



Environment, policies, mining and structural adjustment in Guinea

by Bonnie Campbell

In this article Bonnie Campbell examines the implications of alternative conceptualisations of the role of the state in the environmental policy process as revealed through the analysis of different planning documents. The study is based on the example of Guinean environmental policies in the mining sector.

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The manner in which the process of environmental degradation is conceptualised and its origins explained have obvious critical implications for the nature of the policy recommendations which will be put forward. Behind this general observation nestle a wide range of interconnected issues including the following: the relative importance accorded external and internal factors in their contribution to environmental degradation, which in fact is just one facet of the more general question of the conceptualisation of environmental questions with regard to the debates concerning economic growth and development; the question of the role of the state in the development process and more generally the public versus private debate. Finally, this subject raises the question of the interplay between foreign and internal actors in the process of drawing up environmental and development policy – the whole issue of the reappropriation as opposed to the externalisation of the policy process.

While at first glance these broad inter-related questions may seem rather theoretical, in fact they may be shown to be extremely practical and urgent when related to specific contemporary settings. This study is based on the example of Guinean environmental policies in the mining sector. It will examine the implications of alternative conceptualisations of the role of the state in the environmental policy process as revealed through the analysis of different planning documents.

An impressive number of studies have been undertaken on the environmental impacts of the bauxite–alumina–aluminium industry in various countries (Brazil, Jamaica, Australia and Canada, to mention just these) but apparently not in Guinea. This is significant for two reasons. First, because the environmental impacts of this mining industry are considerable and second, because the bauxite–alumina sector has been by far the country's leading sector for the last thirty-five years.

Table 1 briefly summarises the bauxite, alumina, aluminium production process.

According to the study on the Brazilian industry from which this table is drawn, the main environmental problems associated with bauxite mining are related to the rehabilitation of mined-out areas and the disposal of tailings. Emissions of dust consisting of clay and bauxite particles from dryers' chimneys can also pose problems. In alumina production, the disposal of bauxite residue saturated with caustic soda ("red mud") is the main problem, although the emissions to the atmosphere of gases and particles from boilers, calcination furnaces and bauxite dryers may also be important. As we shall see, the emissions from the production of bauxite and alumina affect the soil, the air and the water. Although aluminium smelting is not undertaken in Guinea, it is useful to note that the emissions of fluorides from reduction cells and gases, smoke and steam resulting from pitch distillation are considered most important. Finally, in aluminium fabrication, emissions of gases and particles from smelting and re-heating of furnaces pose the largest problems.²

Bauxite and alumina production have been of critical importance to the post-independence Guinean economy. In fact, activities had already begun at several sites during the colonial period and, as is often overlooked, Pechiney's important activities were to continue even after President Sékou Touré's radical break with the French metropolitan power with the referendum of September 28, 1958. During the first Republic (1958–1984), three main sites were in operation, two of which produced and exported bauxite, and one alumina.³

Mining at Fria was initiated in 1957 by the French firm Pechiney Ugine. Production of alumina at this site began in 1960 and reached 460 000 t in 1962 representing 58 per cent of the total value of Guinean exports. By 1963 the site was being operated by an international consortium,

Fria Company (Frialco),⁴ which signed an agreement in February 1973 with the Government that created a joint venture, Friguia, in which the transnationals held 51 per cent of the shares and the Government 49 per cent.

Although the joint venture was exporting over 600 000 t of alumina per year by the late 1970s, the company's output was uneven. Nonetheless, the local processing of bauxite to alumina at the Fria site from the early 1960s represented an interesting precedent, suggesting that one must go beyond an analysis of the absence of the factors of production, or interpretations of the 'political situation' during Touré's regime, as an explanation for non-transformation.

Production only began at Boké, the country's largest site, in 1973 some ten years after it had been agreed to form a mixed-capital venture, the Compagnie des Bauxites de Guinée, (CBG), in which 49 per cent of shares were held by the Government and the remaining 51 per cent by the international consortium known as Halco Mining.⁵ But Touré soon denounced the private firms for not respecting their agreement regarding local processing, because all output was exported as raw bauxite and purchased in proportions reflecting the shares of the private partners. Moreover, in 1974 it was announced that Alcan Aluminium Ltd., one of the foreign partners, was proceeding with the transformation of bauxite from the Boké site, not locally, as stipulated in the agreement signed with the Government, but in Ireland.⁶ The importance of the Boké site is illustrated by the fact that by the end of the 1970s it was producing close to 9 million tons of bauxite annually, all of which was exported in an unprocessed state.

The third bauxite mine of importance, that of Débélé in the Kindia region, was operated jointly by the Soviet Union and the Guinean Government. The agreement signed in November 1969 created the Office des Bauxites de Kindia (OBK), 100 per cent owned by the state. The Soviet

Union constructed the mine and the railway, and was to be reimbursed by receiving 50 per cent of the ore extracted. A further 40 per cent was destined to the USSR according to the clauses of a long-term clearing agreement between the two countries. Production began in 1974, and exports of the raw mineral grew to between 2.7 and 3 Mt by 1990. Subsequently, in 1992 the firm was wound up, transformed into a limited liability company and renamed Société des Bauxites de Kindia (SBK).

If in the 1960s and 1970s Guinean mining policies had emphasised local transformation as a means to access to a greater share of earnings from this sector, this objective weakened during the next decade. The central policy thrust became the maintenance of a minimum level of

revenue through the imposition of taxes on the export of bauxite and alumina. Here again, as suggested by the price negotiations of 1985–87, the results by the end of the 1980s were to prove disappointing, illustrating Guinea's asymmetrical integration into the highly oligopolistic structure of the international aluminium industry.⁷

From an economic standpoint, in spite of the country's enormous and potentially diversified wealth in mineral deposits⁸, agriculture and hydro-electric power, by the end of the Sékou Touré period, Guinea remained extremely dependent on the bauxite-alumina sector which contributed at that time an estimated 25 per cent of GDP, 95 per cent of exports and 79 per cent of tax revenue.⁹ Moreover, by the time of Touré's death in 1984, the coun-

Table 1. The bauxite, alumina, aluminium production process.

