

MISSION REPORT (MAY 1993)

**MOUNT NIMBA (Guinea)
WORLD HERITAGE SITE**

**UNESCO WORLD HERITAGE CENTRE
7 PLACE DE FONTENOY
PARIS
JULY 1993**

SUMMARY

	PAGE #
I. PREFACE	i
LOCATION-MAP	ii
SUMMARY	iii-vi
II. THE MISSION-BACKGROUND	1-2
1) Agreed dates	
2) Participants	
3) Site visits-Mount Nimba	
4) Village visits	
5) Preparation of recommendations	
6) Debriefings	
III. MAIN RESULTS	2-4
1. History	
2. Update of the state of conservation-1993	
3. Update of the state of vegetation-1993	
4. The integrity of the site	
IV. BOUNDARIES OF THE WORLD HERITAGE SITE	4-7
1. The nomination of 1981 (map I)	
2. The nomination of 1991 (map II)	
3. Mineral potential (maps V,VI,VII and report by M. Traore, Annex 4)	
4. Proposed boundaries - 1993 (maps III,IV,VIII,and IX)	
5. Map IX-The proposed limits	
6. Notes on the boundaries of the region not included	
V. URGENT ACTION REQUIRED	7
1. The Mount Nimba Pilot Project	
2. Legislation	
3. Establishment of an Autonomous Management Authority	
VI. INTEGRATION IN SOCIO/ECONOMIC DEVELOPMENT OF THE CAVALLY BASIN	8
VII. MINERAL POTENTIAL AND INTEGRATION	8-9
1. History and background	
2. Requirements regarding detailed Environmental Impact Studies	
3. Future operating grant	
VIII. RECOMMENDATIONS	9-12

IX. MAPS AND SUMMARY OF MAP DATA by J.F. PASCUAL 13

- I Site accepted by Committee 1981
- II Site proposed by Guinea 1991
- III Natural values (A) 1993
- IV Degraded areas (B) before 1981
- V Northern (Septentrionale) Region
- VI Location of ore bodies
- VII Area leased to Nimco
- VIII Area for mining and infrastructure
- IX Boundary proposal Northern sector
- X Boundary proposal 1993
- X Limits of Biosphere Reserve

X. ANNEXES

- 1. The World Heritage Value of Mount Nimba
report by Professor M. LaMotte 14-16
- 2. Situation Report-State of the Vegetation
by Professor J. Koechlin 17-19
- 3. Socio-Economic context
 - i. Report by J.F.Pascual 20-22
 - ii. Report by Gneney Dore 23-24
 - iii. Report by Abou Cisse 25
 - iv. Perspective from Village of Gbie 26
 - v. Report by Etienne Vernet (Collective 27-32
International Environmental Development) CEDI
 - vi. Guinean Point of View 33
- 4. History of Mineral Project 34-36
by Ibrahima Sory Traore
- 5. Evaluation Report IUCN 37-42
- 6. List of Participants 45

I. PREFACE

At the request of the World Heritage Committee, the World Heritage Centre organized a Mission to review the conservation status of Mount Nimba, a Site on the World Heritage in Danger List. With the cooperation of the Government of Guinea, UNESCO, and UNDP, the Mission took place from May 15 to May 30, 1993.

In addition, the individuals noted in the List of Participants (Annex) gave freely of their expertise and their time. The cooperation of all individuals was exceptional and in spite of long hours and arduous travel, a consensus was reached to maintain the site on the World Heritage in Danger List.

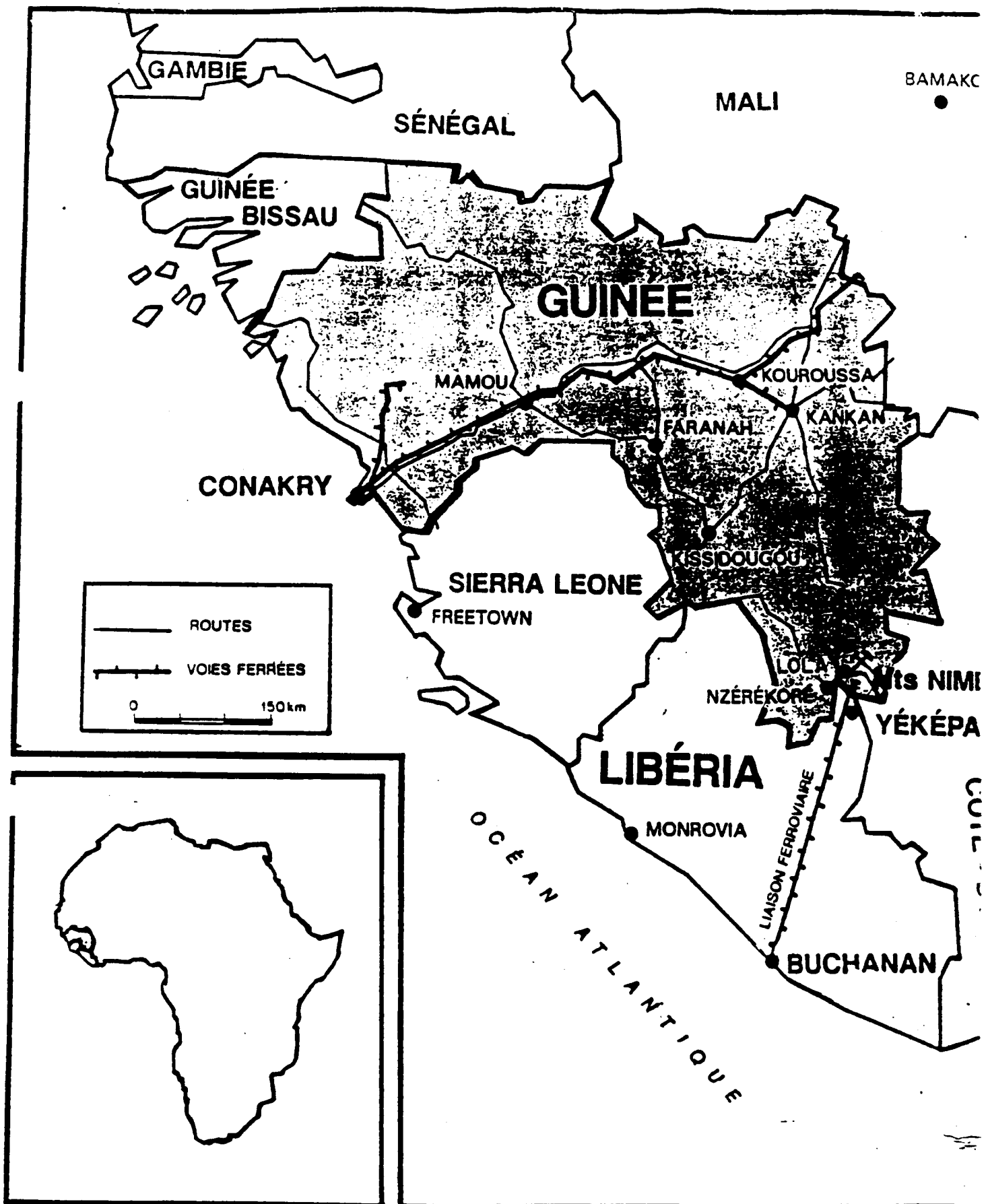
In particular, the Mission is grateful to Mr. J.F. Pascual and the team from the Mount Nimba Pilot Project. The execution of the Mission would not have been successful without the arrangements made by Mr. Pascual in cooperation with the Government of Guinea. The cooperation of the UNESCO Commission in Guinea was also a major contributor to the mission.

All other members of the team participated vigorously in the discussions and submitted timely reports which form the Annexes to this document.

The Mount Nimba World Heritage Site continues to meet the Criteria for World Heritage Listing. A new boundary has been proposed and it is the wish of the Mission that this be submitted by the Government of Guinea to the World Heritage Committee.

At the meeting of the Bureau, June 21-26, 1993, the basic recommendations of the mission were accepted and "Emergency Assistance" of \$30,000 was approved.

Harold Eidsvik
Senior Programme Officer
UNESCO World Heritage Centre



(iii)

SUMMARY

A. Objective of the Mission

The objectives of the mission were decided in accord with the 1992 decision of the World Heritage Committee and are as follows:

1. To evaluate the impact of the mining exploration project, the population problems, and other menaces weighing on the integrity and universal values for which the site was inscribed.
2. To recommend an appropriate boundary for the World Heritage in Danger site.
3. To identify the necessary measures to assure an effective and adequate management.

B. Composition of the Mission

Participating in this multi-disciplinary mission were:

- the representatives of the Guinean Government with Mr. Mohamed Sylla in charge, Ministry of Natural Resources and of the Environment; UNEP represented by Mr. M. Taal, specialist of the program for forest ecosystems; IUCN representative Mr. Mankoto, Vice President for West Africa; and as consultants with UNESCO, Professor Maxime LaMotte (Fauna) and Professor Jean Koechlin (Flora). NGOs were represented by Mr. E. Vernet, representing the CEDI (Collectif Environnement Développement International) which includes Greenpeace, WWF, Friends of the Earth and FNE. Three representatives of Guinean NGOs also attended along with Mr. J.F. Pascual, head of the pilot project UNDP/UNESCO Mount Nimba. The World Heritage Centre was represented by Mr. H. Eidsvik and Mr. B. von Droste, Director.

C. Events of the Mission

The mission spent several days on the terrain visiting various parts of the site, zones degraded by the mining exploration, and visiting several villages on the periphery, notably Gbie (22 inhabitants); Bakore (200 inhabitants); Thuo (1000 inhabitants of which 3/4 are Liberian refugees); Bossou (department of 2000 inhabitants, and seat of the Centre for Primatology, established by the Japanese), and Lata (300 inhabitants).

A meeting took place in Lola with the representatives of the refugees of the region (more than 40,000 in Lola) with the local authorities of the department and HCRE present.

Every day the participants of the mission met to discuss their observations and put together the basis of a report to be finished before the end of the Bureau meeting of the World Heritage Centre, June 21-26.

D. Principal Results

The fundamental results are represented by the precise map of World Heritage sites proposed by the Members of the mission which confirms the exclusion of the mining zone.

E. The mission concluded that Mount Nimba, continues to fulfill several criteria justifying its inclusion on the World Heritage list for the following reasons:

Criteria I : geomorphologic and geologic interests (proof of tectonic history of western Africa)

Criteria II: forest and prairie at different elevations produce a broad range of habitats with great biological diversity.

Criteria III: beauty and originality of the site (harmony of varied vegetation)

Criteria IV: considerable biologic diversity in the vegetation formations and presence of indigenous species of which the viviparous toad is one "Nectophrynides Occidentalis." Important role in the preservation of the great fauna.

F. Threats to the Site

Given the small area of the surface, around 17,700 hectares, and the demographic pressure of the surrounding area, the integrity of the site remains threatened. To add to the existing threats is the perspective mining which comes into immediate contact with the site. Another problem is the lack of administration responsible for management and protection. The mission has concluded that the site should remain on the World Heritage in Danger list for the following three reasons:

- a) insufficient institutional structure
- b) demographic pressure accentuated by the influx of refugees from Liberia
- c) impact of the eventual mining exploration

The Mount Nimba Range demonstrates the on-going forces of erosion over a geologic time period. The mountains are the last remnant of a major coastal uplift now surrounded by a peneplain.

G. Proposed Measures

i. Measures to surmount the precarious institutional structure

Only the existing pilot project of the UNDP/UNESCO assures temporarily a presence on the site. This limited means does not give enough protection to the site. The mission therefore

proposes the creation of a National Office for the management and protection of Mount Nimba. The mission equally recommends that an International Science Committee join this institution to reinforce the cooperation in the form of Man and Biosphere.

ii. Measures for the socio-economic situation around the site

The mission recommends that the Guinean Government give the greatest priority to the development of infrastructures such as education, health and communication in the region and to promote economic development. The experts wish to place demonstration projects in agriculture, animal husbandry, agro-forestry and fisheries to help satisfy the needs of the rapidly growing population, accentuated by the influx of Liberian refugees.

The mission equally sees the creation of an eco-museum as a priority that is indispensable in the education of hygiene, nourishment, management and protection of natural resources.

iii. Measures to take in light of the mining project

The mission insists on the necessity of producing another study on the detailed impact of the mine once the definite plans of exploitation are known.

The mission recommends that the Government of Guinea should request expert international aid in the preparation of an Environmental Convention to be negotiated with the mining company.

The meeting was pleased to note the offer of the mining company to the give sum of \$500,000 constant dollars per year for the conservation of the World Heritage site.

We were able to present the results of the mission to Drs. Dakoun Sakho, Minister of Natural Resources, Energy and the Environment before our return to Paris. He indicated his firm agreement and congratulated the mission for its excellent work. Thus, the World Heritage Centre will soon receive the confirmation of the new boundaries of the World Heritage site along with requests for international assistance under the World Heritage Fund for:

- creation of a planning director for the future national office of " Management and Protection of Mount Nimba;"
- request for training the staff and technicians;
- request for an expert to assist in the creation of the Environmental Convention which should be negotiated with the mining company "NIMCO"

We also had a brief meeting with the UNDP Resident Representative in Conakry, Mr. S. Dyomin, which focused on the difficulties of prolonging the pilot project UNDP/UNESCO for Mount Nimba,

(vi)

implemented by the Division of Ecological Sciences, the first phase of which ends in two months.

We underline the importance of maintaining this project as it is indispensable to the protection of Mount Nimba against the various categories of danger menacing the integrity of the site.

II. THE MISSION - BACKGROUND

1. The mission took place from 15 to 30 May, 1993.
2. **Participants** - Mount Nimba Mission, Guinea, May 1993

M. Maxime LaMotte, Professor, (fifty years of on-site research)
M. J.F. Pascual, Head, UNESCO/UNDP Mount Nimba Pilot Project
M. Jean Koechlin, Professor of Botany, University of Bordeaux, (Retired)
M. Etienne Vernet, CEDI, (Collectif Environnement et Dimension Internationale, (Paris-based NGO))
M. Mankoto, Vice-President IUCN, (Western Africa)
M. Bai-Mass Taal;, UNEP, Nairobi
M. Bernd von Droste, Director, World Heritage Centre
M. Harold Eidsvik, World Heritage Centre
M. Saramady Toure, Director, Nimba Pilot Project
M. Sidiki Kone, Nimba Pilot Project
M. Gheremye Dore, MIFERGUI
M. Ceoui Dore, MIFERGUI
M. Ibrahima Sory Traori, NIMCO
M. Abou Cisse, Regional Government , N'Zerokore
M. Mamadou Bella Diallo, ASSONANE, NGO, Guinea
M. Mamdou Sylla, Mrnee, Guinea

Note: All participants were not present for the full duration of the mission, in particular, M. Mankoto, M. von Droste and M. Taal.

