenous forest. Furthermore, in Madagascar's eastern forests, the climate is humid enough for an understory to develop and thus prevent erosion. Finally, it is to be deplored that naturalist societies should wish to challenge the one colonial service that is directly acting against forest destruction by listing certain areas for protection, fighting wildfires, protecting useful species and carrying out rehabilitation work. Attempting to discredit the forests service is ultimately harmful to the conservation of Madagascar's forests.

Abstract adapted by the editorial team.

Keywords: *Eucalyptus robusta*, *Eucalyptus maculata*, naturalist societies, controversy, climax forests, reforestation, Périnet, Madagascar.

RESUMEN

¡NO HABRÁ GUERRA DEL EUCALIPTO
EN MADAGASCAR!

Una intensa polémica opone en Madagascar a naturalistas y al Servicio de Aguas y Bosques sobre las repoblaciones con eucalipto. La disputa se centra en 3 000 hectáreas de plantaciones efectuadas desde 1908 en Périnet, en un bosque muy degradado e invadido por bambú, para suministrar el combustible necesario para el funcionamiento de las locomotoras. Sin embargo, este profundo rechazo al eucalipto queda en entredicho por los convincentes resultados de las plantaciones experimentales de Anamalazaotra y también, fuera de Madagascar, en Brasil, Kenia, Marruecos o Etiopía. La capital Antananarivo y sus alrededores muestran hoy un aspecto boscoso gracias a los eucaliptos (*E. robusta*, *E. maculata*) que, al retoñar vigorosamente de la cepa, suministran leña y madera a sus habitantes. Así pues, las plantaciones de eucaliptos podrían frenar el avance de la erosión en Madagascar, especialmente en los cerros pelados de la cuenca del lago Alaotra socavados por las *lavakas*. Como las especies malgaches son de muy lento crecimiento, la mejor opción para producir madera es el eucalipto. No se debe rechazar el uso de eucalipto por razones puramente afectivas, por no pertenecer al bosque autóctono. Además, en el bosque oriental de Madagascar, el clima es lo bastante húmedo como para permitir el desarrollo de sotobosque y que no haya que temer fenómenos erosivos bajo los eucaliptos. Por último, es una lástima que las asociaciones naturalistas arremetan contra el único servicio que se opone frontalmente a las destrucciones de bosques protegiendo una parte de los mismos, luchando contra incendios, protegiendo las especies útiles o efectuando labores de recuperación. Intentar desacreditar el servicio forestal es algo que a la postre perjudica a la conservación de la naturaleza malgache.

Resumen adaptado por la redacción de la revista.

Palabras clave: *Eucalyptus robusta*, *Eucalyptus maculata*, asociaciones naturalistas, controversia, bosques climácicos, repoblación, Périnet, Madagascar.

A dispute over the use of Eucalyptus has erupted in Madagascar, between naturalists and the Water management and Forests Service. It has become quite intense, even personal, and was recently referred to on the floor of the Versailles Congress. Who would have believed that Eucalyptus trees could trigger such passion and polemics, when they are now considered throughout the tropical and Mediterranean world as a gift to reforestation? In 1952, a voyage to study the Eucalyptus in its natural environment in Australia was organised by the FAO, with 24 countries participating. Its success and interest were such that a second voyage is being considered for 1954, to which we hope that, this time, the French tropical colonies will be invited. I have reported, in this journal, the marvellous results obtained with Eucalyptus in the State of São Paulo in Brazil, following an initiative from the Andrade industrial Group. I have also visited some splendid Eucalyptus test plots in Kenya.

A few years ago in Madagascar, in the forest of Analazaotra (Périnet), I had an opportunity to admire some magnificent experimental parcels planted, if memory serves,



Photo 2.
A plantation of eucalyptus...
Photograph Madagascar General Information Service,
Overseas of France (1953).

in 1914-1915, when M. LOUVEL was the Head of the Forestry Service. We also know of the large plantations established in Morocco with a view to the manufacture of cellulose pulp, and the splendid timber forests around Addis Abeba, in Ethiopia. Cameroon, in turn, is now taking an interest in Eucalyptus plantations on the bare lands of Bamoun, after several promising trials.