Activity	Product	Processes and inputs
Mining	Bauxite	De-bushing, removal of overburden Mining
Refining of bauxite	Alumina	Washing, cycloning and filtering/drying Drying of wet bauxite Crushing Digesting, thickening, washing, precipitation Calcination Inputs per ton of alumina□: • 2.3 tons bauxite • 95 kg caustic soda • 92 kg fuel oil • 800 kWh electric power
Reduction and smelting	Primary aluminium	Reduction of alumina in electrolytic cells Casting of ingot Inputs per ton of aluminium□: • 1.93 tons alumina • 370 kg coke • 15 to 30 kg fluorides • 116 kg pitch • 15 MWh electric power
Fabrication	Fabricated products	Hot and cold rolling (sheets and foils) Extrusion (extruded products) Rod and cables production Foundry (castings)

try's general economic situation was extremely difficult. The infrastructure was worn down, mining activities enclaved, agricultural production had deteriorated, industries were poorly equipped and operating under capacity, the public sector was overstuffed and the system of education was unsuited to the needs of the country. In addition, the local currency had lost much of its value, and an estimated half of internal trade took place outside the formal market. Above all, a heavy burden of official debt (1,200 MUSD) and arrears (200 MUSD) had been amassed which together represented approximately the value of the country's gross domestic product.¹⁰ In a word, in spite of its enormous potential, the mining sector had been unable to forestall the process of indebtedness and the country was in desperate need for foreign exchange in order to undertake its programme of reform.

It was this context which provides the background for the introduction of the structural adjustment measures, resulting process of liberalisation and state withdrawal implemented by the government of President Lansana Conté. In turn, the

orientation of these reforms was to be of critical importance for the nature of the new policies put forward in the area of environmental protection.

The Second Republic's environmental legislation was to be guided by a series of studies which underlined the urgency, the constraints and possibility of durable management of Guinean natural resources and of the environment more generally. Most central among the measures introduced was the Environmental Code of 1987 which was accompanied and subsequently completed by numerous decrees and codes.¹¹

Preparation for the country's first Plan National d'Action Environnementale (PNAE) completed in December 1993, revealed the weaknesses of existing legislation which up to that time had dealt essentially with agriculture and forestry. The following initiatives were considered to have been particularly important in making the government aware of the situation and alerting it to the urgency, the constraints and opportunities in the area of sustainable management of Guinean natural resources and the environment more generally:

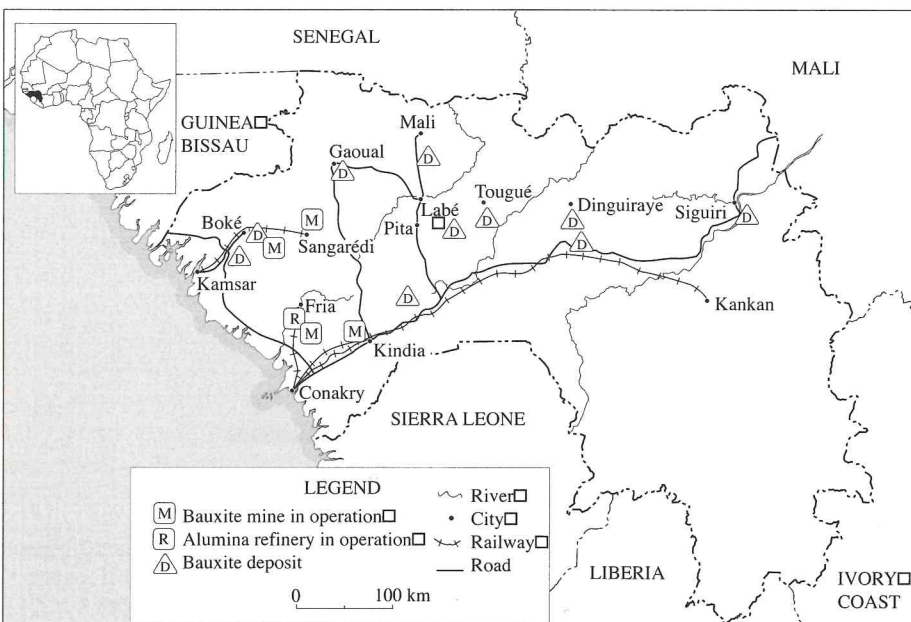
Bauxite mines and alumina industry in Guinea 1993.

- Schéma National d'Aménagement du Territoire (SNAT)
- Lettre de Politique de Développement Agricole (LPDA)
- Plan d'Action Forestier Guinéen (PAFG)
- Programme d'Assainissement de l'Environnement Urbain de Conakry (PA-DEULAC)
- Projet d'Aménagement Intégré du Massif du Fouta Djallon
- Projet des Hauts Bassins Versants du Niger
- Projet de Gestion des Ressources Rurales (PGRR)¹²

With respect to the mining sector, the 1993 PNAE raised the challenge of the costs and benefits of developing this critical area of activity, as one of the principal issues in environmental management. Guinea, the document noted, is fortunate to have good mining potential. However, continued the 1993 PNEA: "the country's landscape is scarred by large open cuts left by open-pit mining from which wastes are not sufficiently controlled and where the surfaces which have already been mined are not always been rehabilitated."¹³

The challenge was defined as follows: "How can Guinea develop into a first rate mining operator capable of exploiting its potential, while at the same time taking into account the protection of its environment?"¹⁴ This challenge which was in fact dealt with extensively in the 1993 PNAE, was to be particularly acute because of the growing constraints on the country's leading economic sector.

Further to the 1985-87 price negotiations which abolished the Guinean bauxite levy, an agreement was signed for the period 1988-91 introducing a floating tax that would reflect the price movements of aluminium on the international market.¹⁵ The new taxation agreements provided for a greater sharing of risks and benefits for the Government vis-à-vis its foreign partner shareholders. Taxes were to increase during upswings in the global demand



Source: After a map by C. Chamberland, Les Laboratoires de géographie, Université du Québec à Chicoutimi, in B. Campbell and M. Ericsson (eds.) *Restructuring in global aluminium*, Mining Journal Books, 1996.

for aluminium but to decrease when prices for these products declined.

