

F. NECESSARY EXPANSION

Lacking precise information, I estimate the increase rate of the population to be 3.5%. Under such conditions, a good progress for the Congolese mining industry requires an expansion rate of 7 - 8%, leaving 4% at the disposal for the amelioration of the living standard of the population.

Such an expansion rate would require investments amounting to approximately 4,000 million BF per year.

G. CONDITIONS AND NECESSARY RESPITE FOR THE ACCOMPLISHMENT OF THIS EXPANSION

Under the actual circumstances, the problem of expansion of the Congolese mining industry seems particularly ticklish, as shown in the following:

1. Maximum rate of expansion to be hoped for for the U.M.H.K. and its productions:

In 1959, with its flourishing industry, it would have been easy to have put spurs to the prospection and the investments - quite differently to-day.

30% of the mining companies are convalescents, but with the required help in foreign currency and the concurring assistance of the Common Market, they will in 1965 have reached or surpassed the 1959 production.

The U.M.H.K. has only suffered minor injuries, and is ready for a new good advance.

But - the conjuncture and the market quotations for the metals taken into consideration, and also the present composition of its production, it would seem unreasonable to hope for an expansion rate of 8% for:

copper
cobalt
zinc;

No doubt it will be more realistic not to expect more than 4% for copper, and 6% for cobalt and zinc - the limiting agreements on production and the danger of a drop in quotations resulting from over-production taken into consideration.

It remains to compensate these weakened rates by the establishment of other mines or by developing industries derivated from the mining industry (fertilizers or other elaborated products).

ii. Rate of expansion to be hoped for for Kasai, that is for the MIBA and for the diamonds

By order of importance, the diamonds and the MIBA occupy a very prominent place in Congolese production. It is not absolutely impossible to anticipate a rise in production, but the imperative condition for this is the suppression of the illegal exploitation and traffic.

The MIBA extracts, good year or bad, 15 million carats, the clandestines commercialize 6 million carats, being 40% of MIBA's production. The clandestines suppressed, and we should have an official increase of 8% for five years.

iii. Return into production of the FORMINIERE

The return into a progressive production of the FORMINIERE would mean a non negligible contribution, and it is not unreasonable to hope for - as from June 1964 - a supplement of the extension rate of 2% on the diamond production.

It seems therefore that one for the diamond industry might hope for an increase rate of about 9% for 5 years, under the express condition that the illegal exploitation and traffic be radically suppressed.

iv. Tin, Gold, etc.

There exists no commercial limit to the increase of the gold production; provided a competitive cost price. - Congo is able to exercise a massive effort in its gold production.

Concerning tin, the problem is more nuancé as, even if at present the International Tin Council does not impose any quantitative restrictions on the production and the commercialisation of tin, this will undoubtedly not always be so, and we shall see later which measures one might take into consideration to meet this future contingency.

Under present conditions, it should not be unreasonable, after having studied the problems and established a program in collaboration with the producers, to hope for an expansion rate of 8% for tin and 10% for gold, during the next five years.

v. Conclusion

Altogether, considering the perspectives developed above, and on conditions of:

- stability of the price quotations,
- obtaining of an agreement with the producers concerned.

it should seem possible to obtain for the next 5 years a rate of annual expansion, representing a percentage of the total production of Congo, of

- 4.00% for the U.M.H.K.
- 0.50% " " gold producers
- 0.75% " " tin
- 1.35% " " MIBA and FORMINIERE together.

The total, 6.60% will represent the total expansion rate of the mining industry - lacking only 1.40% to reach the desirable rate of 8%.

We can only and must consequently hope for the establishment of new mining exploitations, the condition for this, however, being the preceding start of an intensive prospection on the national territory.

It must be evident that the hoped for augmentation to the production by the creation and organisation of the artisanat is included in these figures.