3. Site visits

The Mission began with a review of satellite and aerial photographs as well as a 1:40,000 map cover of the area. The present conditions relating to the World Heritage site, the potential mining operation, and agricultural as well as demographic pressures were reviewed.

Participants spent two days in the alpine areas reviewing the potential boundaries of the World Heritage site in relation to previous degradation due to mineral exploration and potential World Heritage values which could be retained or might be lost. A third day was spent reviewing the requirements for operational facilities and waste disposal sites for mine tailings, primarily in the Valley of the Zie River. Subsequently, two days were committed to reviewing the park boundaries and adjacent agricultural development surrounding the Park.

In the Thuo area, it was possible to overview some of the impacts of the former LAMCO mine in Liberia.

Each field visit was followed up by late afternoon meetings to discuss the various perceptions and to review boundary options.

4. Village Visits

Initial meetings were held with Prefecture Officials in N'Zerekore and Lola. Meetings with villagers were held in Gbie (200 inhabitants), Lbileta (300 inhabitants), and Bossou (2,000 inhabitants). Discussions were also held with representatives of the Liberian Refugee Community.

5. Preparation of recommendations

A small Task Force including government representatives, NIMCO, the NGO representative and the World Heritage Centre worked together to prepare recommendations to be discussed by the mission as a whole.

6. Local debriefings

On completion of the mission a representative group from the mission met to debrief the Minister, Dr. Dakoun, and Mr. Sakhou, Minister of Natural Resources, Energy and Environment. The UNDP Resident Representative in Conakry, Mr. S. Dyomin, also attended a short airport meeting with Mr. von Droste.

III. MAIN RESULTS - WORLD HERITAGE VALUES

1. Background

The site was accepted by the World Heritage Committee in 1981 on the basis of Criteria I and III. There is no doubt that the site continues to meet these criteria. In addition, the site meets Criteria II and IV.

2. State of Conservation 1993

i) The geomorphologic characteristics (criterion (i)) are obviously unchanged and remain theoretically and didactically of the greatest interest.

ii) The milieu of vegetational diversity (criterion (ii)) included in the site remains considerable. The only areas excluded are the high prairies of the ridge and the eastern slopes of Pierre Richaud and the high valleys of Zie and of Gouan which are a part of the mining zone. The site includes a large variety of mountain prairies only a fraction of which were affected by prospecting works going over the actual mining zone. It also includes the forests of the original natural reserve, the sloping plains, ravines and the southern ridges (see Annex on vegetation).

iii) Concerning the aesthetics, criterion (iii), noticeable modifications have already been produced. Two series of houses built for prospectors were constructed on the Zouguepo plateau and, higher up, a technical base with an atelier, houses, electric generators, and even further up, a few houses and a

laboratory. On the northern part of the mountain chain in particular, there are slopes with numerous bore-holes and sinks.

There are clearings everywhere along with fallen rock caused by man, trenches, and cemented diggings.

These scars on the countryside made by prospecting works (1970-1978), were usually limited to the zone which would eventually be mined thus, excluded from the World Heritage site.

The most outstanding sites were not touched: the abrupt slopes on the eastern side, the important ridge of the central axis and of Mount LeClerc, the deep valley forests of Ba, of Ga, of Diougou and of Ya, and the waterfalls which run the sides of the mountain. The two southern tiers of the chain remain completely intact and the entire mountain chain remains something exceptional in West Africa, justifying perfectly its inscription on the World Heritage List.

iv) As to the indigenous animal species (criteria (iv)), none exist in the northern part of the ridges as it is drier and less favourable to hydrophile species (large majority of indigenous species). All are found in the rest of the mountain chain. The viviparous toad, in particular, is little represented near Pierre Richaud and their population is not abundant except around Mount To and Signal Semprere. Where mining exploitation is foreseen, there is only 1/20 of the total population.

The proposed limits for the site cover all the species of indigenous orophile fauna and the better part of their population.

3. State of the Vegetation - 1993

The vegetation of Mount Nimba Reserve, with its diversified combination of ecosystems of prairies at a high altitude represents an ensemble of great originality in the world. Its value as a World Heritage Site is inestimable due to the general degradation of the forest vegetation in western Africa, particularly the forests of Guinea.

The different formations of the reserve: foothill savannas, mesophile forests, and ombrophiles at low altitude, forests and prairies in the mountains, are generally in a satisfactory state of conservation and equilibrium with the natural conditions. However, they have suffered and are still suffering certain aggressions:

The limits of the reserve are still not respected where agricultural pressure is strongest (Gbie, Seringbala and Thuo especially).

Damage caused by mining prospecting (1969-1972 and 1977-1978): construction of housing on the foothill savannas; construction and use of several dozens of kilometers of road, and different constructions in the Pierre Richaud region. Zones bared and excavated are colonized by secondary vegetation. At the lower

altitude some lumbering of Kotschya, Dissotis, Melinis species which form the pure population, has taken place. This botanic disturbance is limited. But surveillance should be continued. This secondary vegetation helps to prevent erosion and slides and in this sense it is beneficial. It should also be noted that this secondary vegetation is native to the site.

It should be stressed that the state of the reserve is precarious: the pressure of farmers confronted by a scarcity of land is increasingly accentuated, weighing heavily on the reserve.

Only an efficient system of surveillance, improvement of traditional agricultural practices and the creation of new employment sectors can remedy the situation.

4. The Integrity of the Site

While there was no doubt among mission members that the site meets World Heritage criteria, there remains a concern about the site's integrity:

i) an effective management structure and presence beyond the Nimba pilot project does not exist;

ii) components of a management plan are in place; management facilities, protection plan, research programme. Other than the overall plan for the Biosphere Reserve site there is no specific management plan for the World Heritage site.

Concerns raised by the IUCN (Sayer Report, 1992) have been largely overcome by the inclusion of most of the northern sector in the World Heritage site.

Funding in the short-term remains an issue; in the longer term adequate funding will be available from mining concessions specifically designated for conservation.

Until an effective management unit is in place, as recommended by the mission, Mount Nimba should remain on the List of World Heritage in Danger.

IV. PROPOSED BOUNDARIES OF THE WORLD HERITAGE SITE

1. The 1981 Nomination (Map No.I)

There were several technical errors in the 1981 nomination which led to confusion and misunderstanding. Fortunately, or unfortunately, all parties to the nomination share some of the errors (i.e. the Government of Guinea, the World Heritage Secretariat, IUCN and the Committee). The following errors were made:

- i) the latitude 7 14' to 7 23 N was incorrect; it should be 7 23 to 7 43' N;
- ii) the longitude of 10 29' to 10 40 W was incorrect; it should read 8 19' to 8 30'W;

- iii) the decree of 5/7/1944 was made by the former Colonial government and thus included 5,200 hectares in the Ivory Coast, which should not have been included in the Guinean nomination;
- iv) the 1981 nomination of 17,130 hectares did not include 2,160 hectares added to the site by decree in 1955. Thus the total was 19,290 hectares.
- v) maps submitted with the 1981 nomination were not clear with respect to the "exclusion of the northern (septentrionale) portion of the site". Thus boundaries of the site were not clear and led to considerable confusion.

2. The 1991 Revised Nomination (Map No II)

On July 24, 1991, the Government of Guinea signed a revised nomination of the Mount Nimba World Heritage site. The Government, by proposing a reduction of the site by 4,600 hectares clarified its perspective that the northern parts of the site including the mineralized zone, were never intended to form part of the site.

This revised nomination was reviewed by IUCN and the Committee; however, it was IUCN's view that the proposal would have a significant impact on the qualities of the World Heritage site and thus its integrity could not be assured. The Committee did not accept the revision proposed.

3. Mineral Potential and Background (Maps No V, VI, and VII; Annex-Report by Traore)

The presence of a major iron-ore body on Mount Nimba has been suspected since 1944. A potential of some 500,000,000 tons of 66% iron-ore was defined in 1979 before the area was nominated in 1981.

In 1962 the LAMCO Mines in Liberia began operation. During the period 1962-1990 some 250,000,000 tons of ore were exported. The Mount Nimba ore body is about 20 km north of the former Liberian mine. The area was intensively prospected in 1969-1971 (funded by UNDP) and again in 1977-1978. At \$17 per ton the gross estimated value of the site is some \$8 billion. Cost of mining is estimated at \$9 ton or \$4.4 billion. There is no doubt that this information was available to the Government at the time of the nomination.

The area incorporating the mineral body on Mount Nimba is clearly defined (see Maps V, VI, and VII) and both its location and value were known at the time of the 1981 nomination. Whether the mine will become operational or not is a moot point. The ongoing war in Liberia presents a major barrier to any international venture at this time.

4. Proposed Boundaries 1993 (Maps No III, IV, VIII and IX)

The interdisciplinary mission carried out an extensive file review as well as an on-site evaluation of: (a) the original strict Nature Reserve; (b) the area proposed by the Government

in 1981; (c) the area of the Biosphere Reserve; (d) the area accepted by the World Heritage Committee in 1981 and the proposed boundaries of 1993.

(a) The area of the strict Nature Reserve is, with the exception of the mineral exploitation and service area, remarkably intact. After almost fifty years of conservation, the majority of the forests and alpine vegetation are intact. Incursions within the Reserve by agriculture are restricted and limited in number. The natural pressure for additional agricultural land remains a significant threat.

Poaching of wildlife for family sustenance is persistent and ongoing. It is not a major threat to the World Heritage values of the site.

(b) The area proposed by the Government in 1981 from their perspective excluded the northern sector of the Park (Map No.II). It is recommended that the Committee accept this historical perspective.

(c) The area of the Biosphere Reserve included the area indicated on Map No.X as the "Core area" of the Biosphere Reserve. An extensive buffer zone as well as a zone for co-operation incorporates a large portion of the Cavally Basin in which Mount Nimba is situated. It is recommended that the World Heritage Centre work with the Biosphere Reserve programme to further conservation and socio-economic development in the region as a mechanism for protecting World Heritage values.

(d) The area of the World Heritage site accepted by the Committee should be amended to respect the views of the Guinean Government as expressed in its 1991 nomination, provided that the Government is willing to accept the boundaries proposed by the 1993 mission.

5. The 1993 Proposed Boundaries (Map No. IX)

The mission focused much of its attention on the northern (septentrionale) portion of the Mount Nimba Range. This is the portion which has been subject to misunderstanding and controversy. It contains the potential iron-ore body as well as mountain forests and high altitude prairie. Much of the area has not been degraded and should be added to the World Heritage site.

The proposed site includes (Map IX);

Surface area in Guinea.....12,540 ha

Surface area in Ivory Coast.....5,200 ha

Total surface area..... 17,740 ha

Excluded from the site:

Zone for mineral operations..... 1,550 ha

These proposed boundaries have been unanimously accepted by all participants in the mission. It remains for the Government of Guinea to submit a formal revision to the boundaries of the site.

6. Special Notes Regarding the Boundaries of the Excluded Area (Maps IV, V, and VI)

Mount Pierre Richaud

The boundary in the vicinity of Mount Pierre Richaud was subject to considerable debate. In a northerly direction representatives of the mining company agreed to restrict the exploitation. Secondly, the question of changing the profile of the crest may make a serious impact on local wind/weather patterns. There is a need for more detailed environmental study prior to any major changes.

The Conveyor

Without detailed engineering data, it was difficult to define the "service area" for the Conveyor. It was agreed that the boundary would be as per Map IV on the crest of the hill south of the Zouge. However, it was also agreed that this could be modified for fully justifiable technical reasons within the degraded zone.

V. URGENT ACTIONS REQUIRED

1. The Mount Nimba Pilot Project

The Mount Nimba pilot project, a joint venture of UNDP, UNESCO, and the Government of Guinea, has been the key "management authority" present on the site. Its continued presence is essential until a new management regime is in place. Without the presence of the pilot project staff there is little doubt that the present residential and administrative facilities would have deteriorated and that poaching and agricultural incursions into the Park would have been more numerous.

At the time of the mission it was not clear that the pilot project would continue. It may be essential to provide some bridging funds to ensure a maintained presence on the site.

2. Legislation

Significant changes in the management objectives of the Mount Nimba Strict Nature Reserve have occurred. The establishment of the Biosphere Reserve, the World Heritage status and the proposed Environmental Convention all have an impact on the management of the area. Legislation should be reviewed to ensure that it is adequate for management purposes.

3. Establishment of Autonomous Management Authority

The protection of the World Heritage site, its integration with the management of the Biosphere Reserve and its integration in regional development issues requires an on-site management unit with adequate staff to carry out administration, maintenance, protection and education functions. This does not currently exist.

It is proposed that an autonomous body, "Mount Nimba Management Authority", be established under the office of the President of the Republic. The Authority should be supported by an advisory council which would include senior government representatives, local and regional government specialists as well as representatives of the mining company. An expanded form of the current Biosphere Reserve Management Committee may serve this purpose.

The mission recommended that the World Heritage Centre and IUCN provide technical advice should the Government request it. The establishment of a Management Authority is a matter of urgency and should be treated as a high priority.

VI. INTEGRATION IN SOCIO-ECONOMIC CONTEXT

It is clearly evident that the region is lacking in infrastructure: roads, water systems, sewage disposal, medical facilities, schools, communications.

The high population density of 70-100 persons per sq. km. is placing intense pressure on land, agricultural and forest resources.

The Government of Guinea lacks the financial resources and ability to launch major initiatives in the region.

Meetings with local communities focused on different issues. Clearly there is no unanimous opinion with respect to the best solutions. Improved access, more agricultural land, the "mine", better health and education services were seen to be important.

If the World Heritage site is to be protected it must ensure that its benefits are seen to be of importance to the local people. It must play an important role in "rural integration." It can do this through the Nimba Pilot programme and through integration of management efforts with the Biosphere Reserve.

The mechanisms for "rural integration" are proposed in the "Recommendations." They include an extension service linked to "Women's Institutions" and to an Eco-Museum at the site of the present research centre (Ziela) along with smaller centres on "Eco-Education-Protection" at guard posts.

VII. MINERAL POTENTIAL AND INTEGRATION

1. Background

The first mining prospecting started in 1957. Exploitation by bore-holes and sinks were done in two stages: 1969-1972 with the participation of the UNDP; and from 1977-1978 by an American company, Kaiser, which performed a feasibility study on the project. More than 17,000 meters of bore-holes, 1,270 meters of gallery, and about 25km of access roads to the construction were constructed before enlisting Mount Nimba on the World Heritage List in 1981. In 1973, the Nimba company MIFERGUI was created to exploit the iron-ore body (Pierre Richaud, Sempere, Grands Rochers, Chateau).

Since 1986, the mining project has gained importance due to the exhaustion of the Liberian mine. A joint company called NIMCO was created in 1990 with the participation of Guinea, Liberia and private investors.