As a result, the Guinean economy found itself more exposed to fluctuations in the international aluminium market. At the same time, the new arrangements in the case of CBG translated into a reduction of tax payments in the medium term. This was not merely as a result of aluminium price projections, which various studies suggested would remain flat, but because of "a peculiarity in the formula which gives decreasing allowances for costs as time goes on." As a World Bank report on Guinea went on to explain: "The result of this is that real tax revenues will decline under a wide range of assumptions about the future aluminium price movement."¹⁶

In another document, a World Bank study projected: "if current pricing and tax arrangements are maintained, Government revenues from CBG operations are projected to decline again in real terms by 25–30 per cent during the 1990s, while CBG's annual production will likely increase to 12 million tonnes. The instability and decline in the Government's revenue flow from mining taxation will likely be considerable during the 1990s."¹⁷

Subsequently, World Bank estimates suggested that in fact Guinean export receipts from mining which include those from gold and diamonds but of which those from bauxite and alumina are by far the most important, had dropped by 35 per cent between 1990 and 1993, with a decline in government revenue from the mining sector of nearly 40 per cent.¹⁸

My own calculations reveal a decline in the contribution of mining revenue to the Government's fiscal receipts from 61.2 per cent in 1991 to 29.4 per cent in 1995, with an estimate of 26.8 per cent in 1996.¹⁹ Moreover, these figures suggest that over the period 1990–1994, there occurred a drop in the value of Guinean bauxite exports from 447 to 272 MUSD, and for alumina exports from 166 to 103 MUSD. It may also be shown that the

contribution of mining revenues as a per cent of total Government revenue dropped from 73.7 per cent to 46.1 per cent between 1986 and 1991 and to as low as 20.2 per cent in 1995. The estimated projection for 1996 was 19 per cent. Finally, as may also be shown, the contribution of mining receipts as a per cent of GDP dropped from 11.1 to 7.9 per cent between 1986 and 1991 to reach 3.0 per cent in 1995.²⁰

It should be recalled that these declines took place in the context of the increase of production and the improvement of the competitiveness of Friguia as of 1989, when exports increased to 600 000 t annually, and in the context of important investments in CBG which permitted production to reach 11.5 Mt in 1990–91, production levels which were maintained and even surpassed in following years. One might justifiably have expected that these two developments would have compensated for SBK's poor performance over the same period which, under the circumstances, hardly seems a satisfactory explanation for falling revenues from this sector.

The dramatic decline of mineral receipts led to the introduction of a "rescue plan" characterised by the further liberalisation of legislation and regulations in the Guinean mining sector and accompanied by new incentives to attract foreign investment notably to the country's vital mining sector. This was also the context in which a new PNAE was put forward in 1994. The new document practically omitted any discussion of the mining sector, just as the new Mining Code put forward in 1995 had much less to say than the preceding one about the environment.

In confronting the difficulty of encouraging environmental protection while faced with the necessity of attempting to stimulate economic growth through the development of its rich mineral sector, the Guinean Government was to face a complex challenge but certainly not one that is unique to this country. As K. Andersen points out:

"Governments, regulators, and the citizens of mining communities face the challenge of designing and implementing public policies which will achieve a satisfactory balance between the total social benefits which can be derived from mining and the total social costs which arise from the degradation of human health, social stability, and the natural environment."²¹

As the same author goes on to point out in her discussion of the criteria of the success in meeting the above challenge, there are two guiding principles. First, at a minimum, monitoring inspection and some system of enforcement will be necessary to ensure that the polluter pays. Second, there should be no intergenerational transfer of the costs, social or private, associated with the mine. As Andersen continues: "...this is ultimately a political decision which will, again, require the judgement and wisdom on the part of designated leaders."²²

What is unique in the Guinean experience with environmental policies in the mining sector, is not only the country's particularly asymmetrical form of integration into the globalised aluminium industry, but also the fact that this experience has taken place in the context of structural adjustment measures conceptualised for the most part, outside the country. These measures have been introduced since 1985 with the objective of stabilising the country's finances and reforming the economy by addressing internal factors to the almost total neglect of external constraints.²³ Consequently, the emphasis on domestic factors has meant increasingly heavy reliance on policies of deregulation, liberalisation, privatisation and state withdrawal. Over the adjustment period since 1985, this process has led to a reconceptualisation and reshaping of the functions of the state in general and to environmental policies in particular. Moreover, since 1994, there appears to have taken place as well, a gradual externalisation of the planning process concerning natural resource policy. This raises two questions. Given the

advanced nature of the process of state withdrawal from the developmental process and the growing influence of external forces and actors in the articulation of Guinean economic and environmental strategies:

1. In the present geo-political context, is Guinea in a position to assume the political decisions which, as suggested above, are a condition for reconciling economic development and environmental protection?
2. Is not the reappropriation of the conceptualisation and planning process over natural resource management a necessary political condition for long-term economic and social development and political stability?

While I do not pretend to propose answers to these questions, because of their importance, it seems useful to bring together elements which contribute to our understanding of the issues which they raise. To this end, by contrasting two key instruments of environmental legislation as they relate to the mining sector, the 1993 PNAE and that of 1994, the remainder of the article seeks to illustrate how different conceptualisations of the role of the state in the area of environmental protection in the mining sector lead to quite different policy implications.

The 1993 National Action Environmental Plan

The process of drawing up a Guinean National Action Environmental Plan began in 1989 and emerged in the context of the World Bank's initiative taken in 1987, encouraging such plans as a means to ensure that the impulse for environmental policy be nationally rather than foreign driven.²⁴

In Guinea it was recognised that the approach to environmental management must be multi-sectoral. Consequently, at its first meeting in June 1989, the Conseil de l'Environnement which had been created to advise the ministry in 1987 in this area, recommended the creation of four commissions:

- Commission de la conservation et de la préservation de l'environnement;
- Commission de la lutte contre les pollutions et les nuisances;
- Commission de l'environnement et du développement;
- Commission de l'information et de l'éducation environnementale.²⁵

Furthermore, and as revealed by the creation of the third Commission, in the Guinean PAE there was a clear desire to conceptualise environmental strategies within the broader context of macro-economic policies and a more global concept of development. The multisectoral perspective and emphasis on development that characterised the approach at the end of the 1980s and the very beginning of the 1990s, are illustrated by the association during this period, of environmental questions within a Ministry which also had the responsibility for natural resources and energy. Finally, the process of drawing up the PAE was seen not only as a technical exercise but as participatory process which was to have a mobilising and educational effect.