But these plantations are now being condemned by naturalists in Madagascar. I should point out straight away that the dispute I deplore did not arise over the plantations on the arid high plateau region around Tananarive. These have flourished remarkably, to the point of changing the aspect of the previously denuded landscape, which now seems almost forested. These plantations have resolved the problem of firewood and construction timber supplies for the population. *Eucalyptus robusta* and *maculata* both grow very well on these now deforested Central Highlands. Their deep root systems thrive on the laterite clay soils where only grassy *bozaka* steppe would previously grow. I passed through some splendid plantations on hillsides in the Lake Alaotra basin that are pitted with *lavaka*, which suggests that reforestation with Eucalyptus in this region could halt the galloping erosion taking place there.

The Eucalyptus trees being incriminated are those being planted by the Forestry Service in the eastern forest, on the eastern slopes of the Central Highlands, specifically at Périnet along the Tananarive-Tamatave railway. At the Versailles Assembly, it was reported that a thousand hectares of Madagascar's forests were being felled each year to make way for Eucalyptus plantations. This implies that the Forestry Service is presiding over the massacre of some 30,000 ha of Madagascar's old-growth climax forests, thus disrupting the natural biological equilibrium, destroying springs and sterilising soils, and inexorably transforming the Eucalyptus plantations into *bozaka* steppe. Such is the situation being described.

Before we hang our heads in shame, let us look at the facts. In reality, the Eucalyptus plantations planned at Périnet will cover not 30,000 but 3000 ha, at a rate of 100 ha per year, on sites that had already been logged in 1908 to supply firewood for the railway.

This logged-over forest is now severely degraded. Felling initially followed the best principles used in managing irregular shelterwood systems. High-quality timber was preserved and other trees removed in order to increase the economic value of a forest by natural seeding. I do not know how the operation took place; nothing remains of the initial plans and inventories. Was artificial seeding and thinning conducted after felling? There is no way of knowing. What we have today is a severely degraded forest with invasive bamboo, a most disappointing outcome in every respect. No lessons can be drawn from this failed experiment, which could have been useful had it been periodically monitored. It could perhaps be considered as confirming the conclusions drawn from all the natural regeneration trials based on seeding after felling in natural heterogeneous forests that were conducted systematically from 1919 to 1925 in Java by Dr KRAMER, and more recently in West Africa: only very light thinning should take place to discourage encroaching secondary regrowth that

would prevent seedlings from becoming established, but the understorey remains heavily shaded so that sapling growth is nil or mediocre at best. Moreover, species from Madagascar's old-growth climax forests grow very slowly; the same observation has been made in the forests of Kenya and southern Brazil. If we wish to produce fast-growing timber in these countries, Eucalyptus has no equal, and preferably in areas that are still wooded. This is why, in order to produce timber, foresters have abandoned the idea of planting *Podocarpus* in Kenya and *Araucaria* in the São Paulo region, even though these are magnificent local species. It is true that oaks in France take 200 years to grow to a size suitable for logging, but we cannot wait for two centuries to produce firewood, and if it is possible to find species that grow two or three times faster to produce timber, it would be inexcusable for foresters to reject them on the mainly sentimental grounds that they do not belong to the native old-growth forest.

The position would be quite different if artificially replanted forests could no longer fulfil the role of protecting soils and the environment that must be expected from all forests, and if it were certain that they would eventually die off, leaving the soil impoverished for all time and barely able to support the stunted growth that all too often replaces the slashed and burned forests of eastern Madagascar. But is this a real danger?

We know that natural Eucalyptus forests are usually sclerophyllous formations that grow in semi-arid or arid climates of the subtropical and Mediterranean type, and that they form a light soil cover in which only a thin layer of living humus can develop. But in Madagascar's eastern forests, at an altitude of around 900 m, as at Périnet, where the climate is consistently humid and rainy with a fairly cool dry season, some Eucalyptus species not only form magnificent high timber forests, but also provide cover in which an understorey of local species becomes established and covers the soil. When felled, the trees produce abundant and vigorous stump shoots. The risks of the forest and the soil becoming degraded do not seem serious. Precautions may be needed during felling to avoid clearing extensive and continuous tracts of forest, and strips of old-growth forest should perhaps be left in place here and there to encourage the establishment of seedlings in the undergrowth. Although in this case, the alarm sounded by biologists seems exaggerated, we should nevertheless give some consideration to the economic aspect. This is not without importance in a region that exports only some 300 to 500 tonnes of high quality timber but which, in 1951, imported 6700 tonnes of timber from Europe. The railway across the eastern forest demands firewood, which the Forestry Service must supply. When logging areas become exhausted, and because the forest regenerates too slowly, it is essential to open up new logging areas in old-growth forest, where it still exists, or to undertake artificial planting. Such fast-growing plantations should, in theory, preclude the need for logging in old-growth climax forests that we wish to preserve, and perhaps we have waited too long in Madagascar to do so in the vicinity of the railway.