The mining project has made important modifications in technological concepts to help protect the variety of ecologic wealth of Mount Nimba, notably:

- building a railroad with the station being outside the reserve;
- concentrating debris in one valley;
- protective measures downstream of the hydraulic reserves;
- active participation of the government conservation officials;
- participation with the Planning Director of Regional Development.

Environmental measures will cost an estimated 10.5 million dollars, the price to pay for clean mining, as the mining project recognizes its responsibility in the natural cultural and social environment.

2. Environmental impact statement - NIMCO, 1990

From the perspective of the mission:

The 1990 Environmental Impact Study by B.C.E.O.M. provides a sound basis to make the major decisions related to the World Heritage site and the potential impacts of the mining operations.

Specific and more detailed impact studies will be required as more technical details become available with respect to the mining operations, e.g. the Conveyor.

With the cooperation and participation of the NGOs, the "Environmental Convention" (10 June, 1991) between the Government of Guinea and the mining company is to be re-negotiated to reflect the recommendations of this mission.

3. The mission noted with satisfaction correspondence between the Government of Guinea and NIMCO respecting an annual grant of \$500,000 for conservation once the mine becomes operational. The mission indicated that this, as a base-level, should be in constant dollars.

VIII. RECOMMENDATIONS

The multidisciplinary mission that took place on Mount Nimba from 15 to 30 May, 1993 gives the Committee the following recommendations for the attention of the Government of Guinea and the UNDP:

A. The Guinean Government

1. After examination of the documents and after field visits, the mission declared that at the time of inscription of Mount Nimba on the World Heritage List in 1981, the damage caused by mining prospecting on the northern part of the range was already

visible. Therefore, the mission recommends to the Government of Guinea to accept the inclusion to the World Heritage site the parts of the northern zone not concerned with the mining activities and to re-address and send to the Committee the new request for inscription of the site.

2. In the institutional plan, the mission welcomes the creation of the pilot project by the Guinean Government whose role was essential in the last several years in protecting the site as well as in all endeavours seeking to promote the improvement of living conditions in rural areas. It should play an even greater role in the second phase for the construction of a public establishment. In light of this, the mission recommends the creation as soon as possible of a Protection Office of Mount Nimba run by an inter-ministry team and under the President of the Republic.

3. The mission also congratulates the Government's decision to ratify the Environmental Convention with the mining company in order to minimize the environmental impact of the mine on the World Heritage site. The Mission therefore recommends that the World Heritage Committee support the Guinean Government in seeking association with UNDP, UNEP and other international agencies.

NGOs, national and international, should be associated with all stages of this programme and follow the environmental convention to be signed by the government and the mining company.

4. The mission recommends that the mining company provides financial support for the promotion of integrated rural development in the Cavally Basin and for the protection of the environment, particularly of the World Heritage site.

5. The mission recommends that the detailed impact study be carried out with the mining project engineering study so that all environmental consequences be identified and taken into consideration before mining begins. This impact study is to be financed by the mining company in conformity with the Guinean environmental code.

6. The mission accepts that the northern part of the Pierre Richaud Range be maintained in the mining zone but desires that part be left at least temporarily in its current state from the north latitudinal coordinate 850,300. We fear that with lack of sufficient studies, work on the ridge from this point would cause consequences detrimental to the climate as recommended in the environmental evaluation (Map VI).

7. That all debris from mining be disposed of in Zie Valley which shall be prepared before mining begins: retaining walls and basins. In particular, no debris be placed near the eastern slope during construction and mining.

8. The mission accepts that the boundary of the World Heritage site in the region corresponding to the Conveyor is situated on the ridge line of Zougne. At any time, this limit may be modified for obvious necessary technical reasons up to the degraded zone.

9. In approving the strategy of protection foreseen by the Biosphere Reserve Management Plan, the mission recommends that the Guinean National Committee for MAB reformulates and implements this management plan as soon as possible, in conformity with the precisions specified for the boundaries of the World Heritage site, considered as the central area of the Biosphere Reserve of Mount Nimba.

10. That the Mount Nimba Protection Office is responsible for setting up demonstration projects in new agricultural techniques by transferring, evaluating and applying knowledge already acquired in these domains in other regions, to the pilot projects and the public awareness work carried out with the participation of the local people.

11. That the villages surrounding the World Heritage site which are in a particularly critical situation and which consider the site as a hindrance, be given first priority in benefiting from these actions.

12. That the integrated development actions be particularly geared toward the following:

- intensifying and diversifying agricultural products by introducing new techniques that are more effective: lowland cultivation, agro-forestry, crop rotation, better fallowing, market-gardening, etc..
- improving production and marketing of saleable products (coffee, coconut oil...)
- development of animal products: poultry, certain cattle breeds, raising of certain wild animals for fur, fishing, etc...
- forestry: reforestation of disturbed slopes and management of flowing hydrologic basin resources into firewood and lumber.
- improving slopes and combating erosion
- upgrading and developing traditional arts and crafts.

13. Recommend to the Guinean Government that priority be given to developing the roads which are already under construction in the Guinean forest to provide better access to the villages in the Nimba area.

14. Recalling the spirit of the Rio Declaration, and considering the document entitled Agenda 21 as a strategic document in achieving the objectives of this Declaration, the mission recommends that the Guinean Government adopt Agenda 21 and the Biodiversity Convention as a general strategy for an integrated ecosystem management of Mount Nimba.

B. United Nations Development Programme (UNDP)

15. Aware of:

- on the one hand, the value of the Government pilot programme's contribution in developing an efficient long-term process for the conservation of the World Heritage site, and on the other, establishing the bases for the rational management of natural resources necessary for sustainable development in the zone of influence of Mount Nimba;

- the importance of the participation of UNDP in financing the pilot project, the mission highly recommends to the UNDP the following:

- (a) the termination of the pilot project, in absence of any other structure able to assure the Reserve's protection, would prove detrimental to the balance of the human and natural milieu of Mount Nimba and the potential economy of the region;
- (b) to follow up on the efforts to implement the next phase;
- (c) that the pilot project activities to be implemented with UNESCO and in collaboration with other international agencies (FAO, UNEP, etc...) be oriented toward the following priorities:
 - creation of a public establishment, serving as an inter-ministerial office for environmental protection, management and conservation of natural resources (institutional and practical aspects) initiating international legal links (World Heritage Centre, NGOs and international organizations);
 - analysis of the human and environmental impact of the iron-ore mining project;
 - creation of a demonstration farm;
 - integrated rural development of the zone of influence of Mount Nimba with primary consideration given to the needs of the people living around the World Heritage site;
 - educate and sensitize the population, particularly the women and children;
 - participation of the local authorities and others in the development of the region.

Mount Nimba, 27 May, 1993

SUMMARY OF MAP DATA

WORLD HERITAGE SITE Mount Nimba: Natural Heritage Site

Multidisciplinary mission to evaluate the site (Nimba, Guinea 15-30 May, 1993)

- I. Surface area of the site recognized by the World Heritage Committee in 1981 at the date of inscription, not in accordance with Guinean Government perspective.
17,130 hectares

(surface as per the 1944 Decree for the site in both Ivory Coast and Guinea)

Actual surface area at the time of inscription: 19,290 hectares* (see Map I)

(the 2,160 hectares that were added in 1955 to the surface area of the Nature Reserve were not taken into account by the Committee)

- II. Surface area proposed by the Guinean Government in 1991: 9,560 hectares, (see Map II). Area not accepted by the World Heritage Committee.

(bringing to 14,760 hectares the surface of the transfrontier site which has all the original botanical characteristics with a reduction of 13.84% in relation to surface area (original zone + damaged zone) accounted for by the World Heritage Centre in 1981)

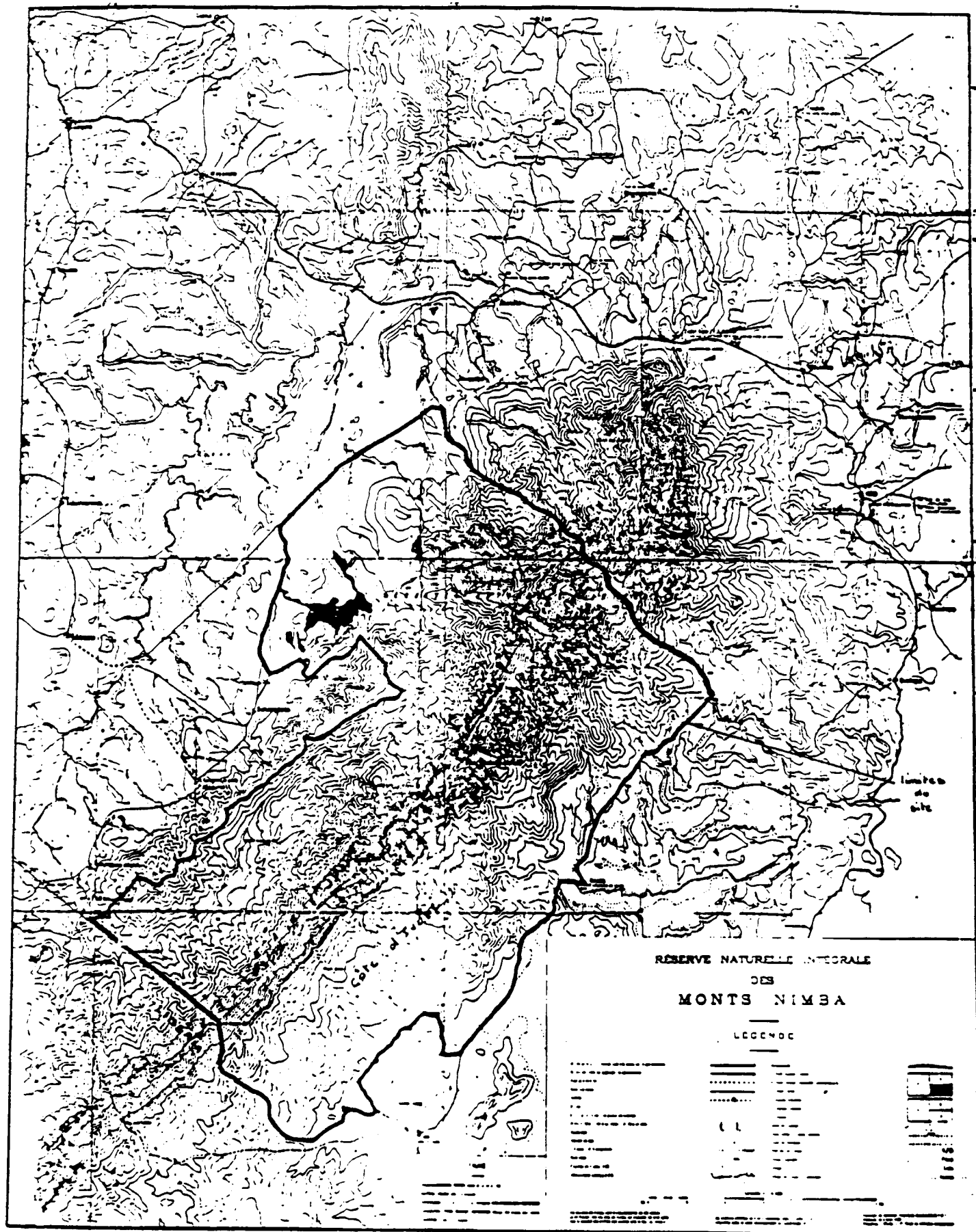
- III. Surface of Mount Nimba Range region reserved for mining activities (see Maps V, VI, VII):

1550 hectares

- IV. Surface of the World Heritage site of Mount Nimba (Guinea) and the Ivory Coast, as proposed by the multidisciplinary mission (see Maps VIII and IX):

17,740 hectares with a Guinean surface of 12,540 hectares and Ivory Coast surface of 5,200 hectares.

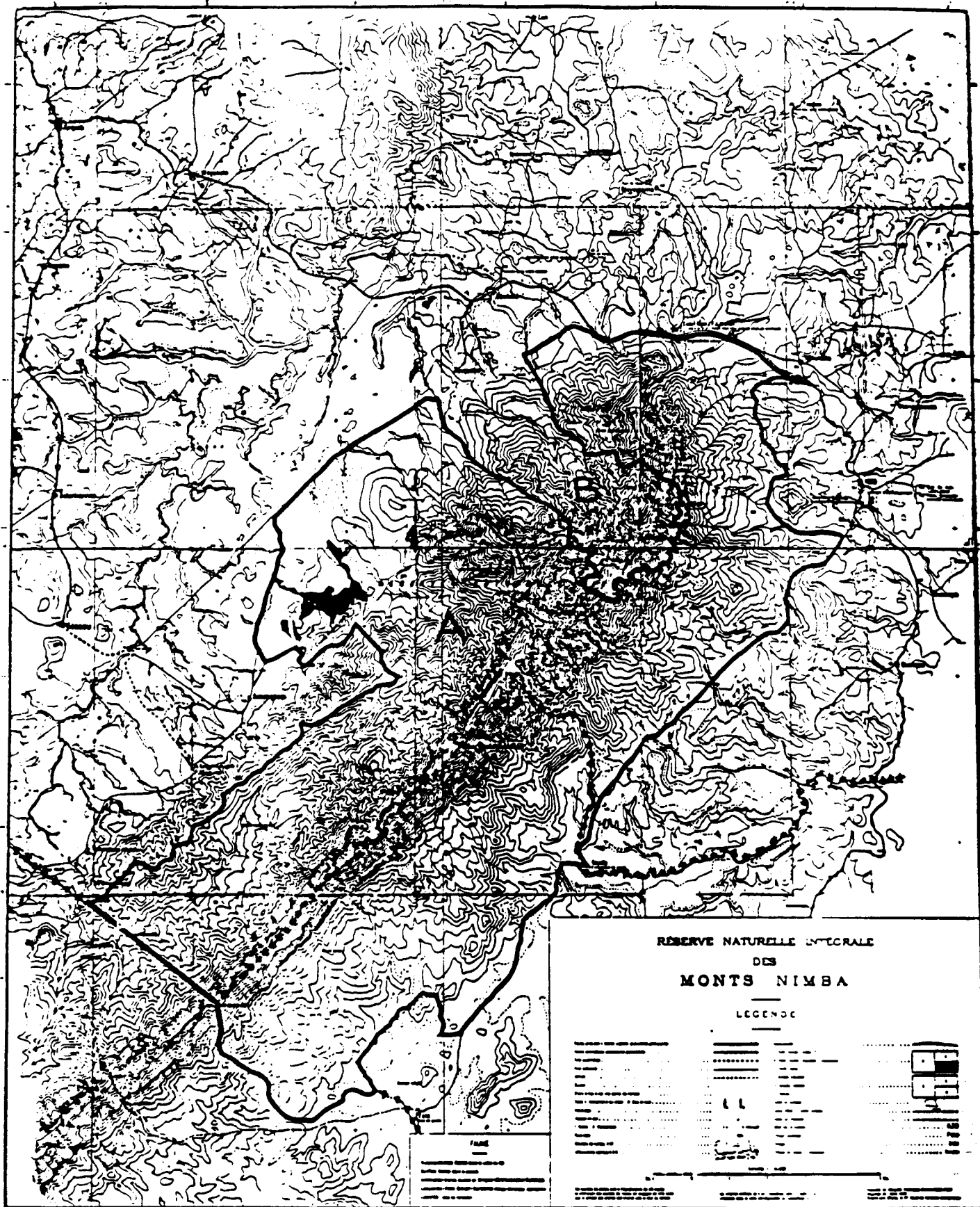
- (i) Surface indiquée dans le formulaire d'inscription présenté par la Guinée et répertoriée: 17 130 ha (en réalité cette surface correspond à celle de la surf. de la réserve naturelle intégrale qui s'étendait sur la Guinée et la Côte d'Iv en 1944).
- (ii) Surface réelle obtenue par planimétrie de la carte: 19 290 ha.