Among the important preparatory stages to the 1993 Plan and reflecting the developmental orientation of thinking at that time, one may cite the 1990 report: "Environnement et Ressources Naturelles. Cadre juridique et institutionnel pour un développement durable", which the subsequent 1993 documents suggests was to be the cornerstone to the PNAE ("constitue la pièce maîtresse du PNAE").²⁶

While it is beyond the scope of this paper to do a complete analysis of the 1993 Plan National d'Action pour l'Environnement which is over 300 pages long, several of its characteristics seem particularly noteworthy.

Most fundamental is the fact that the 1993 PNAE was based on the premise that the protection of the environment and the nature of the pattern of development were intimately linked, a point to which we shall return.

As noted earlier, with regard to mining the document notes that the country has important potential in this area, but that the landscape is marred by vast scars left by open-pit mines from which wastes are insufficiently controlled. Moreover, areas which have already been exploited are not rehabilitated. The Plan provides as much information as is available to document the impact of mining and draws attention, as we have seen, to the need for much more complete information.

With regard to the conceptualisation of environmental policy, the section on "Global strategies for the management of natural resources" contains a sub-section (C. III pp. 97-98-99) which deals with "Popular participation in conservation", which explicitly links the protection of the environment and the nature of development strategies:

"The problem of the conservation of resources is narrowly associated with the implementation of an alternative economic strategy which favours rural people".²⁷

The Plan goes on in a subsection on the "Struggle against poverty",²⁸ to explicitly set out the links between environmental policy, sustainable development and the reduction of poverty. An effective strategy aimed at simultaneously resolving the problems of poverty and those of the environment, continues the document, must not only be based on the improvement of production and the social conditions of the population, decentralisation and local participation, but also on a process of democratisation with the support of a competent and conscientious administration.

Before considering the 1993 Plan's recommendations for an environmental strategy in the mining sector, and more generally, its conceptualisation of the role to be played by the public sector in this regard, it is interesting to note that the section dealing with the management of resources in the mining sector, "Gestion des Ressources Minières" has somehow been omitted from the section where one would have expected it.²⁹

The recommendations put forward by the 1993 PNAE are of two types: incentives for environmental protection and prevention of negative impacts.³⁰

Concerning the incentives, it is proposed that mining interests should:

- a) elaborate plans to rehabilitate operated sites;
- b) undertake the supervision of the quality of water which has been treated;
- c) collect and dispose of household wastes;
- d) see to the hygiene, the living conditions and security of workers

The preventive measures it is suggested, should include:

- a) impact studies which will supply the technical information needed for reflection and discussion;
- b) the reinforcement of institutional structures including the Direction Nationale de l'Environnement, le Conseil National de l'Environnement, and legislation (codes and other texts);
- c) training, information and education so as to permit the integration of environmental questions into the decision-making process.

With regard to the institutional context, the Plan goes on to call for a series of reforms.³¹ These include the attachment of the Conseil National de l'Environnement, (CNE) to a political entity at the highest hierarchical level, the creation of departmental units of the CNE, and finally the restructuring of the territorial organisation of the environmental services, which should be granted additional human and material support.

What becomes quite apparent is the recognition by the 1993 Plan that the carrying out of these recommendations will depend on political support at a high level.

In this regard, the Plan is explicit: "There needs to be an independent civil body staffed by highly trained cadres who have the necessary financial and technical backing, as well as political support at a sufficiently high level. This body must have a mandate to carry out

research and reflection with a view of reinforcing national institutions and possess knowledge of local operations so as to be in a position to act as adviser to the ministries concerning the financial and technical management of projects."³² (My translation).

The 1993 PNAE presents very concrete recommendations concerning priority actions in the short and medium term. Of the 20 proposals, several concern the need for information. For example it is recommended:³³

- to undertake an inventory and an evaluation of natural resources and establish a data base in this area;
 - to undertake the planning and management of water resources at a regional level and most particularly with regard to river basins;
 - to establish laws and regulations in this area;
 - to undertake measures to stop the degradation and permit the national use of available resources by seeing to their conservation and renewal where necessary;
 - to initiate measures concerning water purification thus permitting a decrease of water pollution; the treatment of Conakry's water and that of the large cities of the interior; the surveillance of the waters of the Konkouré river starting from Fria; the stricter control of sea ships and the stricter control of water pollution caused by industry.³⁴
- Within this framework, continues the Plan, legislation concerning the quality of air will be of major importance.

With regard to information, an entire chapter (VII) deals with information systems concerning the environment, outlining existing projects and proposing new initiatives. With regard to mining, this section outlines the various types of information available from the Direction Nationale des Mines and the Direction Nationale de la Géologie.³⁵ Having noted the lack of information, the Plan describes in specific terms in this chapter of 36 pages, projects which could collect

and systematise information including the creation of national norms adapted to an inventory of Guinea's natural resources for this purpose.³⁶ Finally, a last section sets out the nature of the institutional framework which is seen as necessary in order to carry out the 1993 PNAE. The underlying principles explaining the need for such a framework are reaffirmed and the first of these reiterates the links between rational management of the environment on the one hand, and social and economic development, on the other. In order to achieve this, *the state*, it is specified, must recognise its fundamental responsibility of ensuring coherence in the use of resources by the different agents of development:

"The renewable and non-renewable resources of all the country represent essential aspects of the environment. Their development and rational management are the guarantee of the sustainable economic and social development of the nation as a whole.

For the Republic of Guinea in particular, these preoccupations must become the fundamental mission of the State in order to ensure the coherent use of resources within the different sectors of development."³⁷ (My translation).