But, looking beyond the differences of opinion between technicians that arise in every field – quite naturally as there

are usually several solutions to a problem and each proponent believes their solution is the best one – I find it incomprehensible that friends of the natural world in Madagascar should make such a violent attack on the Forestry Service.



Photo 3.

... which has replaced this natural forest.
Photograph Madagascar General Information Service,
Overseas of France (1953).



Photograph 4.

Madagascar, Analamazaotra: a different view
of natural old-growth forest...
Photograph Madagascar General Information Service,
Overseas of France (1953).

Who better than a forester understands and deplors the dangers of advancing deforestation in this large island, the most eroded I have ever seen! These dangers have been denounced for many years by eminent botanists such as Perrier de la Bâthie and Humbert, and their perseverance has introduced a state of mind that looks more favourably upon forests in Madagascar and is fortunately now reflected in government administration, in the Consultative Assembly and the Provincial Assemblies. More generally, the movement in favour of conserving and restoring the natural environment is making progress across the world. The idea that the soil's nourishment may disappear and famine threaten the entire world's dangerously expanding population, exacerbating the processes of erosion by over-exploitation of soils and their plant cover, is expounded in deeply affecting terms in international symposia and in moving appeals in congresses, on the radio and in the press. Thus do all these naturalists, these friends of Nature, strive to educate the public by means of propaganda.

But in tropical regions, destruction continues because it is the consequence of the native population's way of life. If it is to be prevented, we must lay down prohibitions on local customs, impose obligations through regulations and, especially, enforce their observance, albeit without neglecting education through persuasion, particularly in schools. We are not in the United States, where a powerful technical department for soil conservation often succeeds in persuading landowners to manage their crops in accordance with certain anti-erosion plans and can even prepare conversion projects for them, while allowing them the freedom to either proceed with these plans at their own cost or to reject them. The law makes no obligation upon them. These methods are inapplicable in Black Africa, they are incompatible with customary rules of land tenure, with the generally poor condition of the soil and with the state of mind of the population. Nevertheless, one authority is attempting to counter such thoughtless destruction directly, by creating forest preserves, controlling fires, protecting useful plants and undertaking restoration work, and this is the Forestry Service. Besides the educators receiving the applause of conference audiences, this is virtually the only service working on the ground, taking on responsibility for its actions and, it must be said, for their unpopularity.

Like others, the Forestry Service is dedicated to production, but whereas others, after shedding a few tears over the fate of soils and future of those depend on them, nevertheless continue to exploit them for production by the most direct means, which are often the only means immediately available to them, to extend cultivated areas while feigning ignorance of the increasing destruction of forest cover that results, only the Forestry Service is striving to slow down the process, often successfully, but the task is always met with incomprehension and thus invariably unrewarding. Foresters are trained in the idea that their task is to protect the legacy of future generations from the selfishness of today's generation, and this is the idea that transpires in their activities. Without them, up to now, no effective action would follow on from all the speeches and good intentions as regards halting the degradation of the soil.

A dispute between friends of Nature and foresters is therefore clearly an aberration! If 3000 ha of plantations

are needed to fuel our railway engines, and even if 10 times more are needed to meet a country's needs for firewood, foresters can be trusted to ensure that plantations are established without endangering the region's biological equilibrium, even if they replace degraded native forests. Sylviculture, after all, is their profession.

The most urgent conservation issue is to protect the 5 to 6 million hectares of forest lands that still remain in Madagascar from the slashing and burning that will eventually destroy them. Why accuse the Forestry Service, when it replaces a degraded forest with a forest plantation whose future is secure, of endangering forests and soils as much as those who slash, burn and cultivate and, after a few similar cycles, leave only mediocre secondary forest or steppe behind them?

Attempting to discredit the work of Madagascar's Forestry Service in the eyes of the public through polemical articles and speeches can only cause harm to nature conservation in Madagascar, since, were it not for the work of the Forestry Service, the most dramatic speeches and articles would merely echo repeatedly into an ever-expanding void. There must be no eucalyptus war in Madagascar.



Photo 5.

... and the eucalyptus trees now growing in its place. Photograph Madagascar General Information Service, Overseas of France (1953).