CARTE II:

Carte du site du patrimoine mondial, tel que proposé par la Guinée en juin 91.

Surface du site: 14 760 ha (Guinée + Côte d'Ivoire),
Surface du site en Guinée: 9 560 ha.

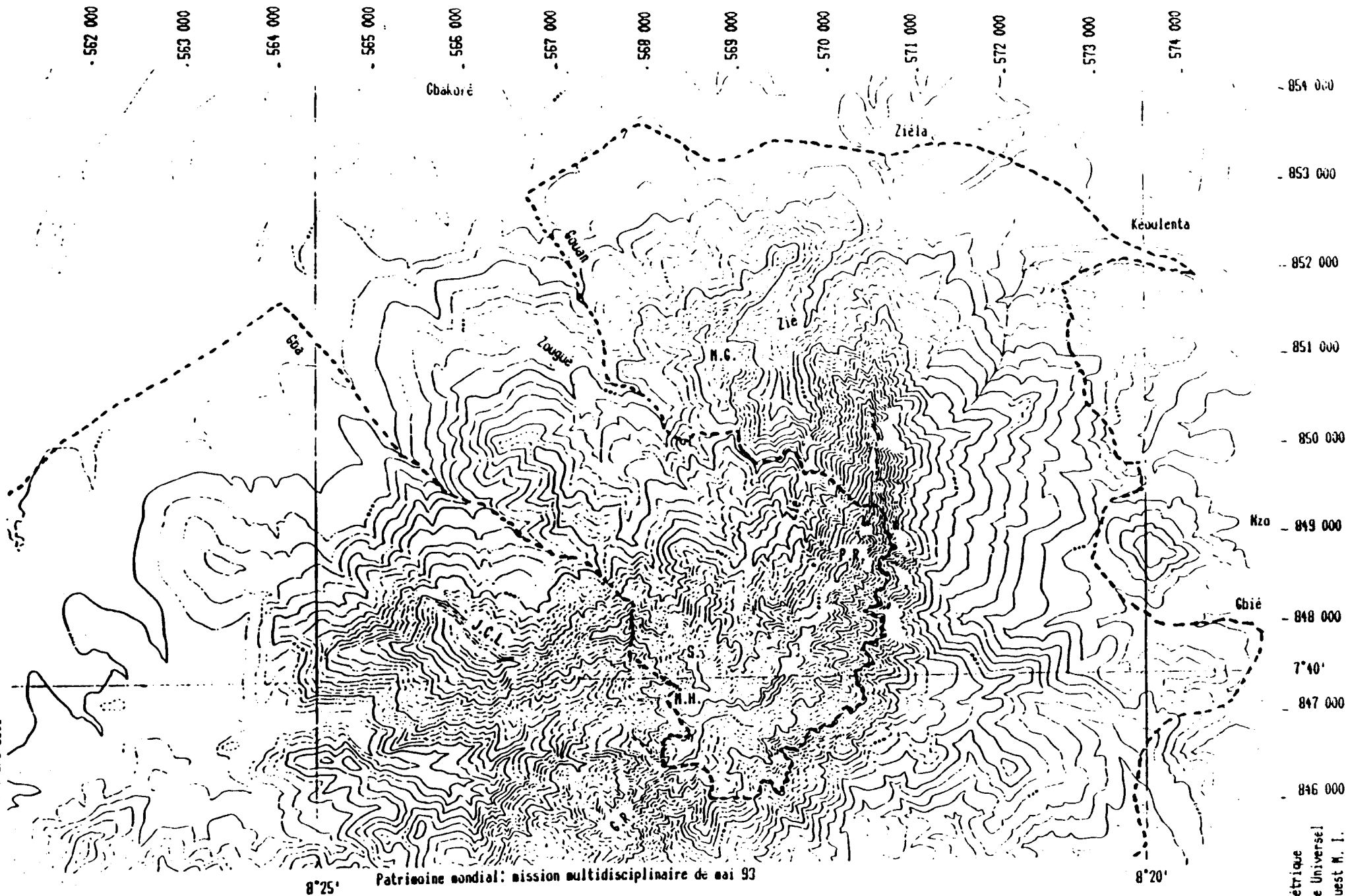


CARTE III:

Carte des régions naturelles de la chaîne des monts Nimba en Guinée et en Côte d'Ivoire.

A: aire présentant les valeurs botaniques originelles en 93.

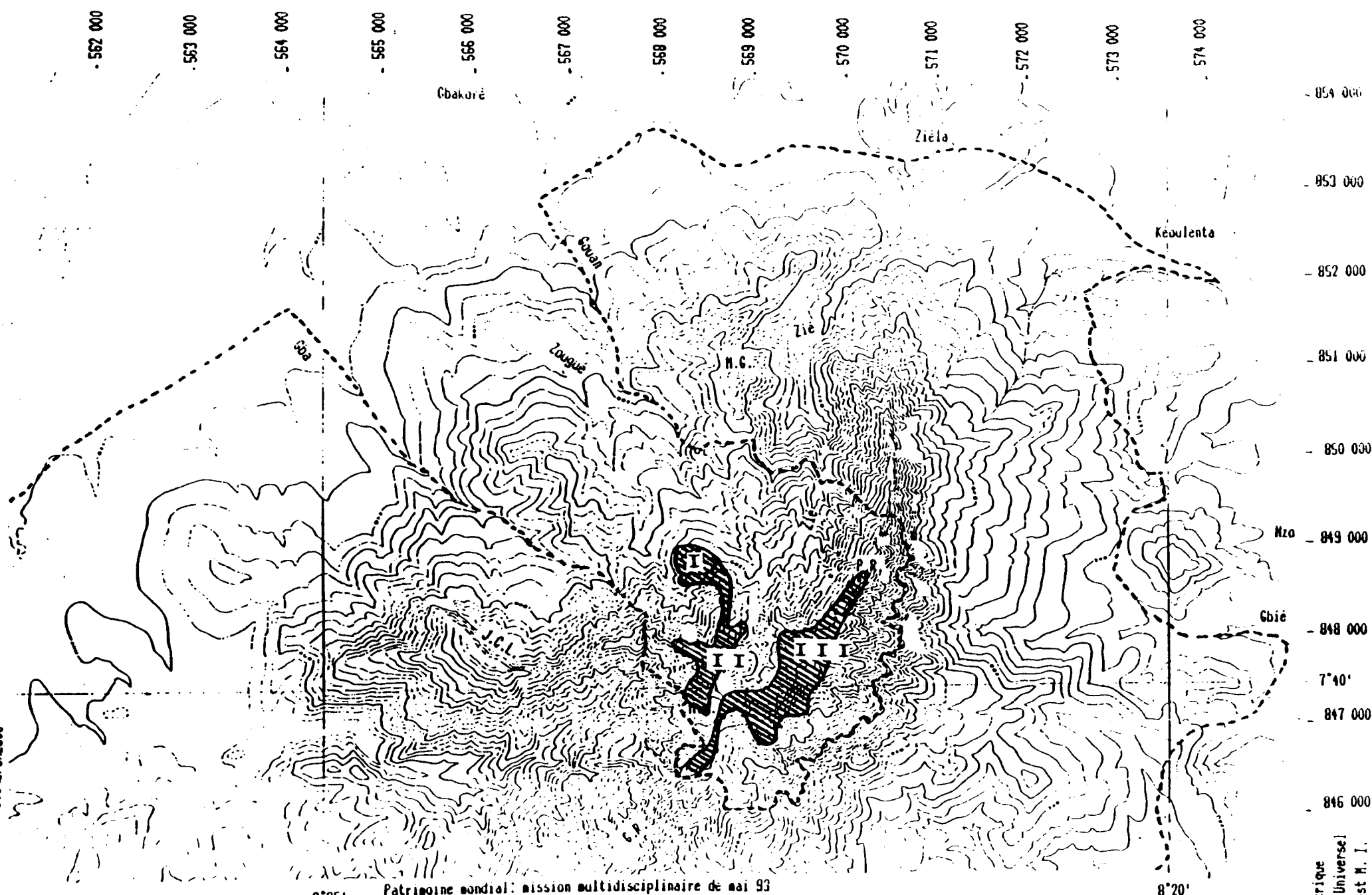
B: zone dégradée par les prospections minières avant 81.



CARTE IV:

Carte topographique de la région septentrionale du site du patrimoine mondial des monts Nimba.

(----: limite de l'aire présentant les caractéristiques botaniques originelles)



CARTE V:

8°25'

Patrimoine mondial: mission multidisciplinaire de mai 93

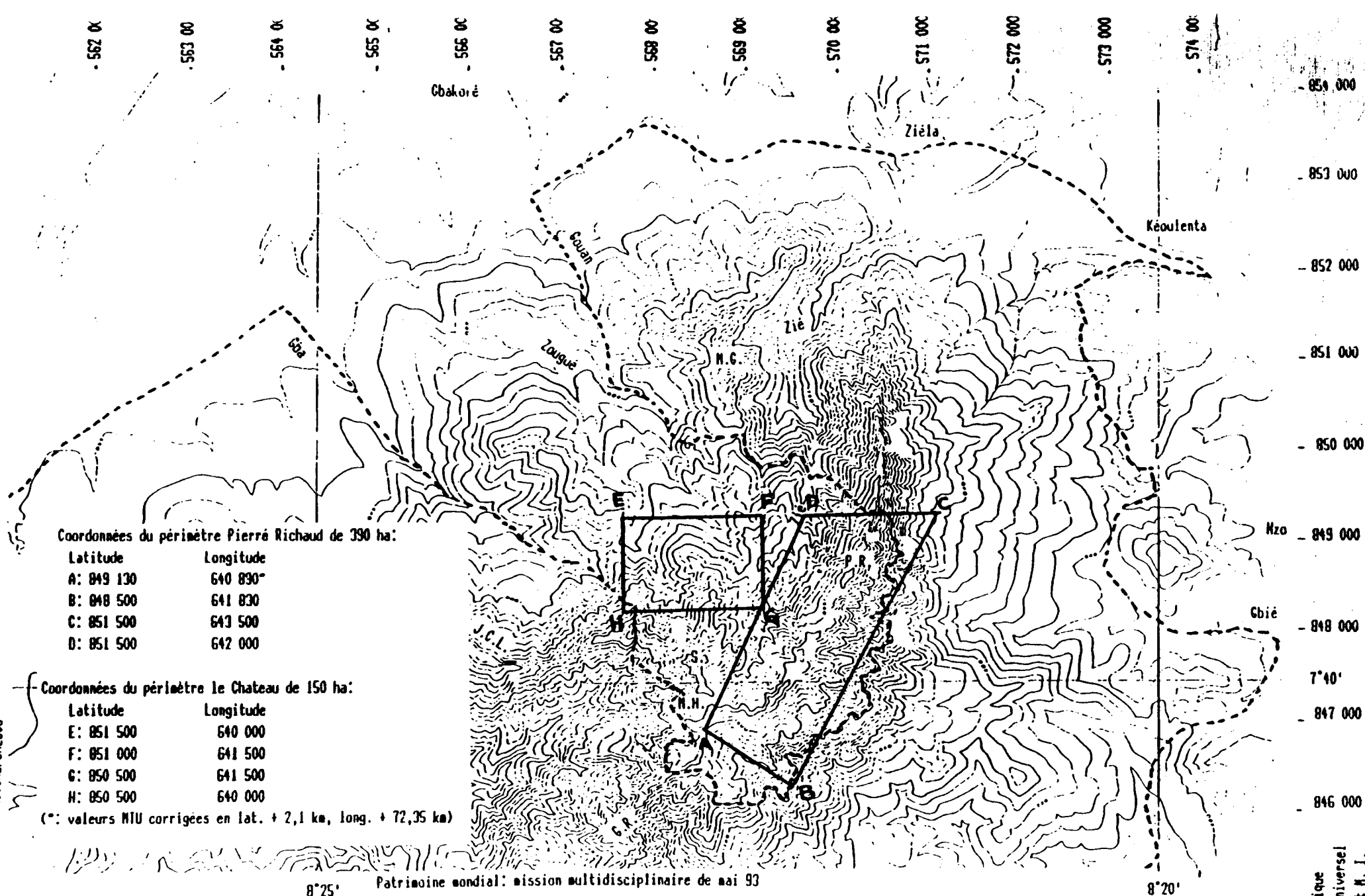
8°20'

Carte de localisation des gisements de fer dans la région septentrionale des monts Nimba.