H. ESTABLISHMENT OF NEW MINING ACTIVITIES

a. PROSPECTION

The principal characteristics of the mining industry are:

1. its high technical development and its mechanisation;
2. the importance of necessary investments as soon as it comes to massive productions or productions from primary deposits (particularly by underground mining):

1. the artisanat on alluvias will require:
U.S. \$ 20 per head employed for an average annual production value of 300\$ per capita.
- ii. the artisanat on underground primary deposits (example from South-East Asia and from North Africa) will require: 100\$ per head employed for an annual production value of 600\$ per capita.
- iii. the industrial mining of primary or secondary ore bodies, by underground mining or by quarrying, will require: from 5000 to 50,000 US \$ per head employed for an annual value of the production ranging from \$1000 to \$20,000 per capita;
3. the long delay from the initial phase of discovering the ore-body is of greater importance, the mechanisation is more advanced, the investments the higher.

These delays will vary from 1 year to 7 years or more, dependent on the type of ore-body and exploitation;
4. the reasonable order of magnitude of the amounts to be presumed in Congo for an underground metal mine, thoroughly mechanized, are as follows, always counting the expected production as equalling to 100:
 - i. the prospection and initial development of the ore-body: 15;
 - ii. the capital involved, investments included: 300;
 - iii. the net profits: 15;
 - iv. the annual prospection and research: 6 - 10;
 - v. the average investment per head employed: 10,000 US \$;
 - vi. the annual production per head employed: 2,000 \$;
 - vii. the profit to be expected per head employed in stable periods: 30\$;
 - viii. the average annual Congolese salaries being 900 \$;
 - ix. the percentage of employed technicians being: 20%;

- x. the average annual payment for foreign technicians (salary only) being: 8,000\$;
- 5. It seems that for Congo, at present, the exploiting mining companies must be classified in three categories:
 - i. those whose financial results for the last 7 years will permit a serious effort of prospection and expansion, viz.
 - the U.M.H.K.
 - the MIBA
 - the SYMETAN (on condition of a detailed study of its balance sheet);
 - ii. those whose financial results for the last years have been disastrous, but whose former reserves will permit a serious effort of prospection. This will be the case of the FORMINIERE, and no doubt also with the M.G.L.;
 - iii. those, whose injuries received during the last years place them in a state of "convalescence", and to whom the Congolese State temporarily owes a particular attention and care.

Of these, it seems that one might just barely demand the effort of resuming the drifting and the developments of their known ore bodies. Apparently, for a long time yet, they will not be able to resume a program of prospection and research.

- 6. The basic and the most urgent problem of the mining industry in Congo is the problem of expansion, that is the increase of the annual production from the ore reserves in sight.

But the golden rule of mining being to reconstitute these reserves and, if possible, to augment them by at least 10% per year, this pertains that the urgent practical problem will be the prospection.

- 7. Starting and organising the Prospection
 - i. Prospection is the base of all expansion and establishment of new activities.
 - ii. the base condition for a flourishing Congolese economy, and by that also for a satisfactory social and political atmosphere, the prospection should be subject to every attention from the Ministry of Mines and the urgent subject of a study in order to establish:

- a precise programme for 5 years;
- project for the 6th to the 10th year;
- prospects for the 11th to the 20th year.

8. Parastatal Organisation for Prospection

Taking example of numerous new countries, a parastatal organisation should be instituted with due urgency. It might be named:

Office (or Syndicate) Congolais économique de développement, recherche, formation et participation miniers.

Apart from:

- the research and prospection of new ore,
- the research and prospection of new ore deposits, and
- the founding of new mining companies,

this organisation should also have as object to encourage:

- the formation of a class of small and medium Congolese exploiters,
- the organisation of the mining artisanat,
- the social promotion of Congolese foremen, assistant engineers, supervisors and technicians.

It will organize, advise and give technical and financial help to the small Congolese exploiters worthy of public interest.

On the financial plane, its establishment should, within two years, be combined with the foundation of a "Caisse Populaire" for social and economic development, where the organisation will be the technical adviser and supervisor for the loans to be given to cooperatives and small mining exploiters.

9. Financing of the Organisation

- i. Being parastatal, it should, in the first instance, be financed by the State up to 50%.
- ii. Being of interest first and foremost to the existing mining companies or the foreign investor candidates, it should be financed by them in the same proportion.