The need for political support as a condition for carrying out strategies for the management of natural resources and the environment is reaffirmed in very strong terms in the following pages. It is suggested that there is need for a "strong voice" in order to ensure intersectoral coordination and management. The creation of intersectoral links is presented as an indispensable condition in view of the fact, continues the Plan, that environmental concerns touch all sectors of human life and often entail conflicts of interest.³⁸ The Plan calls for the creation of a co-ordinating entity at a much higher level than the sectoral ministry of execution. Similarly, it is suggested that the formulation of environmental policies must take place at a much higher level than that of the executing bodies in order

to harmonise diverse and contradictory interests.

The highly political nature of environmental management is no where more clearly set out than in the recommendation made by the Plan in favour of political support at the highest echelons through the creation of an interministerial commission at the Cabinet level:

"Political support: In order to be effective, the management of the environment requires political support at a high level on a national scale, as well as at the level of the "préfectures", the communes, the urban districts and communities of social development. Consequently, whatever the form of institutional mechanism adopted by the Government, it will be necessary to create a high level (Cabinet) interministerial commission which will have the responsibility of advising the institution which is created or reinforced concerning overall policies."³⁹

To conclude therefore, the conception of environmental management contained in the 1993 PNAE is one which sees environmental concerns intimately linked with developmental strategies, whether this concerns the analysis of the origin and the nature of the environmental problems, or the proposed strategy to remedy such problems. Furthermore, this analysis of environmental questions led to the recommendation of an interventionist role for the public sector in the co-ordination and harmonisation of sectoral interests in order to ensure environmental protection.

The 1994 National Action Environmental Plan

The new PNAE was published in September 1994 not even a year after the release of the first PNAE of December 1993. In very important ways, the second Plan was to represent a break with the ideas contained in the first one.⁴⁰ One noteworthy example is the explanation which the 1994 document was to give for the origins of environmental degradation.

These were attributed to two main internal weaknesses:

1. The insufficient performance of the agricultural system (extensive cultivation, erosion, etc.);
2. Habits which lead to the over-exploitation of natural resources (the use of fire to hunt, over-cutting of forests, etc.).⁴¹

This illustrates a central point which has been dealt with more extensively by J. Clapp: "Much of the recent literature on Africa's environmental crisis today focuses almost exclusively on internal dimensions, such as the self-perpetuating cycle between environmental degradation and domestic policies, population growth, and poverty."⁴²

For reasons which we shall examine below, the 1994 PNAE is very reserved concerning the negative impacts of industry or mining on the environment and consequently, the chief factor presented as the agent of environmental degradation is demographic growth. In fact, the chapter concerning the "Objectives and Strategies", one may read: "Durant les trois dernières décennies, la croissance démographique a été à l'origine de la quasi-totalité des problèmes environnementaux."⁴³ ("For the last three decades, demographic growth has been at the origin of almost all environmental problems." My translation.)

While population growth has certainly placed pressure on the country's resources, as has been pointed out elsewhere, population pressure must be re-examined in the context of a complex and dynamic set of factors and not in isolation if lasting solutions are to be found. Interestingly, the 1993 PNAE had argued that it was difficult to show a direct link between an increase in population size and growing environmental degradation. In the 1994 document, such a perspective seems to have been set aside because the analyses concerning the environment appear to have been subordinated to strategies favouring the pursuit of a particular notion of economic growth. The objective of

linear, quantifiable growth (although without specification as to growth of what or for the benefit of whom), is put forward as the paramount solution to all other developmental objectives and therefore, the positive contribution of activities in the industrial and mining sectors should not be questioned on the grounds that they might cause pollution:

"Le même constat est à faire pour l'industrie et les mines, secteur auquel il n'est pas question de renoncer sous prétexte de pollution."⁴⁴

As will be seen, what is proposed therefore, is not a change in present patterns of growth, but certain "corrective measures" which are presented as rectifying past management errors. Before developing the question of proposed strategies, it is useful to note the manner in which the 1994 PNAE presents industrial pollution and more specifically that from mining.

Two brief paragraphs are devoted to this subject. In the first of these, having referred to the dust from alumina production at Friguia, discussion on the whole subject is concluded rapidly by a statement to the effect that after dust pollution reached exceptionally high levels during dry season in the 1980s, the problem of emissions from Friguia has in large part been resolved by a dust control system in the company's port loading activities.⁴⁵

This conclusion, although seriously put in question by alternative sources such as NorWatch⁴⁶, is nevertheless very much in line with the positive presentation of the mining sector contained in the 1994 PNAE, which suggests in its summary introduction concerning environmental considerations, that the country is blessed with exemplary development in the mining sector ("un développement minier exemplaire").⁴⁷

In contrast to the 1993 PNAE which put forward a broad perspective in which development and environment were presented as conceptually very much interconnected, in the 1994 document, rather than involving socio-economic and polit

ical dimensions, environmental protection is seen essentially as a technical problem. Consequently, "The PNAE must correct the management errors."⁴⁸

Given the fact that the origins of environmental problems are attributed essentially to poverty and lack of economic growth, the 1994 PNAE goes on to suggest that the solutions lie on the one hand, with technical progress, and on the other, with economic liberalisation: "which provides a real possibility for exchange and access to factors of production and market products, as well as lasting disenclavement."⁴⁹ In the country's move towards greater economic liberalisation as of 1985, the first priority according to this document, has been the withdrawal of the state from the productive sector. Subsequently, continues the same source, the reforms introduced in the economic field have been carried further and extended to the social sector where this will involve: "a desire to decentralise choices and responsibilities for initiatives."⁵⁰ In the absence of an overall development plan, the general orientation of state policy is summarised by the following objectives:

- sustained economic growth;
- a struggle against poverty and correcting inequalities;
- the development of commercial capacity and diversification of exports;
- local development and decentralised planning;
- state disengagement;
- sustainable development.⁵¹

As with economic development, the PNAE 1994 proposes a minimalist and managerialist view of the state in the area of environmental policy. More specifically, it is recommended in the measures prescribed that it be private operators who should intervene.⁵² The role of the public sector is to orient, to encourage and to stimulate partnership agreements with entrepreneurs of the private sector, as well as to draw up regulations and to see to their implementation. The relevant texts are con-

sidered to have been promulgated, notably with the "Code sur la protection et la mise en valeur de l'environnement" and the Mining Code which calls for the rehabilitation of sites in order to renew with their potential for agricultural production or forestry.