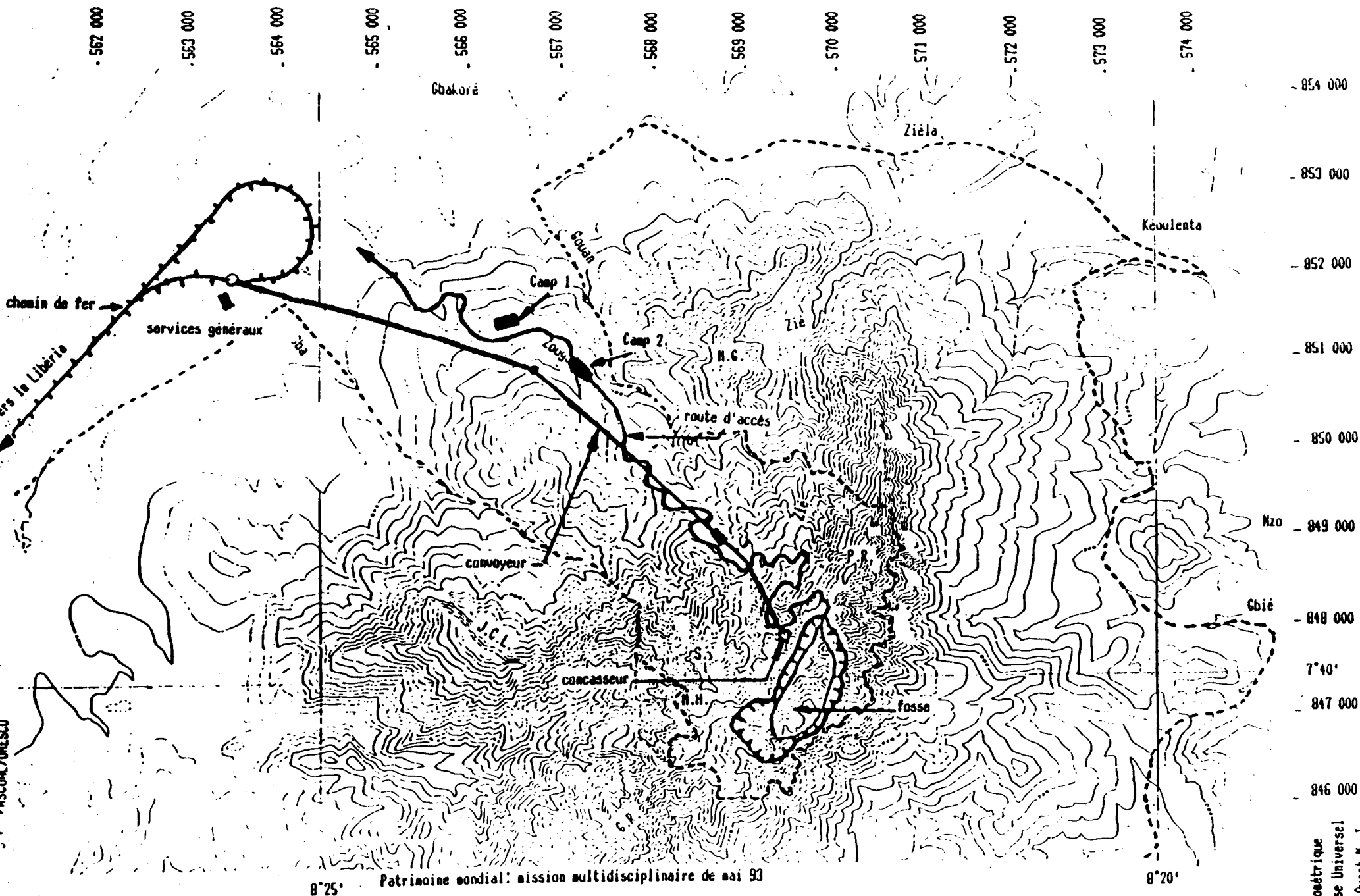
(—: limite de l'aire présentant les caractéristiques botaniques originelles)

I: Gisement le Château, II: Gisement Sempéré, III: Gisement pierré Richaud.

Echelle kilométrique
Projet Transverse Universel
1:20', N. 25° Ouest M. I.

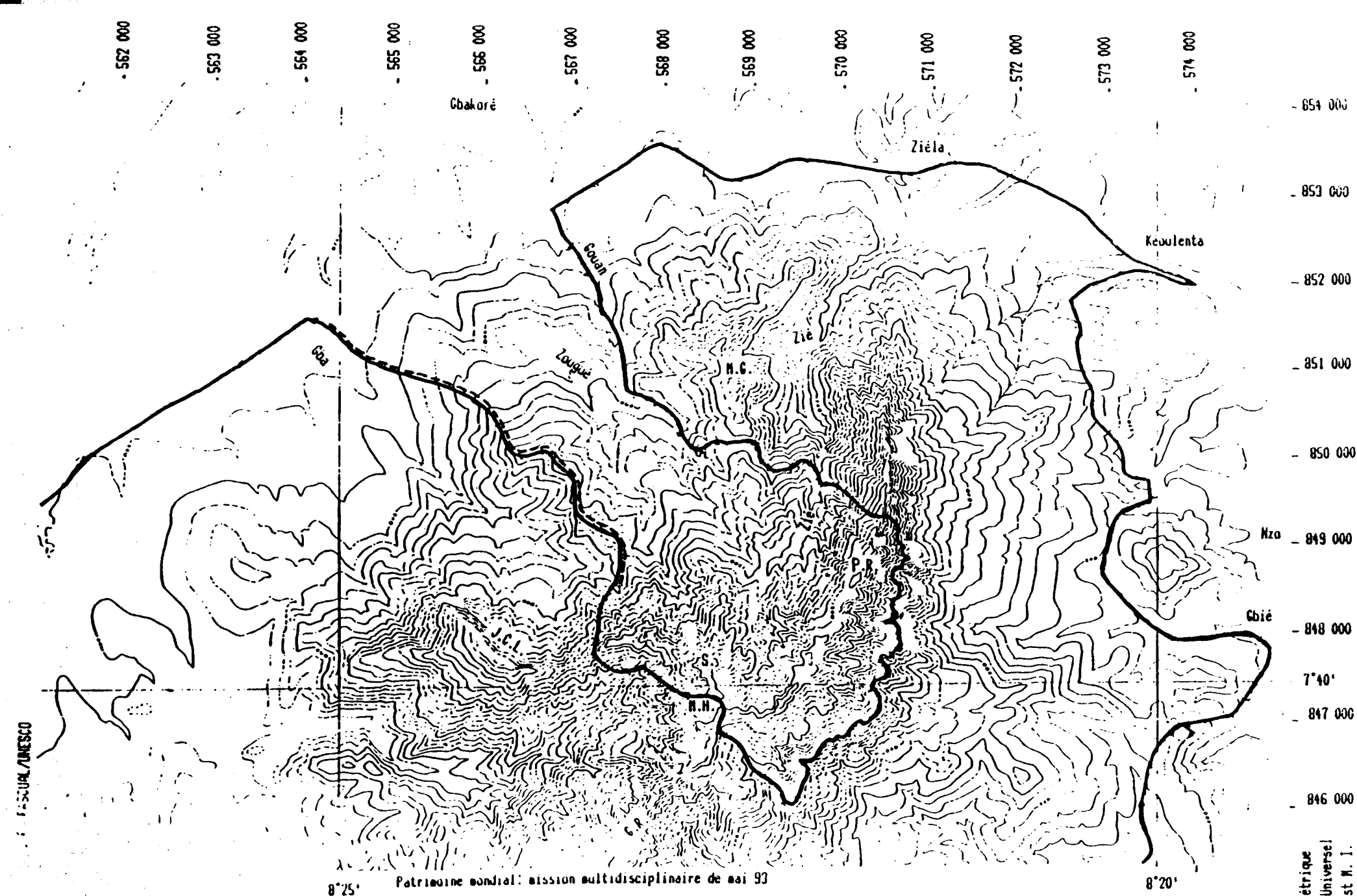


CARTE VI: Carte de localisation du périmètre d'exploitation de la société Nimco Ltd (décret D/92/178 du 6 août 1992) d'une superficie de 540 ha dans la région septentrionale de la chaîne des monts Nimba.
(---: limite de l'aire présentant les caractéristiques botaniques originelles)



CARTE VII: Carte d'implantation des infrastructures du complexe minier dans la région septentrionale de la chaîne des monts Nimba selon le projet final de Nimco Ltd.
 (----: limite de l'aire présentant les caractéristiques botaniques originelles)

travaille kilométrique
 cator Transverse Universel
 L=0°, N=9° Ouest M. I.



CARTE VIII: Carte topographique de la région septentrionale du site du patrimoine mondial des monts Nimba, tel que proposé par la mission multidisciplinaire.

(—: limite du site du patrimoine mondial)

ANNEX 1

The Value of Mount Nimba as a World Heritage Site by Professor M. LaMotte

A. The Primitive State of Mount Nimba

In its primitive state and because of the 1944 establishment of the Integrated Natural Reserve protecting the area, Mount Nimba has reunited an ensemble of characteristics making it particularly worthy of counting amongst the other World Heritage sites.

B. The Value of the Site at the time of its Inscription on the World Heritage List

It is essential to specify that prior to the inscription on the World Heritage List in 1981, Mount Nimba was not identical to the Nature Reserve of 1944. Admittedly, the differences were not sufficiently brought out at the time of inscription. The recognition and explicit citing would have avoided subsequent controversies.

One difference is quantitative: the delimitation of the site. The Guinean authorities had already excluded the mining site, but no precise description nor map gave necessary details of the parts of the Nature Reserve excluded from the World Heritage site. The conclusion at present is to specify these points as well as the actual surface area of the site: 17,740 hectares.

C. The Criteria and the Current Situation

Criterion (i): The aspects determining particularly diverse characteristics which are of great scientific interest are:

- very contrasting local climates;
- relationship between the landscape and geological structures
- formation of iron deposits which have fossilized the erosion levels and are proof of the geomorphologic history of the region, if not the continent
- the obvious educational interest of the geography of Nimba should result in the publication of a geomorphologic atlas.

Criterion (ii): The characteristic of Mount Nimba is the diverse and unique vegetation along with numerous indigenous animal species. Apart from the forests of the plains and mountains, two types of grassland formations are particularly noteworthy: the high altitude savannas and those of the western foothills. The latter, established on iron deposit, have a vegetation that varies with the weight of the soil, in places non-existent, and the presence of termite hills as tall as several meters presenting a problem not yet resolved. The high savannas often called prairies, are almost unique in western Africa. Growing on very poor soil, they are made up of relatively short grass.

These prairies harbour a surprising variety of orophile species at a temperature averaging less than 6 degrees on the surrounding plains, to a dry season and a rainy season with very high humidity. Several dozen orophile animal species have been thus recognized: Mollusc, Gastropods, Earthworms, Coleopters Carabiques, diverse Orthopters, Myriapods, Diplopods and Chilopoda, Opilions and even amphibians of these species, many of which are new to science, several are indigenous; they do not exist outside of the Mount Nimba area.

It is among these indigenous species that we find the remarkable little viviparous toads, *Nectophrynoids Occidentalis* (discovered in 1942); in fact two related species exist: the first being *N. Liberiansis* more recently discovered and localized on the Liberian side of the range, whereas the *N. Occidentalis* is found in the high prairies of the Ivory Coast and especially the Guinean ridges. Much scientific research has been performed for the viviparous of the species, an exceptional trait for an Amphibian. This constitutes an adaptation in the absence of water on the mountain and has allowed the species to attain large densities in certain areas, particularly above 1400 meters.

Criterion (iii): The third is the exceptional beauty and originality of the countryside. This is due to the altitude and the morphology of the mountain craters which rise more than 1000 meters above the foothills, to the harmony created in the interaction between the rivers in the gorges becoming waterfalls, to the underbrush of dense forests and to the vast reaches of the high prairies interspersed with jagged rocks. As this landscape is rare in western Africa, its existence acquires more interest. This is among the other particularly remarkable aspects of the Nimba landscape.

Criterion (iv): A fourth composite of interest is that agriculture is naturally discouraged due to the accentuated landscape and the poor soil; it still harbours numerous vegetation and animal species which disappeared from other parts of the region due to hunting and cultivation. Among the plant forms thus preserved, diverse types of forest hygrophile and mesophile need to be mentioned along with the high prairies and diverse types of savannas and plains on iron deposits.

Among the animal species the chimpanzee is in first place, the Potto and Galago monkeys, diverse antelope, genettes, panther, daman, pangolin and forest buffalo, potamoher as well as the remarkable aquatic insectivor "*Micropotamogale Lamottei*" are indigenous to the region. Most of the species are disappearing from the entire western Africa region, as are the forests themselves.

D. The Actual Value in 1993 of Mount Nimba as a World Heritage Site

Without returning to the relative problems of delineating the site which seems resolved and are summarized in the conclusion of the present report, let us look again at the diverse present domains as justifications for the inscription of Nimba as a World Heritage site.

1) The general outline of the landscape of Nimba is obviously unchanged since 1981, but one needs to regard the deforestation of almost all the surrounding area and thus protect the Nimba forests.

2) The interest of the climate, geological and geomorphological characteristics remain, of course, still remarkable.

3) With regard to the vegetation forms of the site, note should be taken of:

- a) a modified frontier associated with a road which crossed the corner of the western foothills of the site;
- b) the illegal implementation of fields inside the forest next to Serengbara on one side and Thuo on the other which signals a need for more efficient protection of the site.

Note should be taken of a slow advance in the alteration of the high altitude prairies in the mining zone next to the site.

There is nothing to report as far as the endemic animals are concerned except that the influx of refugees from Liberia is an increasing threat to the frontiers of the Reserve and without proper surveillance could become dangerous.

4) The problem of large mammals has not worsened since 1981 except that access to the Ya Valley is easier. The nearly completed construction of a guard station for forest rangers in Thuo will hopefully improve the situation. Reproduction will need some efficient protection for a few years to permit repopulation.

5) The problem of large animals, mammals in particular, is more delicate. The population was less abundant in 1982 than in 1944 due to the intense poaching during the mining exploration and the large and uncontrolled population at this time.

These residual populations - where all the species mentioned previously are still represented - are in any case far superior to those in the surrounding areas and can repopulate easily if proper protection were assured. This remains a major reason to inscribe Mt. Nimba as a World Heritage site as this inscription would ensure better protection in the future.

Report by Professor M. LaMotte
May, 1993

ANNEX 2

Situation Report - State of the Vegetation by Professor J. Koechlin

Mount Nimba's vegetation is remarkable in its diversity of types to be found. It constitutes, in a relatively restricted area, a unique and original grouping in Africa and the world. The heritage value is precious due to the widespread degradation of Guinean forests and of tropical west African forests in general. Therefore, the Reserve represents an original and precious example of vegetation which is gradually disappearing elsewhere.

Beyond a few limited anthropocentric actions which will be treated later, the general state of the vegetation of the reserve can be considered satisfactory and in balance with the natural surroundings.

The foothill savannas are generally underlain by a thin soil layer on a crust of iron and thus different types of vegetation are a function of edaphique conditions. The climax is savanna forests, the growth of which is somewhat limited by fires.

The low altitude forests (below 1000 m) occupy vast surface areas, particularly surrounding the massive. They represent the perfectly preserved climax formations. In the more arid northeastern part of the reserve is a mesophile forest of "Triplochiton scleroxylon". The more humid southwestern part contains ombrophile forests of "Lophira Procera" and of *Tarrietia utiles* that entirely cover the low slopes. All of these forests contain a vast diversity of flora, particularly rich and increasingly valuable from a genetic preservation perspective.

The mountain forest of "Parinari excelsa" is situated on the southwest ridge of the chain above 1000 meters. In the northeast part of Nimba are high valleys with numerous varieties of flora, given the prevailing geographical conditions. Lower, in contrast to the diversified flora of the forests of the plain, the area is rich in epiphytes. Situated in the less favourable edaphic conditions are the more fragile flora which suffer from fires particularly at the head of ravines.