Annual Budget

For the first 6 or 7 years, it should be financed:

- i. by an allowance on the annual State budget,
- ii. by a deduction of 5% of the value of the mining production.
- iii. As from the 8th year, certain of the participations of the organisation should begin to pay interests, increasing progressively with the development of the mining activities which the organisation will have contributed in establishing.

Very important Point

Various foreign technical aids - Belgian, Tunisian, Common Market, German, French - seem ready to assume - gratis - a program of prospection covering 5 - 6 years, in territorial zones of importance. The parastatal organisation should be kept informed on the results of these prospections.

Technical aid should also be solicited from other countries, chosen according to the necessities of Congolese politics. (Canada, Ireland, U.S.A., U.K., etc.).

For more ample details of this project, see my examinatory reports on:

- Office de Prospection
- Aspects économiques de la prospection
- Minéraux préférentiels.

10. From prospection to exploitation

- i. It should be evident that when the superficial prospection of the alluvial deposits has been well executed on the whole of the territory, it will essentially be a program for an exhaustive prospection for all the known ores that need to be established, comprising all the most advanced methods in:
 - geographic interpretation
 - geochemics
 - geophysics

- ii. For the establishment of the mining companies to exploit the first results of these prospections, an economic study on the products of this mining should be undertaken.

It should, however, instantly be stressed that it would be best to give preference to the mining projects aiming at the exploitation of the ores that are not already produced in the Congo, or that may serve as a base for the powerful refining industries, particularly complex electro-chemical or electro-metallurgical industries.

11. Perspectives on the zones and the pertaining ores.

Bas-Congo.

- i. Petrol. In the Bas-Congo, two companies are going to start drilling at the end of this year:

SOLICO - off shore
SOCOREP - on the mainland.

Based on geological reasons there seems to be some basis for optimism.

- ii. Copper. For the reason of the geological continuances along the shear zone stretching from Congo-Brazzaville all the way to Angola, an encompassing study on the copper and the pyritic ore deposits of the Bas-Congo should be undertaken.

This will be difficult, considering the sterile over-burden of sand and sandstones.

- iii. Potassium-Phosphates. The continuance of the geological horizons from Congo-Brazzaville and Cabinda permits one to presume very strongly the pertaining existence of such deposits, which might serve as base for a fertilizer industry, utilising some of the abounding Congolese energy.

- iv. Aluminium. The bauxites of Bas-Congo might allow the establishment of an aluminium industry. But the African world in particular abounds in deposits of high grade bauxite. Whereas our deposits are low grade, requiring a foregoing mechanical concentration.

To get over the technical and financial reluctance of the foreign capitalists, I can see only one possible solution: to grant them substantial fiscal advantages and financial cooperation with a participation by the Congolese State.

Conclusion: It is highly desirable, in view of the concentration of mining industry in Eastern and Southern Congo, to reestablish the equilibrium in favour of the coastal zone:

Kasai

- i. Diamonds. The localisation of new diamond carrying pipes should be pursued. The control of the artisanat, and the repression of the illegal traffic should be established.
- ii. Other ores. The indications of lead, copper, zinc and nickel should be subject to thorough prospections.

Katanga

It is quite clear that the U.M.H.K. has no need of our advice, but a colloquy should be opened with the company, to obtain its engagement in a dynamic program of expansion and prospection, as a counterpart to contingent authorizations for the transfer of foreign currency.

Doubtless, the company is in a position to establish an industry of nitrogen fertilizers and of plastics, based on coal from Luena. It should also be able to establish a program of development of secondary industries (Electro-metallurgic). It would seem appropriate to start prospections for radio-active ores.

South Katanga

The question on manganese should be reviewed on the highest plane. There seems no sense in consecrating 2/3 of the value of the ore for the mere transportation to Europe.

A study of the possibilities of an electro-metallurgy to furnish exportable products of high unitarian value is urgently needed; so is also a study of all details of the freight question (1,000 BF per ton seems exaggerative).