According to the 1994 PNAE therefore, the necessary legislation exists. What is lacking or the reason for the absence of implementation is seen a technical question: "des textes d'application font encore défaut pour que cette législation soit appliquée."⁵³ Consequently, the role of the state is seen as regulatory, one of bringing in complementary legislation, ensuring that texts are compatible and enforced. Little or nothing however, is specified concerning conceptualising national objectives, controlling the application and carrying out of sanctions to permit enforcement of legislation if necessary.

Beyond a segmented view of the nature of environmental problems which are considered as distinct rather than as an inseparable component of development, environmental management appears to come down, in the last instance, according to the 1994 PNAE, essentially to a technical question of drawing up and seeing to the application of rules which are to be implemented by private operators. Consequently, in the environmental strategy proposed by this document, there are five large programmes, each corresponding to a particular area of activity or "target groups": a rural programme; an urban programme; a coastal and maritime programme; a cultural and societal programme; a programme in support of the public services in charge of the environment.⁵⁴ In Chapter 3 of the 1994 PNAE, which describes the specific programmes which make up the Plan, there is no mention made of the industrial and mining sectors. The one oblique reference to this area of activity is in itself surprising for it is found in the programme in support of public services responsible for the environment and notably,

the Direction Nationale de l'Environnement (DNE). One would have thought that it was the role of the DNE to support and implement the PNAE and not the reverse as suggested here. Moreover, the reference contained here is not to an ongoing broad function of monitoring industrial impacts but to a much more limited role concerning the "Prevention of major industrial risks."⁵⁵ Here again the responsibility of the public sector is defined with reference to four general objectives: collecting information; monitoring the environment; legislation and regulation; and training of cadres. No mention is made of the eventual need for the public sector to enforce or to sanction if necessary. Moreover, accompanying a rather minimalist and managerialist view of the state, the 1994 PNAE contains a particular notion of public participation. Target populations are to have the role of facilitating the transmission of environmental messages. This suggests a very top down notion of the exercise of political power which depends more on the passive integration of the population to a predefined environmental strategy, rather than their active role in the definition of the objectives of development patterns into which environmental policies will necessarily have to be set. The reasons for this are no doubt numerous and complex. What seems fundamental and in contrast to the 1993 PNAE are the following two points:

1. Environmental policy in the 1994 document is placed in the context of priority given to economic growth strategies which present market forces as capable of resolving environmental problems on condition of the withdrawal of the state. Consequently, this perspective presents the benefits from economic growth as unquestionably superior to the social costs of environmental degradation. It is this framework which helps account for the minimisation of negative impacts from mining and industry which, as we have seen, are in fact quite clearly very real.

2. With the 1994 PNAE, the whole impetus concerning the initiative for policy formulation, monitoring, training and producing information seems to have moved from a situation of a least partial national reappropriation as conceptualised in the 1993 document, to a situation very much more heavily dependent of external initiatives, expertise, financing and support.⁵⁶

This striking evolution in the history of the key planning document concerning Guinean natural resource policy raises a number of contradictions which we shall explore in the concluding section.

Conclusion

While a comparative analysis of two planning documents may appear a rather academic exercise, it has the merit of revealing how different theoretical and ideological perspectives give rise to alternative ways of conceptualising the links between the causes of environmental degradation, the relations between developmental and environmental strategies, the disengagement of the state and different policy proposals which result from these different perspectives. In Guinea, the increasing move towards economic liberalisation accompanied by measures of deregulation and privatisation as of the beginning of the 1990s, appears to have been accompanied by an increasingly segmented approach to environmental issues in which these questions were treated in abstraction of overall development patterns. Simultaneously, there seems to have occurred an increasing externalisation of the policy process in the area of natural resources management in which foreign technology, training and finance are called upon to assume a more active and even decisive role. Paralleling this evolution, since the beginning of the 1990s, the responsibility for environmental issues was transferred from its initial central place in the Ministry of Natural Resources, Energy and the Environment, created in March 1986, to an intermediate position when the former Ministry was split at the end of 1994 into the Min-

istry of Energy and the Environment on the one hand, and the Ministry of Mines and Geology on the other. At the end of 1996, in the context of the further liberalisation of the economy described above, the environmental portfolio was moved once again so that it is now no longer with either Mines, Energy or Natural Resources but the responsibility of the Ministry of Public Works.

In this context, the planning principle for environmental policies put forward by the 1994 PNAE is that this document should serve merely as a vehicle for integrating a number of sectorial plans (Forestry, Equipment in Conakry, Urban Environment of Conakry, etc.) rather than providing a directive thrust for a more developmental approach in which environmental preoccupations are placed at the heart of development strategies as had been attempted in the 1993 PNAE.

In keeping with the call for the withdrawal of the state accompanying greater liberalisation present in the 1994 PNAE, emphasis is placed on the decentralisation of the environmental planning process, initiatives and operators. In the absence of consideration of external factors and pressures which, in alternative approaches, are seen to interact with internal factors to contribute to environmental degradation, priority is given in the 1994 document to building awareness in the rural areas, with the expectation that the best results will be achieved through the initiatives of local village communities. As for urban communities, beyond building awareness, it is suggested that it is by favouring the use of local budgets that results will best be achieved, illustrating the PNAE's sectorial approach which focuses on each identified internal target group but in the absence of national norms, financial support or eventual means of enforcement.

In keeping with the recent recommendations put forward by the Bretton Woods Institutions to the effect that Guinea must do more to attract private investment, what is particularly noteworthy is the lack of consideration given to

the negative environmental impacts in the industrial and mining sector, and the assumption that any difficulty in these areas should and can be righted by the private operators concerned, through encouragement rather than constraints.