The mountain prairie covers all of northeast Nimba up to 850 meters, except for those areas in the gullies where forests reach a higher elevation. It is absent in the southwest region. It is essentially a fairly diversified Graminian population in function with the altitude and edaphisses. The association of the higher ridges at *Loudetia Kagereusis* is the most characteristic. This prairie frequently suffers from fires which are probably caused naturally, and which are largely responsible for the existing structure and equilibrium. Their action on the skirt of the forests is limited and localized.

Other interesting milieu such as very humid zones, rocks with flowers, etc., contain numerous individual groupings of vegetation.

This vegetation appears to be in a very good state of conservation and stable equilibrium. However, it has and still is undergoing attacks of an anthropocentric origin.

Since the creation of the reserve in 1944, the boundaries have been respected by farmers and lumberjacks, except in a few places where agricultural impact was particularly strong; the villages of Gbie, Seringbara and especially Thuo (Prefecture of Bossou), between the village and the Ya Valley, close to the Liberian border where the pressure of refugees is added to that of the local population. It should also be noted that at the northwest boundary of the Reserve, throughout the Diougou Valley, a slight overlap of cultivation into the Reserve has occurred due to a error when tracing the road, which should normally follow the boundaries.

The most worrisome degradation was caused by mining prospecting companies in the Pierre Richaud sector between 1969-1972 and 1977-1978. Over and above the radical vegetation modifications of the foothill savannas caused by housing construction, there are several kilometers of road often on very steep slopes, the digging of trenches and galleries and sounding excavations, as well as equipment abandoned in the area. These degradations were caused by the scouring and upheaval of the earth by excavation on the slopes. The disturbed area was easily identified by the mission because of the visible destruction and modification of the primitive vegetation, high prairies, and mountain ravine forests. A secondary vegetation from preexisting species in the milieu were found as conditions are favourable to their development. In the forest are varied species of deadwood. On the prairie there is a real "botanic pollution" by species such as *Dissotis grandiflora*, *Kotschyia lutea*, and especially a graminaceae, *Melinis minutiflora*, being the purest, eliminating all other species. If disturbance is fairly widespread, the secondary forest species develop (*Harungana madagascariensis*, *Trema Guineensis*, *Gaertnera paniculata*,...) but their growth will be limited by fire.

It should be noted that these vegetational transformations concern only the physically disturbed zones without affecting the untouched sectors, where primitive vegetation is able to combat efficiently the intrusion of secondary species. Other less spectacular floristic modifications have also occurred due to prospecting work but this is difficult to evaluate as no precise observations were made at an earlier stage.

Although it could be possible that the vegetational disturbances caused by prospecting were serious, at present they appear to be more or less stable. However, further prospecting could constitute a serious threat that should be surveyed continuously and attentively.

It should also be noted that the dense and obviously rapid colonization of the bared zones, despite the steep slopes, eliminates the erosion hazard.

There are lessons to be learnt from these diverse observations when the question of rehabilitating the mining exploitation site

becomes an issue.

Apart from a small number of disturbed sectors, effective protection is in place, and the Mount Nimba Reserve represents an intact testimonial and stable balance of the region's primitive vegetation.

It should again be underlined that the Reserve represents an ensemble of ecosystems unique in the world. Also, it is practically all of what remains intact of the Guinean forest. It should be realized that this is a precarious situation.

The principle threat to Mount Nimba is the increasing pressure of agricultural growth coupled with outdated and insufficient production. The needs increase with the growing population, swelled by refugees, bringing over-exploitation, the diminution of fallowing, and the disappearance of fertile land. This situation is particularly serious for the villages situated on the borders of the Reserve, in a zone densely populated and where available land is limited by the frontiers of the World Heritage site. The deficit of the rice production, particularly fluvial, shows that they have reached their limits.

Other than the establishment of effective surveillance, solutions for sustainable development in the Cavally Basin necessarily concern the stabilization, intensification and diversification of agro-sylvo-pastoral production which necessitates the refertilization of the land.

A number of solutions were proposed for the Guinean forest: lowland cultivation, agro-forestry, improved land fallowing (Legumineuses), development of animal husbandry, and fisheries, reconstitution of the forests...

Action should be taken for the transfer of knowledge acquired elsewhere to be implemented by pilot projects with the participation of the local people.

ANNEX 3

Socio-Economic Context (i) by J.F. Pascual

The Socio-economic Context of the Riverain Population of the World Heritage Site of Mount Nimba in Guinea

The Guinean part of the World Heritage site is located in the Lola Prefecture and extends to the southwest and west in the Bossou Prefecture, and to the northwest and northeast in the Prefecture of Nzo. Eleven villages are built in the immediate proximity of the site's frontiers (see map). 6800 natives of the region live in an area of about 70sq.km. (thus a density of 97 inhabitants per square km), in which 8375 refugees are also living (thus the actual density being 217 inhabitants per square km). Two principal ethnic groups coexist there: Manon and Kono, with a few families foreign to the region coming from mainly Upper Guinea or Fouta Djallon, attracted by the quality (relative) of agricultural land, commerce or the possible procurement of a mining job during the 1970s-1980s.

The majority of the population of the villages surrounding the site are farmers. The agricultural methods used are usually insufficient for the needs of the growing population. The cultivated areas are vast and of poor quality. The fallowing time is less and less: 3 years in Nzo and Zouguepo, 2 years in Boucata.

Rice is the principle crop for immediate consumption. The rice crop is grown on itinerant slopes and foothills, causing enormous damage to the forest cover for mediocre results (700 kg of rice paddy by cleared hectare). The exodus of the young people in search of a better life, the depletion of the soil which leads to the cultivation of more and more land and simultaneously the reduction of the length of fallow time, constrains many people to return to seasonal work (Malinkes and Peuls) during the dry season.

With regard to the families questioned - in the framework of the UNDP/UNESCO pilot project - the analysis of exploitation costs reveal rice production deficits of several tens of thousands of kilos, which are compensated for by the sale of raffia wine, palm oil or coffee. If the Kono people essentially consume manioc during the bridging period, in the fields of the villages of Mano, Thuo, Nion and Seringbara this crop is sometimes produced in a pure state. The saleable crops (coffee, cocoa, cola...) are little developed and non existent in some villages. Animal husbandry is also little known as the population is mainly dependent on hunting and fishing, but the supply is on the decrease.

At present, in the Nimba foothills, land is totally unregulated. The same crops are found on hilltops as well as on slopes and the

lowlands. This irrational organization of space is mainly due to regional agricultural practices (over-burning) and to eating habits, in the context of a fast-growing population (high autochtone birthrate), and artificial, with the arrival of foreigners: Liberian refugees and the return of expatriates from the Ivory Coast and Liberia.

Since the arrival of refugees, hand-pump wells have been installed by the High Commission for Refugees, mainly in the food distribution centres (Thuo, Nzo), but these are insufficient. The population more frequently uses river water the quality of which is bad and is the cause of many chronic ailments (parasites, goiter, etc...). The sanitary infrastructures are insufficient. The two dispensaries (Nzo and Thuo) lack staff and equipment and medicinal products and necessities. The population generally relies on traditional medicine. The most frequent diseases are malaria and onchocercoses, but sicknesses that would be considered benign under sanitary conditions such as measles, can be fatal to the population, particularly affecting infants and the elderly. The lack of schools (4 primary schools of 1, 2, or 3 classes and a high school in Nzo, totalling 25 teachers) and their deficiencies when they exist, provide poor primary education.

During the last two years, despite climatic constraints, the region benefitted from a weekly market, with the resale of products supplied by the HCR to the refugees. But international aid has diminished and seems to be ending. The demand for local products on the market is limited in this remote region. In the framework of agricultural restructuration which should rapidly lead to abundant production, the question of over-production will become an issue. The absence of an industrial activity causes resale problems of local products, and consequently on over-production and lack of motivation of local people.

The demographic context of today with rapid increase of population together with the influx of Liberian refugees implies an unconscious but permanent degradation of cultivation space and progressive disappearance of wild fauna. The consequences caused by this situation could be dramatic to nature as well as for the future population, and mark the need for a change in lifestyle and an adaptation of production activities given the increased population.

Taking into account the needs and wishes of the population (whose quality of life is among the poorest in the world) for a better life, it is not humanly possible to have as priority a plan of action geared towards the conservation of nature and safeguard of the fauna, without taking into account the socio-economic difficulties of the region. To proceed differently would in the short-term be detrimental to conservation objectives.

Despite this dramatic situation, the natural forests of the World Heritage site have resisted agricultural pressure. Three levels of penetration exist above the villages of Thuo, Seringbara and Gbie, but they have been circumvented by the presence of guards.

The protection of the World Heritage site is dependent upon the

establishment of a rural eco-development project, in a favourable socio-economic and ecological context with rational management of renewable natural resources by the local population. In proposing practical solutions, account should be taken of the equilibrium between the different physical and human restraints, the needs of man and those of conservation of environmental quality. The project should encourage the economic use of space and favour the remaining ecosystem instead of the current catastrophic use of vast land masses by mankind.

With or without the mining project, the degradation of nature in the region is already in an advanced state. However, there still is time to act and prevent further zones being affected by man, whilst setting up a basis for rational management of the region's vast potential riches. The industrial iron-ore mining project could be strictly controlled following a detailed analysis of its environmental impacts. The consequences on the environment of the increased population due to the project, although more difficult to manage, can be circumvented if effective measures are envisaged. However, to restore the natural equilibrium of the different natural milieus of Mount Nimba's zone of influence is not an easy task to accomplish.

ANNEX 3 (ii)

Opinion of the Riverain Population of the Reserve Report by Gneney Dore

I. Characteristics of the Region

The Guinean part of Mount Nimba is situated approximately 1,200 kilometers from the capital Conakry in Lola, an essentially agricultural and grazing region. This region is open and subject to influence from the Ivory Coast at the frontier Nzo and the LAMCO mine in Liberia.

There has always been intense movement of people between Guinea, Liberia and the Ivory Coast, all seeking a better lifestyle.

The region is densely populated with 60 people per square kilometer, whereas, the rest of Guinea has only 30 people per square kilometer. This density has increased with the massive influx of Liberian refugees from Sierra Leone and Guineans living in the two countries.

II. Socio-Economic Situation

There is a large population affected by the situation in neighbouring countries, living in a remote zone in comparison to Conakry; the roads are insufficient and in very bad condition; no railroad nor industry exists. Yekepa mine in Liberia has been closed since 1989.

Cultivation methods are outdated, based primarily on itinerant over-burning. Fallow land is left to regenerate for 4-5 years instead of 20 years in 1946, and arable land is in shortage. The existing forests are in the Reserve.

III. Consequences on the Reserve

High population, lack of arable land and industrial and commercial activities are creating more and more frustration and hostility vis-à-vis Mount Nimba for primarily two reasons:

1. Why not distribute the land of the Reserve to the population. The Reserve has existed for a longtime and the quality of life has not improved. In order to farm, the people are forced to travel far and family and village conflicts are becoming more prevalent.

2. The villagers want to know why there is no mining as is done in Liberia. There are many unemployed among the younger generation who are often educated and sometimes skilled. "If the mine were open," states one elderly woman from the village Gbie, "my children who have left me would be able to come back and find a job at the mine and then be at my side and take better care of their mother."

Populations in the villages surrounding the Reserve who were questioned (52 villages), strongly desire:

1. The opening of the mine as soon as possible to allow people to obtain work, open up the region and encourage the movement of agricultural products.

2. The distribution of arable land of the Reserve to farmers. The villagers are not for the protection of the Reserve.

Nimba, May 26, 1993
Gneney Dore Mifergui

ANNEX 3 (iii)

Point of View of Government of N'Zerekore District, Chief of Natural Resources and Environment

Report by Abou Cisse

The mining project has always been well thought of by the Guinean Forest population. It would allow them a better lifestyle because of Mount Nimba's iron-ore deposits in Boke Fria (Lower Guinea) and Dabola Tougyné (Upper and Middle Guinea).

This field mission has been the most difficult and the most interesting one of my life; difficult in that it is not at all easy to identify all of Mount Nimba's potentials; interesting because it reconfirms the scientific interest which never ceases to present Mount Nimba to our Government as a place to be classified as a World Heritage site.

In the light of these comments, it is out of the question to betray the hopes of the population who have waited for so long for its development.

The following proposals seem interesting:

1. Consideration of these preoccupations in any mining project.
2. The evaluation of Mount Nimba's iron-ore deposits, guaranteeing the necessary support for the pilot project's continued surveillance role of the Biosphere Reserve of Mount Nimba, and especially in the application of its integrated development programme.
3. Finally, all projects to be considered must contain an "Environmental Impact Study" component.

ANNEX 3 (iv)

Perspective from the Village of Gbie

The mission found it necessary to visit two villages in order to explore further the question of the local population.

Discussions were based on precise questions, raising problems that cover daily village life:

- difficult access to the villages;
- rarity of agricultural land for some and lack of plain and lowland areas for others;
- insufficient number of schools;
- increase of certain illnesses such as dysentery, whooping cough, measles, etc.;
- precarious animal husbandry practice.

With regard to the mining project, the population would very much like to see the mine operational thus creating jobs, giving them income by marketing their products and consequently a better lifestyle.

As the villagers are such a generous and kind people, it is opportune to initiate and implement small projects before the start of the exploitation of the iron deposits, which will ensure the protection of the World Heritage site.

ANNEX 3 (v)

CEDI Mission Report by Etienne Vernet

Introduction

At the sixteenth session of the World Heritage Committee (Santa Fe, 7-14 December, 1992) the Committee recommended that a mission of experts of several disciplines visit Guinea to clarify and correct the problems of inscribing Mount Nimba on the World Heritage List. During that session, Mount Nimba was placed on the List of World Heritage in Danger.

Aware of the problems created by the confusion in the boundaries of the World Heritage site and by the decision of the Guinean Government on the one hand, and the real dangers presented by the mining exploitation and the influx of numerous refugees on the other, the Committee decided to put Mount Nimba on the List of World Heritage in Danger.

The mission's objectives were the following :

1. To define the precise boundaries of the site taking into account its history and ecological values.
2. Evaluate the impact of the mining project, recommend the criteria for conservation of the site as well as examine the management of the site.
3. Study the socio-economic situation with the objective of advising the World Heritage Committee on an eventual plan of action.

I. The Boundaries of the World Heritage Site and the Boundaries of the Mining Project

1.1 History

At the time of Mount Nimba's inscription in 1981, the Committee accepted to name an area equivalent to 17,130 hectares on the World Heritage List. The surface area indicated on the inscription document presented by Guinea corresponded to the surface defined as an Integral Nature Reserve by the Decree of 5 July 1944. In reality, the actual surface area accepted by the Committee, obtained by surface integrator, is 19,290 hectares which extends over Guinea and the Ivory Coast. The 2,160 hectares which were added on in 1955 to the Reserve had not been taken into account by the Committee at the time of inscription (see map#1). The surface area of the site as proposed by Guinea in 1991 is equal to 14,760 in Guinea and the Ivory Coast, of which the Guinean surface is 9,560 hectares (see map#2).