North-Katanga

GEOMINES Manono. It is highly desirable to aid this firm in its efforts to realize a production of 5,000 ton of cassiterite per year. Incidentally, let me point out, even stress strongly, the fact that the foundry of Manono has a smelting capacity of 10,000 tons of tin per year, in furnaces and electric energy.

This form of autarcy would add towards the Congolese balance in foreign currency to the effect of nearly 400,000 US \$ annually. But the foundry of Hoboken, which treats nearly 6,000 tons of Congolese cassiterite per year, would no doubt not be very much in favour of this measure. Would it not be possible to bargain with Hoboken to make it participate in the effect of developing the mining in Congo, particularly on the cassiterite section, in exchange for guarantees of long duration for the delivery of tin ores to its foundry?

Kivu-Maniema

The effort of the prospection for gold and tin should be launched in an extremely dynamic and realistic manner.

The artisanat should be promptly organized, mutually respecting the rights of all parties concerned. In exchange for the collaboration of the State, more dynamic action and a greater liberalism should be demanded from the companies.

To evade future friction between the provincial governments and the local population, someone should make an effort to put more work into their territory, to raise the disgracefully low rate of production per hectare (25 BF) to a more reasonable level of 1,000 BF. I would point out the necessity of encouraging the prospection of the carbonatites of Lueshe towards reaching its object.

An enquiry of all concerned - particularly UNION CARBIDE - should take place, to find out if a more realistic exchange rate and an investment agreement would not activate its going into production.

It should be obtained from the M.G.L. branch and the Falconbridge Company of Africa that they rapidly reach an agreement for the starting of the operations on the copper deposits at Ruwenzori.

The question of the methane gas of Lake Kivu should be cleared; the reserves of gas and the origin should be determined. In my opinion it should be reserved for the petro-chemistry, and not transformed into energy, of which there is high potentiality from an hydroelectric energy.

Uranium and radio-active ores. These ores, which are reserved for the State, should be subject to an urgent and very important program, as the period of the present depression may, in 8 to 10 years, be followed by a relative shortage of energy supply, at raised prices.

In mining politics, it pays to prepare the ground long in advance.

Kibali-Ituri

Kilo-Moto should be aided to the maximum, for the very good reason that the State owns 95% of the shares.

A 5-years program should be established for this province.

Central-Cuvette

Personally, I am not very optimistic as to the possibilities of oil in the Central Cuvette. However, if one could find foreign investors willing, the 800,000 km² of present interest should be sub-divided into zones of 50,000 km² with contracts precisising the prospectory obligations to be fulfilled during 5 years.

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RELATIONS OF THE PROBLEMS OF CONGOLESE MINING WITH THE INTERAFRICAN PLANS FOR ECONOMIC DEVELOPMENT

Economically, every country is interdependent of its neighbours. This goes for Congo too.

Within the framework of its economic and social development, it is imperatively necessary that it establishes periodic colloquies with its neighbours, particularly those to the East and South, aiming to undertake a common economic action, even to establish common programs - particularly on the planes of transports, and mining industry - for electro-chemistry, electro-metallurgy, or secondary transformations.

The development of Interafrican regional economy should be favoured to the maximum, and the supplies for the population ameliorated.

Education and Social Promotion

The Congolese mining industry suffers from a deplorable shortage of Congolese technical personnel, without exceptions.

Besides the local schools founded by the U.M.H.K., the M.G.L. and the GEOMINES (the latter closed since 1961), a mining school has been started in December 1962 at Bukavu. In three years its first technicians will emerge. It is yet too early to foresee the level of the finished technicians from this school, as they are only about to finish their first preparatory year.

The Secretary of State for the mines should exercise a particular vigilance with the practical mining education during the 2nd, 3rd and 4th Year, to secure that the candidates at their graduation are real mining technicians.