As in the case of more long term economic development, in view of the considerable leverage which the Bretton Woods Institutions and other bilateral financial agencies have come to exercise over the Guinean economy, current approaches and notably policies of state withdrawal and deregulation may very well have equally long-term critical implications for natural resource management. As T. Biersteker has pointed out with regard to more global development concerns:

"Until the Bank and the Fund begin to analyse the ways in which external conditions interact with specific economic reform measures, the severity of the debt crisis and the 'consensus' it has generated could be used simply to redirect state intervention in the economy without regard for its developmental consequences (a point some officials in the World Bank and the IMF are beginning to realise)."⁵⁷

Paradoxically, the need for a more effective role of the state in Guinean environmental protection has been reaffirmed on numerous occasions in the past. In 1991, concerning the conditions necessary to implement the Biodiversity Action Plan, one report called for the reinforcement of the state's capacity and efficiency. In this regard, although the Conseil National de l'Environnement (CNE) was created in 1987, it only held its first meeting in 1989. Unfortunately, and for reasons which the Biodiversity Plan chose not to develop, the CNE had not been very operational. Nonetheless, continued the same Plan: "the need for such a Council, if possible under the responsibility of the highest governmental authorities, is increasingly imperative and it would be eminently advisable that measures be taken to permit this as soon as possible."⁵⁸

As noted, the need for political support in order to ensure the respect of environmental norms and regulations was a central and repeated preoccupation of the 1993 PNAE. In stark contrast to this, throughout the 1994 PNAE, there is the assumption that the withdrawal of the state is a necessary condition in order to meet economic objectives⁵⁹ to which environmental objectives are explicitly subordinated. Of the numerous issues which such a position raises, perhaps the most important is the difficulty of seeing how long-term sustainable growth will be assured in the absence of environmental protection. This is particularly true in the absence of the reappropriation of the policy process, whether concerning economic growth or environmental protection which recent experiences suggest is not what is happening.

As is well known, the strategy in favour of opening the economy further as proposed by the 1995 Mining Code is based on the argument that openness will encourage vigorous competitive markets in which prices rather than social policies will drive the behaviour of firms and factors of production they employ and so provide an optimal allocation of resources. Realistic sustainable environmental outcomes, continues this mode of reasoning, are most likely to be achieved by privately owned companies acting in response to the pressures of the free market. However, as K. Andersen suggests, it is not sure why this "best environmental practice" works. In other words, self-regulating markets may well depend on quite specific circumstances. Among those proposed, it would seem that the most important would be intense public scrutiny and highly competitive markets, notably in countries which have deposits sufficient in size and grade to attract multinationals. The same author continues:

"The primary challenges for the government, and its regulators, will be to negotiate financial terms and agreements which capture a sufficient share of the rent; to have regulations in place which are fair, appropriate, and con-

sistent; and, if necessary, to have the capacity to enforce agreements and compliance with environmental regulations."⁶⁰

If developments in the Guinean mining sector since the late 1980s and early 1990s reveal one thing it is the country's difficulty in meeting this primary challenge – negotiating financial terms concerning the conditions of extraction of its key resources, bauxite and alumina, in order to maintain minimally stable, rather than declining export receipts and government revenue from this critical sector. Moreover, in the absence of intense public scrutiny and in the presence of an industrial sector characterised by oligopoly, it is difficult to see how openness, accompanied by state withdrawal, could be claimed to contribute to guaranteeing vigorous competitive markets.

As in the case of poverty reduction, so for environmental protection, appropriate policies depend on developmental strategies which ensure the capacity of the state not only to legislate and regulate, but also to negotiate effectively, to enforce and redistribute and above all, to "make visible a strong and unified political will."⁶¹

In the absence of public scrutiny, competitive markets or such a capacity for state intervention, present conceptualisation of Guinean economic growth strategies may well have unfortunate, cumulative and perverse consequences in that they contribute to endangering natural resource endowments, increasing poverty, and hence compromising more sustainable patterns of social and economic development.

Notes

This is a shortened form of a paper originally presented at the Panel, "The Political Economy of Natural Resource Policy", Part II, at the, International Studies Association 37th Annual Conference, March 21, 1997, Toronto.

1. United Nations Conference on Trade and Development, *Environmental Aspects of Bauxite, Alumina and Aluminium Production*

in Brazil, UNCTAD COM 49, February 1995, p. 13.

2. Ibid.

3. For a detailed account of the development of this sector see Bonnie K. Campbell, *Les enjeux de la bauxite. La Guinée face aux multinationales de l'aluminium*, Presses de l'Université de Montréal and Institut Universitaire de Hautes Etudes Internationales de Genève, 1983, 182 pages.

4. Frialco's shares were mainly held by Olin Mathieson Chemical Corporation, United States (48.5 per cent) and Pechiney Ugine, France (26.5 per cent), with the rest being distributed among British Aluminium Company (10 per cent), Aluminium Industrie AG, Switzerland (10 per cent), and Vereinigte Aluminium Werke AG, Germany (5 per cent).

5. The ownership of the Halco Mining consortium was divided as follows: Alcan Aluminium Ltd, 27 per cent; Aluminum Company of America, 27 per cent; Harvey Aluminum Inc., 20 per cent; Pechiney Ugine, 10 per cent; Vereinigte Aluminium Werke AG, 10 per cent; and Montecatini Edison, 6 per cent.

6. An explanation for this unexpected pattern of relocation is provided in Chap. 4 of *Les enjeux de la bauxite*, op. cit.

7. For an analysis of the industry see chapters 1 and 2 in *Restructuring in Global Aluminium*, Bonnie Campbell and Magnus Ericsson (Editors), Mining Journal Books, London, 1996. Chapter 3 is on Guinea.

8. Apart from its enormous reserves of high grade bauxite, estimated at 20 billion tons, or one third of the world's highest grade deposits, which at present according to the World Bank represent approximately 40 per cent of international trade of this material, it is estimated that Guinea's mineral reserves include the following :

Iron Ore	12 000 Mt
Gold	500 t
Diamonds	25 M carats
Nickel	73 Mt
Chalk	40 Mt
Graphite	11 000 t

9. World Bank, *Republic of Guinea. Country Economic Memorandum*, Vol. 2 (Washington, DC, 16 November, 1990) Report No. 8774, p. 32.