1.2 Situation Today

During the numerous visits to the site by mission experts, zones already damaged were the following: 69, 70, 71, 72, 75, 77, and 78, and are visible from Mount Pierre Richaud, the prairies and tops of neighbouring hills (roads, bore-holes, sinks, etc...)

This permits the undoubted conclusion that previous to the inscription at the World Heritage List, Guinea intended to exploit mining on Mount Pierre Richaud.

In this context, consensually accepted by all members of the multi-disciplinary mission of May 1993, and after numerous working sessions, the decision is taken to exclude already degraded zones or potentially degraded zones by mining activities, from the World Heritage site: a surface of 1550 hectares (see maps #5, #6, #7).

The zone of mining activity as thus defined is shown in detail on maps 4, 5, 6, 7 and 8. The new surface area of the World Heritage in Danger site of Mount Nimba proposed by the Mission of May 1993 is the following: the central part of the site plus all the parts of the northern zone not degraded today and not concerned in future mining. Thus, a surface area of 17,740 hectares (see maps #3, #9).

1.3 Commentary

a) One of the objectives of the mission was to define with precision the World Heritage in Danger borders of Mount Nimba. This was accomplished.

b) The second objective was to decide whether or not the mining project compromised the integrity of the site as defined. On the basis of the team's conclusions, it is certain that degradation caused by mining is confined to the zones of the mining project. (See recommendations #3, #3bis, #5, #6, #7 and #8).

By excluding the site from damaged or potentially damaged zones, brings a new approach to the problem posed at the sixteenth session of the World Heritage Committee.

In effect, the desire of Guinea to develop the Mount Nimba region is legitimate. Therefore, we can only confirm the desire of Guinea to mine and insist on the importance of conserving the environment from all socio-economic development. (See recommendations #2, #9, #10, #11, #12, #13, #14, #15).

To this effect, environmental measures to minimize the repercussions of mining on the environment proposed in the BCOM report (available on request) are satisfactory with detailed studies, particularly those concerning water pollution.

Possible foreign investment will not be sufficient income for the long-term protection of the World Heritage in Danger site (see recommendations). This emphasizes the importance of seeking other financing.

NGOs are invited by the Government of Guinea to participate fully in all renegotiation processes of the Environment Convention between the mining interests and the Guinean Government.
(See Environmental recommendations)

Recalling the current civil war in Liberia, a project of this size could not be undertaken before many years.

Finally, institutional reinforcement is indispensable in order to obtain the objectives of the mission's many recommendations, particularly those referring to the protection and conservation of the World Heritage in Danger site (see recommendations).

II. Socio-Economic Situation

II.1 History

The region of Mount Nimba is situated in the Guinean forest at the extreme south-east of Guinea. The remoteness of this region, the decreptitude or absence of collective infrastructures (houses, roads, water, electricity, etc..) oblige the rural population to perpetuate community systems that are quasi autonomous and with its traditional lifestyles.

The demographic growth registered on the national scale (rate of growth 2.7%) and the actual density of the population in certain regions from 40 to 60 people per square kilometer is an information that cannot be neglected for the future of the country and in political development decisions.

II.2. The Situation Today

Traditional methods of production used to permit an adequate response to alimentary needs of the population. Today they are not adapted partly due to an exponential growth of the demographic density, and partly due to the permanent and increasing damage this provokes on the environment and its natural resource potentials.

One of the direct consequences of agro-sylvo pastoral practices (over-burning) transforms fallowing to 4 years and sometimes to 2 years in certain zones due to a lack of land. This type of cultivation contributes towards the destruction of forests and erosion of land, leading to a further decrease in already low production areas.

This pressure on the boundaries of Mount Nimba is real and we were able to ascertain that already certain areas of penetration were at the boundaries of the site. This problem needs to be taken into consideration without delay in the socio-economic development policies of the region.

The Guinean Government counts largely on the funds, though relative, to be generated with the opening of the mine to resolve problems faced by the local population. The opening of the mine cannot resolve all the problems. We need to seek alternative financing. The people are willing to participate in an effort to diversify their damaging agricultural practices, but must be given the means.

The survey carried out by the Mount Nimba pilot project of 52 villages bordering the site showed how little the villagers cared about preserving the environment. They were more concerned with the immediate difficulties of daily life, insufficient food, particularly during the dry season, lack of equipment and lack of collective infrastructures.

UNDP assistance has permitted the Government to promote the concept of a mining project favourable to the environmental conservation of Mount Nimba and benefit of the people who live in the foothills. It constitutes an ideal basis for work already effected in liaison with regional and national directions for the concrete implementation of development projects and the conservation of the site (see Pilot Project of Mount Nimba).

II.3. Commentary

The initiation of an efficient environmental policy should involve participation of the population. Their motivation could thus be analyzed at two levels:

- satisfying their immediate needs (nourishment, ability to obtain consumer goods, education, health, etc...);
- real possibility to begin medium and long-term investments.

The strategy of the Government will consist in promoting programmes which will bring progress to the population who, in return, will accept certain constraints in order to preserve the environment.

The pilot project of Mount Nimba (PPMN) is actually the only structure currently in existence able to put the socio-economic plans into action. The Guinean NGOs are already participating in a productive manner with the project. The international NGOs could bring technical, human and financial aid in many cases.

II.4. Proposal

An intervention strategy on the part of the NGOs, signatories of the Campaign, together with the scientific community, for the safeguard of the World Heritage site of Mount Nimba could be carried out in the framework of the PPMN. The bases for establishing an agricultural demonstration project (such as agroforestry, etc..) could be defined.

An information meeting, exchange of points of view and experiences of this type of economic development, better hygiene, and an educational system should be organized.

Liaison with the local populations and associations already present in the field, whether they be Guinean or representative of Liberian refugees, should equally be assured.

A meeting of this kind would unite the different parties concerned: NGOs, international agencies, and scientists, in order to define the type of technical assistance to Guinea and to set up sustainable development programmes of the Biosphere Reserve as developed in Agenda 21. Guinea has already given a favourable response to productive and constructive aid coming from international NGOs.

III. Institutional Situation

III.1 Situation Today

The importance given to rational environmental management in all development projects of the country's fifth programme (92-96) can be summarized as follows:

- continued economic growth and lasting rational management of the environment and natural resources.
- "human development" implying improvement of the population's living conditions, reduction of the socio-economic inequalities and supply of basic needs.
- equitable distribution of the profits of economic growth through better participation of all Guineans in the process of development.

Even in an idyllic situation, it is still necessary to note the difficulties in coordinating the policies facing the Guinean Government. To this end, UNDP assistance should be directed towards carrying out the required studies for the preparation of an integrated management plan for Mount Nimba.

This assistance is, in fact, the only structure capable of creating the beginnings of modernizing production favourable to better land management and reduction of cultivated lands. This modernization must be accompanied by a reinforcement of the institutional structure, non-existent at present.

The lack of an institutional structure makes it more difficult for the central government to coordinate and implement most policies and elaborate projects for developing the forest region of Guinea.

The present question of Liberian immigrants will accentuate the problems of responding to the essential needs of the local population.

III.2. Commentary

The particular character of Mount Nimba, now a World Heritage in Danger site, calls for a project which consists of rational management of the Biosphere Reserve of Mount Nimba to eliminate the different risks (disappearing relics of the natural ecosystem

and further impoverishment of the population) justifying action from international NGOs in association with Guinean locals.

In collaboration with agencies already present, this programme should assist the Guinean Government with socio-economical development policies and in conservation diversity.

It is therefore indispensable that Guinea reinforce its institutional capacity in order to prepare the way for permanent and lasting cooperation between international agencies, NGOs and government.

The creation of a Mount Nimba Office is recommended to Guinea in order to conserve the unique riches of the World Heritage site on international and national bases. This office should work in liaison with the international scientific community, and through scientific consultations reinforce the protection of the site (see recommendation).

Conclusion

I would like to thank the Guinean Government and the World Heritage Committee for their help in resolving the numerous problems concerning the site's boundaries. The errors were certainly shared. I am happy that we have found a solution satisfactory to all parties concerned. In particular, the willingness of Guinea to associate the work and expertise of international NGOs in the negotiation process with the mining interests. This is a promising step in the direction of a conservation and environmental protection policy of the World Heritage site.

I am confident that the mission's recommendations will be received favourably by the Guinean Government and that we will therefore be able to work together in the conservation of biodiversity and in socio-economic development.

Finally, I congratulate the PPMN members without who this mission would not have been possible.

ANNEX 3 (vi)

Guinean NGOs' Point of View following the Pluridisciplinary Mission to the Mount Nimba Biosphere Reserve

The problem being faced is one of environment and development. This situation merits the special attention of all intervening parties (government, national and international NGOs, independent experts, bilateral and multilateral agencies).

For the first time Guinean NGOs are concerned with environmental problems. They are actively participating in environmental recommendations and applying when appropriate. Recognition should be rendered to the pioneers who, despite the economic situation of the area, worked to put aside for humanity an important biosphere reserve the ecological potentials of which are at the heart of the World Heritage site. Our major preoccupation is to understand how to minimize the negative impacts of the mining project on the environment while protecting the site. The second important question is how to reconcile the mining exploitation with the indispensable socio-economic development of the remote local population. Present agricultural practices degrade many parts of the fauna and flora of the site.

We hope that the population of Mount Nimba will finally understand the evolving situation.

Following Rio, the concept of sustainable development should be integrated whenever the environment and economic development are under consideration. If financial resources are guaranteed, the Mount Nimba Biosphere Reserve will meet these standards. The Mount Nimba pilot project is the best institutional instrument to coordinate integrated management of the Reserve and riverain zones.

The Government is requested to associate the Mount Nimba pilot project with all existing projects or upcoming ones and, in particular, with the National Project of Management of Natural Rural Resources (PNGRR) and the National Environmental Action Plan (PNAE). The existing infrastructure slows down the rate of anthropocentric pressure on the area.

The NGOs call on all nature's defenders, all friends of Guinea, and all those who wish to assist, to encourage the development of the Guinean forest and to improve the conservation of the World Heritage site.

ANNEX 4

History of the Mineral Project by Ibrahima Sory Traore

I. Evolution of the mining project without environmental preoccupations.

- 1944 First signs of iron on Mount Nimba
- 1957 First mining prospecting of the surface
- 1962 Opening of LAMCO mine on Nimba
- 1969 Sounding taken by LAMCO (Liberia), 2 trenches made into the iron veins of Chateau
- 1970-71 UNDP's mining exploration on the veins of Chateau, Sempéré and North of the Grands Rochers: sounding (2977m), gallery (104m), trenches (550m).
- 1970-72 UNDP's mining activities on the Pierré Richaud: sounding (3105m), gallery (610m), trenches (2730m) and about 25km of access road.

After the results obtained from different prospecting, Guinea organized the company Mifergui Nimba to explore mineral mining on Mount Nimba.

- June 1973 Creation of Mifergui-Nimba for 1,500,000 tons per year
- July 1973 Agreement between Liberia and Guinea to transport Guinean minerals across Liberia via LAMCO railroad until the completion of the Trans-Guinean rail (900 km approximately).
- Dec. 1973 Decree of Dec. 27, 1973 giving Mifergiu Nimba rights to 280 square kilometers covering the entire Guinean part of Mount Nimba.
- 1975 Preliminary feasibility study by LKAB (Sweden)
- 1977-78 Definitive feasibility study by Kaiser Engineering (USA) which performed prospecting on Pierre Richaud. Soundings (11,577.59 meters,) galleries (572m) and approximately 25km of access road.
- 1984 Guinea and Liberia envision joint exploration of Guinean and Liberian minerals; the beginning of the common project. This was financed by the World Bank.
- 1985-89 Exploration project in association with LAMCO and BRGM
- 1990 Creation of the company NIMCO by Guinea, Liberia and private investors. Production 9-12 MT/year.
- 6/8/1992 Decree to give NIMCO a mining concession of 540 hectares on Mount Nimba

II. Evolution of the Mining Project with environmental concerns taken into consideration.

The variety of ecological riches of Mount Nimba and the beauty of the site attract numerous scientific missions in the 1940s.

- 1944 The site is classified as an integrated natural reserve at the same time as the first signs of iron-ore appear. Since

then, missions carried out studies of fauna and flora on one side, iron-ore studies on the other.

1977-78 Deeper exploration of mining of Mount Nimba by sounding and drifting with the first environmental study to evaluate corrective impacts and measures. During almost all of this period scientists were concerned with protecting the ecological riches of Nimba and not mining. The geologists and miners studied the veins without considering the ecological wealth.

1980 With UNESCO's encouragement, Guinea showed its concern by demanding a change from Natural Reserve status to MAB Biosphere Reserve (Man and Biosphere) which better reconciled development and protection of nature. This is now enlisted on the World Heritage List (1981)

1987 and 1989 the Guinean Government decreed the environmental code and put in the PAE (Environmental Plan of Action) in collaboration with the World Bank and UNESCO. A scientific team from the pilot project of Mount Nimba under the technical direction of UNESCO, is responsible for establishing a protection plan for the site.

It is from this period on that, with Guinean encouragement, the promoters of the mining project and organizations to protect Mount Nimba worked together efficiently.

1990 To meet the new Guinean legislation, the mining project promoters undertook a study on the impact of the mine, the results of which are with BCEOM. Carried out in strict collaboration with PPMN and the engineers of the project, this impact study proposed important modifications to the conception technique of the mining project in order to reduce negative effects on the environment. The environmental study was an integral part of the conception of the mining project.

Technical modifications brought in:

- Changing the site of the wagon station and modifying railroad tracks to avoid heavily forested areas
- Moving the pit-head of the mine to limit debris from the mountain in order to reduce climate consequences
- Concentrating tailings in the Zie Valley
- Measuring the hydraulic reserve used.

These combined modifications have a price. Investment costs are estimated at \$10.5 million. Expenses for exploitation are 0.8 million per year.

In conclusion, the mining project will certainly have an impact on the environment, but forest destruction will be reduced. It could encourage economic development in the area. In agreement with the Guinean administration, there will be a director of integrated development. A convention between the Guinean Government and the mining company will be signed, containing the following three points:

- A technical part: NIMCO must respect the recommended

technical measures

- A development part: NIMCO becomes integrated in the development when necessary
- A protection part: NIMCO participates in the protection of the Mount Nimba Reserve.