Comparing this with the forms of foreign countries (3 - 4 years of higher mathematics and science, then 3 - 4 years of mining school), to build the higher technical leaders of this country, the 4 or 5 best graduates from the Bukavu School should be selected, for a National Superior School of Mines to be founded within 3 or 4 years, for the perfection of their education with two years of supplementary studies, with - or after - one year of practical work.

With the experience obtained in other countries, which have renounced this, I do not believe in the accelerating of this education.

Superior School of Geodesy. - A first promotion of 21 graduates left the school in July this year, a second one will leave in another two years' time.

It is of urgent importance to establish an inventory of the needs of:

- the survey
- the mines
- the National Geographic Institute

to establish widened programs covering national needs, and to decide on the subjects preferably to be studied by the pupils.

As a general rule, it should be remembered that each certified Congolese technician, graduate from one of the schools and capable of replacing a foreign technician, represents an economy in foreign currency, amounting to something about 5,000 dollars per year.

On the energy plane, the department should study, during 1963-1964, the program for the foundation of:

- i. a technical school for electro-mechanical technicians
- ii. a superior school of management for the electric energy.

The financing of these schools ought to be done partly by the State, partly by the profession, and partly by the aid of UNESCO.

CONCEDING POWER

Before June 30, 1960 the most active conceding powers were:

the C.S.K.
the C.F.L.
the C.N.Ki.

At present, after the independence, the fundamental law has attributed the privileges of conceding power to the provincial authorities. The C.S.K. and the C.N.Ki. have been dissolved without even the fundamental law having been approved by the parliament.

In the territorial domain of the C.F.L., conflicts of competence have arisen between the mining department of the C.F.L. and the provincial authorities, over the question of the attribution of prospecting zones on the western flank of Ruwenzori.

Each province demands the materialization of its attributions in the form of a mining office with an allotted adviser.

A ticklish question remains: the division of the archives between 23 new provinces issued from the 6 old ones. The only complete basic documents fixing the reality and the authenticity of the mining rights are to be found at Bruxelles.

To bring order in this imbroglio is essential, but also seeing to it that certified photocopies are made of the authentic basic registers and documents, which will constitute the archives of the new provincial mining offices.

A contested question in connection with the conceding power is that of the duties paid to the C.S.K., C.F.L. and C.N.Ki. This should be examined, and a fair offer made, particularly to the C.F.L.

THE QUESTION OF THE CONGOLESE MINING PORTFOLIO
AT PRESENT THE SUBJECT OF THE BELGO-CONGOLESE LITIGATION

One day or another the Belgo-Congolese contestation will be decided, and it will probably be incumbent on the Ministry of Mines to secure the supervision, the management and the administration of this, and to nominate the directors to represent the Congolese State.

It is impossible to improvise, between today and to-morrow neither administrators nor auditors for the accounts.

Various measures, juridical and fiscal, obtrude themselves in favour of the establishment and development of juridical and fiscal offices, and of offices of audit commissioners for the accounts, of which the importance is crucial for forestalling and avoiding the flourishing of financial scandals in the managements of the great enterprises.

MINING LEGISLATION

A revision of the mining legislation has been prepared by two experts of the ONUC. This project has, on my initiative, been revised and approved by a half-official committee additionally composed with Mr. Vaes and Mr. Desmedt. It should now pass before an official committee designated by the Secretary of State for the Mines, for examination and approval, or modification.

FOREIGN TECHNICAL ASSISTANCE

Originating from various sources:

U.N.O.,
Belgium,
Germany,
Common Market,
France,
Tunisia,

it may work either by furnishing expert advisers, or by executing works of prospecting or engineering.

A plan of coordination should be established to avoid double employ and waste.