10. Guinea, *Programme intérimaire de redressement national, 1985–1987* (Conakry, November 1985).

11. The September 1994 *Plan National d'Action pour l'Environnement* (PNAE) lists the following legislation;

Already in existence:

- Décret 89-199 codifiant les Etudes d'impact sur l'environnement
- Arrêté d'application
- Décret 89-200 portant régime juridique des installations classées
- Arrêté sur les nomenclatures
- Décret 89-201 portant préservation du milieu marin contre toutes formes de pollution

Prepared but not implemented:

- Décret sur le fonds de sauvegarde
- Décret sur les taxes et redevances
- Décret sur la protection des sols et du sous-sol
- Décret sur les produits chimiques et les substances nocives et dangereuses

Still to be prepared:

- Décret sur la gestion des déchets
- Décret sur la protection des eaux continentales
- Décret sur les plans d'urgence

Other dispositions and decrees concerned with the environment:

- Code forestier
- Code de l'élevage
- Code de la pêche
- Code de la faune sauvage et réglementation de la chasse
- Code foncier et dominiat
- Code de la santé
- Code de l'eau (in process of being drawn up)
- Déclaration de politique de population (decree).

Interestingly the 1994 PNAE does not include the Mining Code in this enumeration.

12. Republic of Guinea, *Plan National d'Action pour l'Environnement*, Conakry, December, 1993, p. 13.

13. *Ibid.* p. 14.

14. *Ibid.*

15. For more detail see Bonnie Campbell and Jennifer Clapp "Guinea's Economic Performance Under Adjustment: Importance of Mining and Agriculture", *The Journal of Modern African Studies*, Vol. 33, No. 3, 1995, p. 432. "Guinea's Economic Performance Under Structural Adjustment," *op. cit.*, p. 432.

16. Republic of Guinea, Country Economic Memorandum, Vol. 2, *op. cit.*, p. 36.

17. World Bank, *Guinea: Mining Sector Review*, (Washington, DC, 10 July 1990) Report No. 8692, p. 15.

18. The Economist Intelligence Unit, *Guinea, Sierra Leone, Liberia. Country Report*. 3rd

quarter 1995. London, p. 14.

19. Bonnie Campbell, "Restructuration globale, contraintes externes et relance économique nationale: l'expérience de la Guinée dans le cadre de la globalisation de l'industrie de l'aluminium." Presented to the Conference *Globalisation, Compétitivité et Sécurité Humaine*, organised by the European Association of Development Institutes, Vienna, September 11-14, 1996.

20. *Ibid.* These figures are drawn from Tables 2 and 3. Mimeo p. 19 and p. 20 respectively.

21. Kathleen Andersen, "Mining, privatization and the environment" in *Journal of Mineral Policy, Business and Environment, Raw Materials Report*, vol. 11, no. 3, 1995, p. 26.

22. *Ibid.*

23. This argument is developed in Bonnie Campbell and Jennifer Clapp "Guinea's Economic Performance Under Adjustment: Importance of Mining and Agriculture", *op. cit.*, pp 425-449.

24. Émilienne Anikpo N'Tame. 'L'Afrique face au futur : L'Afrique va-t-elle vers une catastrophe écologique à l'horizon 2025? Quelles options stratégiques prendre?' dans *African Development Review. Special Issue on Africa and the Future*. vol. 7, no. 2 December 1995, p. 222.

25. République de Guinée. Plan d'Action Environnementale (PAE), Plan d'Action Biodiversité, vol. 2, Union Mondiale pour la Nature (UICN) August, 1991, p. 29.

26. Report of Mohammed Ali Mekour (Consultant FAO) 1990.

27. PNAE 1993, p. 98.

28. *Ibid.*, pp. 196-198.

29. On page 193, where this section would logically have been included, there is a gap in the paragraphs presented which jump from number 50 to 89, as if the mining section had been omitted from the final document.

30. PNAE 1993 p. 197

31. *Ibid.*, p. 201

32. *Ibid.*

33. *Ibid.* p. 204

34. *Ibid.*, p. 204

35. *Ibid.*, p. 212

36. *Ibid.*, p. 235

37. *Ibid.*, p. 305

38. *Ibid.*, p. 306

39. *Ibid.*, p. 307

40. Interestingly, in the references included in the Background and Preparatory Studies to the 1994 PNAE, (Annex 4), no mention at all is made to the 1993 PNAE which was a far more elaborated document (330 pages as op-

posed to 54 pages plus annexes). It is also interesting to note in the introductory summary to the 1994 PNAE, a considerable number of references to the important role played by the help of foreign experts in finally completing this document or with regard to their future support for activities in this area.

41. République de Guinée, *Plan National d'Action pour l'Environnement*, PNUD/UNSO/GUI/90/X02, (Parc Scientifique Agropolis, Montpellier), September 1994. Résumé, p. i.

42. J. Clapp, "Global Economic Factors in Africa's Environmental Crisis," *op. cit.*, p. 29.

43. PNAE, 1994, *op. cit.*, p. 40.

44. PNAE, 1994, *op. cit.*, p. iii.

45. PNAE, 1994, *op. cit.*, p. 21.

46. The Economist Intelligence Unit, *Country Report*, 3rd quarter, 1996. p. 16. A spokesman for Norsk Hydro, a partner in Friguia, admitted that the company was not happy with mining methods used at the site, but said that the measures to improve the local environment were being implemented and would be in place within the next two years. *Ibid.*

47. PNAE, 1994, *op. cit.*, p. i.

48. PNAE, 1994, *op. cit.*, p. iv.

49. PNAE, 1994, *op. cit.*, p. i.

50. PNAE, 1994, *op. cit.*, p. 38.

51. *Ibid.*

52. *Ibid.*, p. 22.

53. *Ibid.*

54. *Ibid.*, p. iv.

55. *Ibid.*, p. 49.

56. "Le PNAE a déjà été retenu pour être le cadre d'intervention de la Banque Mondiale dans ce secteur." *Ibid.*, p. 49.

57. Thomas Biersteker, "Reducing the Role of the State in the Economy: A Conceptual Exploration of IMF and World Bank Prescriptions," in *International Studies Quarterly*, vol. 34, 1990, p. 489.

58. République de Guinée, *Plan d'Action Environnementale (PAE), Plan d'Action Biodiversité*, vol. 2, Union Mondiale pour la Nature (UNIN), August 1991, p. 30.

59. PNAE 1994, *op. cit.*, p. 38.

60. K. Andersen, *op. cit.*, p. 27.

61. *Ibid.*, p. 28