In addition, the mining project aids in the following:

- the extraction of minerals
- protection of nature
- development of the region

Mount Nimba, May 25, 1993

ANNEX 5
Evaluation Report by IUCN

Account of the Mission to Mount Nimba (Guinea-Conakry) under the Protection of The World Heritage Centre of UNESCO

By Mankoto Ma Mbaelele, Vice President of the CNPPA/IUCN for Sub-Saharan Francophone Africa, and Regional Consultant for Africa

i. Introduction

I was invited by the World Heritage Centre of UNESCO, as Vice President of the National Parks and Protected Areas Commission (CPNNA of the IUCN World Conservation Union, to participate in the pluridisciplinary mission which took place at Mount Nimba Nature Reserve, from 15-30 May, 1993. This mission was authorized by my Government conforming with Mission order #014/CAB/MIN/ECNT/93 of 17 May, 1993.

The mission was composed of a group of ten interdisciplinary experts consisting of ecologists, economists, specialists in the environment, and park management. The mission followed the decision made by the World Heritage Committee in its sixteenth session in Santa Fe (USA), 7-14 December, 1992. The complete list of participants comprising the Guinean Government, the World Heritage Centre of UNESCO, UNEP, UNDP, IUCN (myself), Mount Nimba Pilot Project, the French and Guinean NGOs and the mining project consortium, is attached to the general report of the team, put together under the supervision of the World Heritage Centre.

Following communication difficulties and late reception of the travel authorization, I was only able to join the team on the terrain of Mount Nimba from 21-23 of May, 1993. During these two days of on site work, I worked double time to visit the sites under conflict of use (mining project Pierre Richaud), as the others had. I participated in the group discussions before leaving the team to go to the 35th session of the IUCN meeting at its Headquarters in Gland, Switzerland from 25-28 May.

2. Problematic

Guinea, Liberia and the Ivory Coast share the Mount Nimba range. The Liberian side is the most damaged from a long mining exploitation of iron-ore which caused the destruction of the humid, dense forest and the disappearance of fauna by poaching. The file shows Mount Nimba to be the object of at least ten international conferences and missions since its inscription on the List of World Heritage sites in 1981 (of which one year was spent in debate) without ever reaching a definite agreement.

The last meeting of importance was held in Paris (December 1-2, 1992). The meeting was attended by Guinean Government representatives, international institutes and scientists, NGOs and foreign investors of the mining project, and examined the environmental questions and developments of Mount Nimba. The

meeting was following the proposed World Heritage Committee recommendation made in Santa Fe (USA) in December, 1992, recommending the inscription of Mount Nimba on the List of World Heritage in Danger. It should be noted that the IUCN participated in the meeting in Paris, with Mr. Gerard Sournia representing Francophone Affairs.

The core of the problem is that the chain of Nimba's mountains is enclosed in the same site as large deposits of iron-ore of high quality and natural riches of fauna and flora of great interest in terms of biodiversity.

The file submitted by Guinea served in the decision by the World Heritage Committee at its fifth session in Sydney (Australia), (26 October, 1981), to inscribe Mount Nimba on the World Heritage List. Unfortunately, there were ambiguities and errors concerning the surface area and the geographic coordinates of the site. In addition, a detailed examination of the documentation revealed that the Guinean Legislator never intended to include the rich iron-ore northern part of the Integral Nature Reserve (see map I).

3. Examination of the File in relation to the Objectives assigned to the Pluridisciplinary Mission.

Keeping in mind the technical errors which were missed at its inscription on the World Heritage List in 1981, the multidisciplinary mission methodically proceeded by on-site inspection and verification and by speaking with the local population and others concerned. The team worked with precise cartography documents and analyzed satellite photos. The participation of Professor Maxime LaMotte, "founding father" of the Integrated Nature Reserve of Mount Nimba in 1944 helped enormously in the team's work to reestablish the facts of the historic site's dimensions.

As Regional Consultant of the IUCN for Africa, I reminded the assembly of the position taken by the IUCN at the 18th General Assembly in Perth (Australia) in December 1990, and of Resolution 18.51 on the Protection of Mount Nimba. The position consists of inviting the government authorities of Guinea to "resist the pressure of mining activities and all other active threats to the integrated natural site, and in particular, to reject the exploitation project of iron deposits, to put in place a management plan for the region to guarantee the protection of the site.

During the site visit I recognized the persistence of the Guinean Government, in that they want to exploit the iron deposits on Mount Nimba, a wish many times expressed over the last 20 years.

3.1 Recommendations for an Appropriate Boundary of the Guinean part of Mount Nimba

After debates and deliberations, a consensus was reached on the question of the boundary (see map IX). Many arguments were favourable to this recommendation:

a) Contrary to the proposition of delimiting presented by Guinea in 1991 (see map II) which reduced the surface of the Reserve to 14,760 ha, thus losing 30% of the northern part, the mission recommended a configuration of the site based on a surface of 17,740 ha.

b) The principle types of vegetation (dense, humid forest, semi-deciduous, sub-mountain forest at Parinari, high altitude savannas at Loudetia), and the indigenous species of fauna, concentrated in the northern part of the site, are thus saved by at least 20% of the coveted zone, and which basically were the source of worry expressed by the IUCN, in the report DELVINGT & WILSON (November 1991) and by Jeffrey Sayer.

c) The degraded zone has been definitively excluded from the World Heritage site due to damage caused to the environment by mining prospecting (1970-1979).

The mission recommends that an international panel of experts work with the Government of Guinea in policy-making and ensures that mining exploitation next to the Reserve respects the environmental norms, and that in this respect an Environmental Convention be negotiated.

I strongly recommended the participation of the IUCN on the Panel of Experts.

3.2 Evaluation of the impact of the Mining Exploration and the Management Plan of the site for effective measures

The mission approved the measures proposed by the Mount Nimba MAB pilot project and the National Committee MAB-Guinea to remedy the effects of the mining exploitation on the environment:

- adjust the mining plan in upper Pierre Richaud so as not to change in a noticeable way the line of the ridge of this part of the Mount Nimba range, serving as a shield against the dry winds;

- concentration of tailings in the valley of Zie in order to limit the pollution on the natural milieu. To construct two decanting barrages to control the discharges and retain the fine particles from the exploitation. The intention is to avoid pollution in the Cavally Basin where there are many tributaries crossing into the Ivory Coast.

- protection of the Integrated Nature Reserve (World Heritage site) by positioning the installations (living areas for the miners, loading silos for the wagons, general service and railroad lines) outside of the Reserve. Note that the Guinean mining project is based on Liberian infrastructure to treat and ship the iron via the port of Buchanan (Liberia).

I believe that a better management plan is indispensable and international assistance is requested to this effect. A study under the World Heritage Centre's guidance would necessitate adequate sponsored financing and IUCN expertise.

3.3 Socio-economic and Demographic Situation of the region and Recommendations

On-site visits confirmed the threat that weighs on the Integral Nature Reserve, due to population growth in this forested region, which is in fact the most dense in Guinea (50-60 inhabitants per square km, whereas the average is 15-30 inhabitants per square km in the rest of the country). The local population, generally poor, principally cultivates rice and farms by overburning, which consumes large amounts of space. In certain places visited by my mission colleagues, cultivation is threateningly close to the Reserve.

The problem of numerous Liberian refugees, nearly 80,000 people around Mount Nimba and approximately 500,000 in forested Guinea, has complicated the situation in recent years. Furthermore, according to information received from those responsible for the pilot project, the wild animals of the dense humid forests at the foot of slopes, are heavily poached. It is at its highest due to lack of surveillance during mining activities in the 1970s, and carried out by the local people of the forest, hunters, who became workers on the mining project.

To my mind the following urgent measures should be taken to protect the World Heritage site's universal riches:

a) a team of guards to assure surveillance of the Integrated Natural Reserve. They should be well equipped and well trained in order to educate the public and the scientific observers (Eco-guards). The number of guards should be estimated by an evaluation of the needs of surveillance. Operating and investment expenses exist to this effect in the study of the pilot project MAB.

b) Reinforcement of the legal status of the site. The old 1944 Decree should be adapted to create the Integrated Nature Reserve of Mount Nimba by new legislation of the Guinean Government concerning Water and Forests (if one exists already).

c) Promote investment in the integrated rural development project presented to the UNDP by the Guinean Government, to promote a regional development based on agro-sylvo pastoral activities, and implying the participation of the local people and NGOs.

d) Ensure, if the mining project recommences, that the direct results are profitable to the local population first of all, not just in terms of employment but also in terms of the upgrading the quality of life for the local people and their well being (social structures, schools, communication, agro-sylvo projects to preserve the fragile forests ecosystem, etc.).

e) Make an effective scientific and technical cooperation project agreement for the ecosystems of Mount Nimba as proposed by the

technical meeting for the protection of Mount Nimba between the Ivory Coast and Guinea, which took place at Mount Nimba June 26th to July 4th, 1992. The site should also become a common concern and benefit from greater attention on the part of the international community and aid for the regional project.

f) Retain Mount Nimba on the List of World Heritage in Danger, as decided by the World Heritage Committee in Santa Fe (USA) in December 1992, while waiting for the situation to improve with efforts at all levels and through international transparency in the management of World Heritage property.

g) Encourage the Guinean Government to finalize their adhesion to the IUCN World Conservation Union, by maintaining the dialogue and allowing this State to participate efficiently in the international activities of the Union.

4. Conclusion and Alert

The multidisciplinary mission's recommendation of new boundaries of the Integrated Nature Reserve as well as the World Heritage site, is a consensus resulting from a thorough evaluation of all aspects of the question (judicial, administrative, ecological, and socio-economic), by the team of international experts designated by the World Heritage Centre of UNESCO, in agreement with the Guinean Government and the institutions concerned.

In summary, this recommendation consists of :

1. The exclusion of 9.9% of the degraded zone comprising Pierre Richaud from the Statut of the Integrated Nature Reserve, as it no longer conforms to the criteria of World Heritage values.

2. The addition of nearly 20% of the northern part to the Reserve, which takes into account its biodiversity and indigenous interests, without accounting for the extraordinary beauty of the site.

This solution assumes that the Guinean Government accepts the renunciation of the 1991 project, consisting of a precise exclusion of the whole northern part of the Reserve, which in their view, should not be a part of the World Heritage site.

Furthermore, the file asking for the inscription as presented by the Government to the World Heritage Committee in 1981, having proposed all of the Integrated Nature Reserve's original surface area of 1944, should not, in our opinion, condemn the International Tribunal (UNESCO-World Heritage and IUCN) to have placed their confidence in the Guinean authorities.

The present solution is not the best solution possible but it is at least the best available. After more than a decade of debates and controversy over Mount Nimba, a decision was necessary to save the essence of the Integral Nature Reserve rather than no decision at all.

Now that the thorn has been removed from the side of Mount Nimba, so to speak, rapid intervention is needed to heal the wound before post-operative gangrene sets in. This is why the recommendations of our multidisciplinary mission's evaluation are essential:

1. Establish a panel of experts that benefit from operating autonomously. The IUCN should be strictly associated with the Panel.
2. Keep the site on the List of World Heritage in Danger, to guarantee the necessary monitoring in the coming years.
3. Promote investment in an integrated rural development project to stabilize the population, fight against poverty, and lessen the human impact on the World Heritage site.

5. Acknowledgements.

I would like to take this occasion to thank the World Heritage Centre of UNESCO for having asked me to participate in this important multidisciplinary mission of evaluation of Mount Nimba, World Heritage site.

My thanks also to the Government of Zaire for having authorized my participation in this mission of international experts.

The time spent on Mount Nimba was pleasant due to the hospitality and spirit of the organization of the Chief Technical Adviser and his Guinean homologue, Director of the Mount Nimba pilot project, who warmly welcomed the Delegation of Experts in this remote part of the Guinean forest where self-support is an indispensable condition to the service. I thank them.

Gland, 27 May, 1993

Mankoto Ma Mbalele
Vice President of the Commission
of National Parks and Protected Areas (CPPNA)
of the IUCN

Regional Consultant for the IUCN for Africa
and General Delegate-President of the Zairian Institution
for the Conservation of Nature (IZCN)

**Mission to Mount Nimba
Daily Activities**

- Saturday, May 15, 1993: Visit to Brazzaville by my Director in charge of Public Relations, to retrieve the travel papers sent by the IUCN to the Mayamaya airport, and arrangements for my trip to Guinea-Conakry
- Monday May 17, 1993: Visit Guinean, Swiss and Dutch Embassies to obtain visas.
- Tuesday May 18, 1993: Kinshasa-Brazzaville by boat, Air France flight Brazzaville-Abidjan. Receive visa at the airport, overnight in Abidjan.
- Wednesday, May 19, 1993: Continue trip on Air Ivoire flight Abidjan-Conakry. Overnight in NOVOTEL.
- Thursday, May 20, 1993: Contact Ibrahima Magassouba, Secretary General of the National Commission of UNESCO. Arrangements for trip to Mount Nimba by Mrs. Camara of UNDP
- Friday, May 21, 1993: Flight from Conakry-Nzerekore, by Bimoteur Guinea Air service (1h30min flight). Met by Saramady Toure, Director of Mount Nimba Pilot Project. Trip Nzerekore-Mount Nimba (2 hours). Met by other members of the multidisciplinary mission. Briefing by Harold Eidsvik, of the World Heritage Centre, Head of the mission, by Mount Nimba Pilot Project Director and Dr. Jean-Francois Pascual, Principal Technical Consultant of said project. Examination of Landsat photos of the region.
- Saturday May 22, 1993: Visit terrain, with Director of the Pilot Project. Late morning visit of the the old research station IFAN (Institute Fondamental of Africque Noire); Nzo village, and meeting with Chief of Nzo.
- Sunday May 23, 1993: Return to Mount Nimba with Principal technical consultant of the pilot project. Met at the airport of Nzerekore with Dr. Bernd von Droste, Director of the World Heritage Centre, arriving from Paris via Conakry. Exchange points of view at the airport. Flight to Conakry on Guinea InterAir. Overnight in Conakry.
- Monday May 24, 1993: Visit to the National Commission of

UNESCO. Visit to the office of NGO
"Guinea Ecology" and MIFERGUI/Nimco.
Contact Director responsible for the
National Plan of Action for the
Environment (PNAE)

ANNEX 6

List of Participants

Abou Cisse	Governor N'Zerekore
Mamadou Bella Diallo	Assoane, BP 2006 Conakry
Ceoui Dore	Mifergui
Gneneyi Dore	Mifergui
Harold Eidsvik	WHC/UNESCO
Jean Koechlin	Prof. Botany, Paris
Sidiki Kone	Pilot Project Nimba
Maxime LaMotte	Consultant, UNESCO
Mankoto Ma Mbaelele	IUCN, Kinsasha
Jean-Francois Pascual	UNDP, Conakry
Mamadou Sylla	MRNEE (Guinea)
Sekou Sylla	Guinea Ecology
Saramady Toure	Nimba Pilot Project BP3266
Ibrahima Sory Traore	Nimco Mining Project
Etienne Vernet	CEDI, Paris
B von Droste	WHC/UNESCO
Bai-Masse Taal	UNEP

* not all the participants were with the group for the entire duration of the trip.