1680
10800
2600

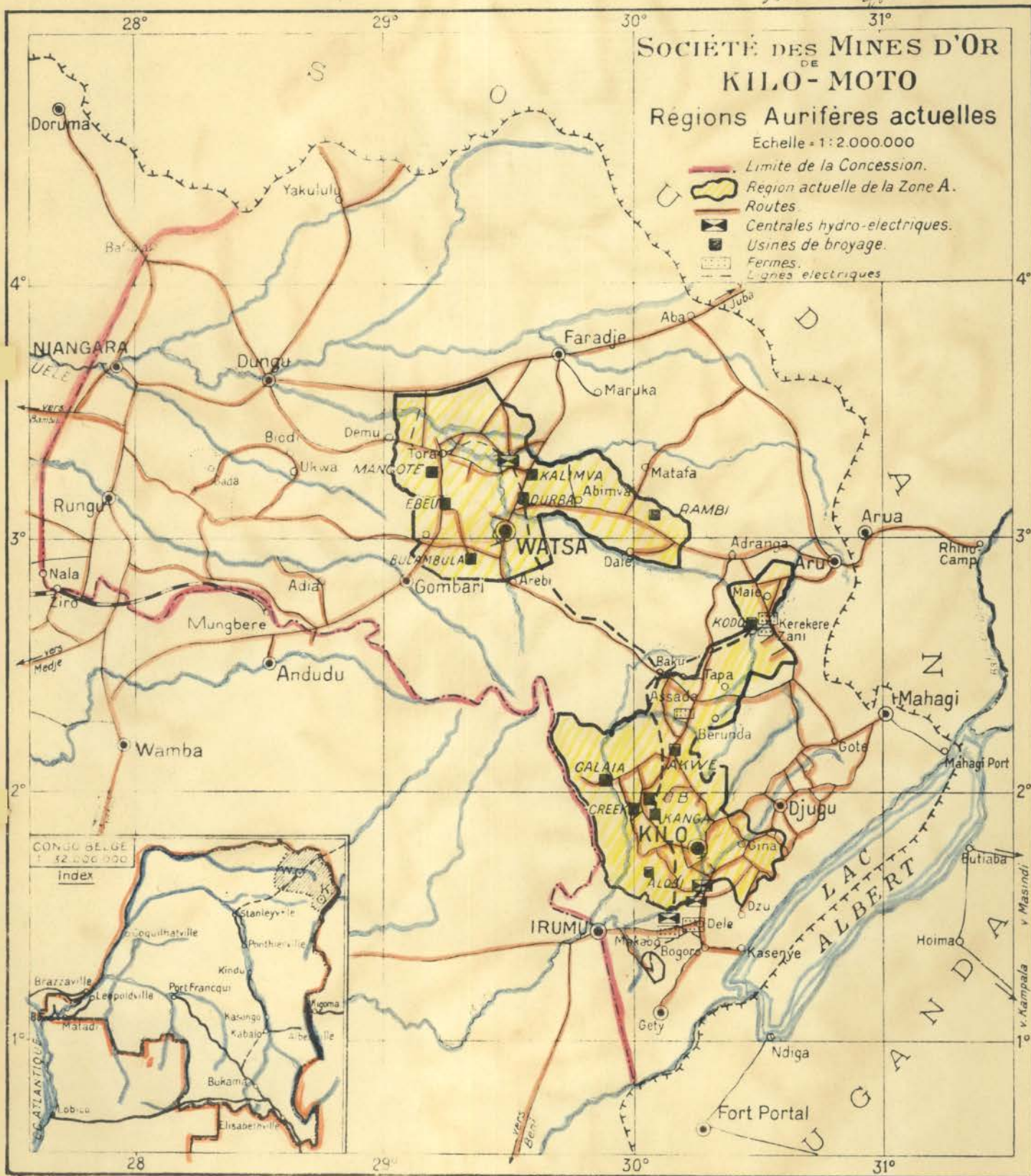
30x25 = 750
6x10 = 300
5x13 = 100
30x10 = 900
4500 km²

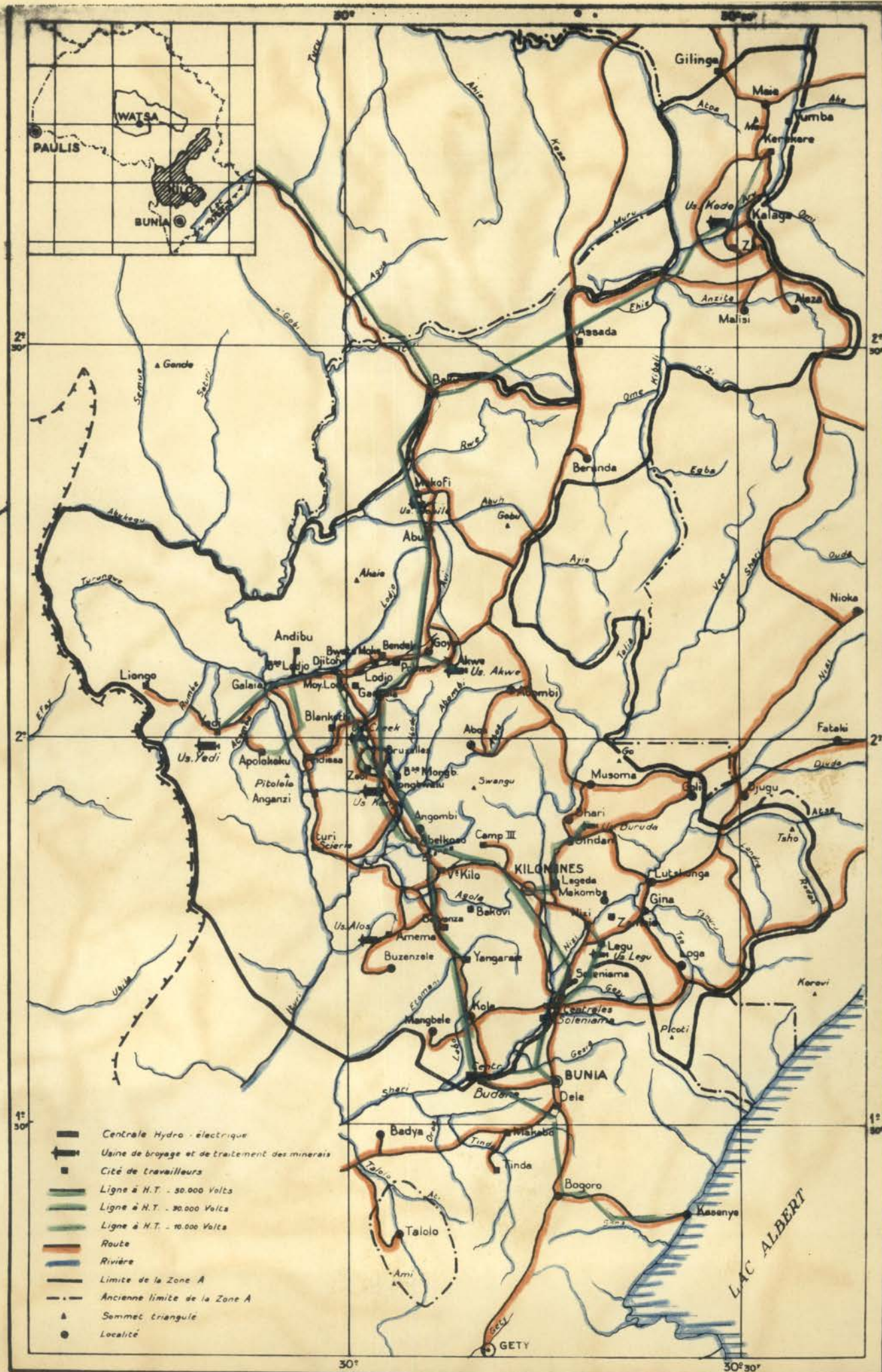
SOCIÉTÉ DES MINES D'OR DE KILO-MOTO

Régions Aurifères actuelles

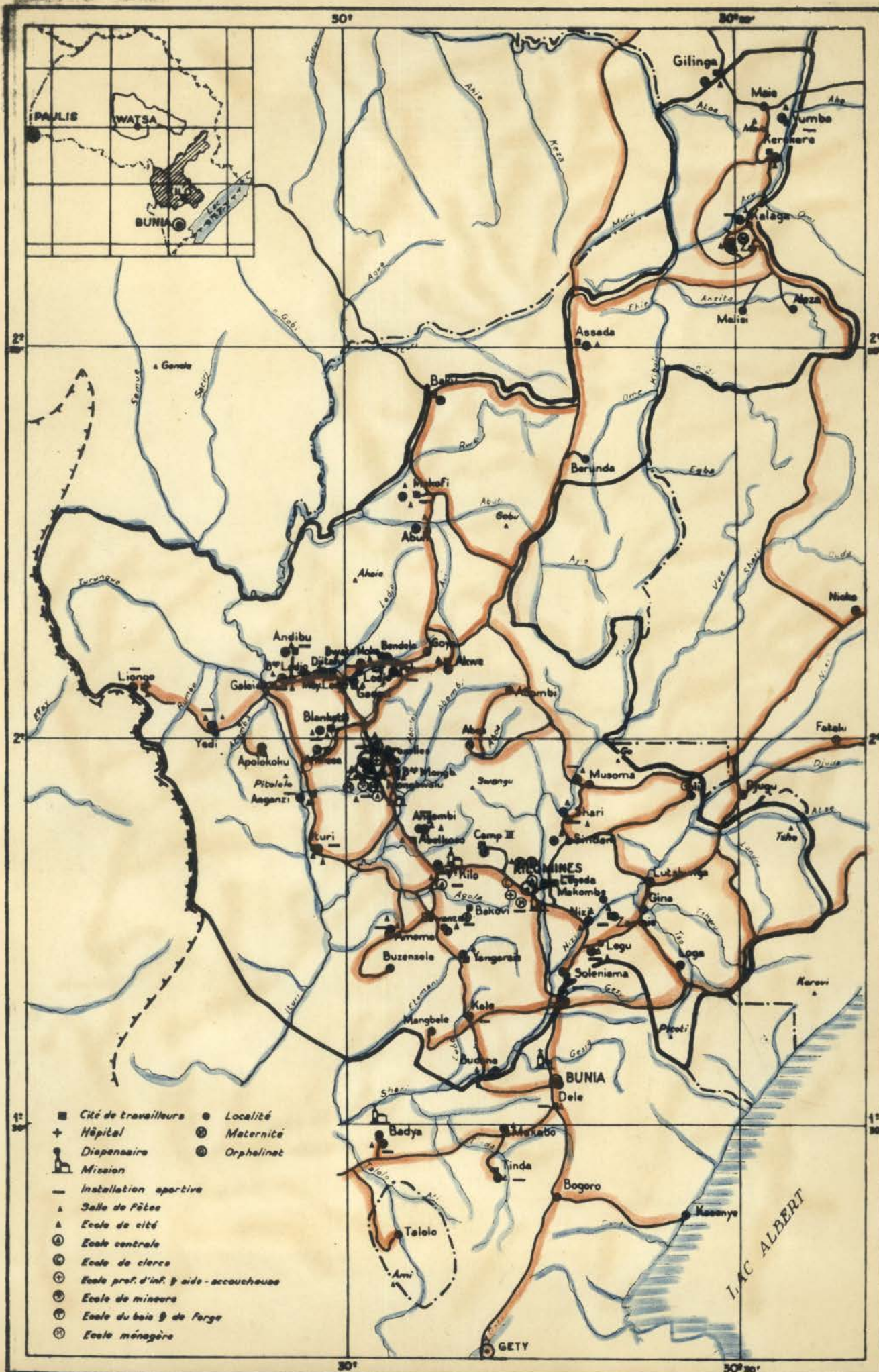
Echelle 1:2.000.000

- Limite de la Concession.
- Région actuelle de la Zone A.
- Routes.
- Centrales hydro-electriques.
- Usines de broyage.
- Fermes.
- Lignes électriques





KILO-MOTO -
Zone de Kilo : Usines et Centrales.



KILO-MOTO -
Zones de Kilo : Equipement social.

CONCESSION DU CUIVRE

UNION MINIERE DU HAUT-KATANGA

