

HOW ABOUT THE PROJECT OF THE TRANS-SAHARAN ROAD

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SUMMARY

Early in the 70_s, Algeria, Mali, Niger and Tunisia joined later by Nigeria and Chad decided to construct a trans-Saharan road composed of a trans-African axis Algiers Lagos going through Niger and three (03) branches linking from the North to the South: Tunisia from Ghardaïa, Mali from Tamanrasset and Chad from Zender. A coordination Committee was set up in 1966.

The project has two (02) main objectives:

- i) To unlock the deprived Saharan areas in each country.
- ii) To improve the trans-border road communications.

The first objective of unlocking the deprived Saharan areas has been reached since 3.500 km of roads have been constructed even if 2088 km are still tracks. The commercial exchanges are on the contrary very modest.

During the years, the Committee revealed to be a tool and a good example of South-South cooperation.

On one hand, the project could be designed and considered as a whole project in good coordination for a region gathering six (06) countries.

On the other hand, the mission of sharing experiences of the Committee reached results that exceeded the framework of the TSR project.

1.PRESENTATION OF THE PROJECT

1.1.History

The commercial trade through the Sahara goes back to antiquity. In the middle age, the gold of the Sahara was flowing to Europe and was serving to mint money [1].

The historian situates the continuous flow of trans-Saharan exchanges in the VIIITH century.

The initiative was that of Rostomide Dynasty of Tahert 776-921.

The geographer Abu Obeid El Bekri XI century [2] A.J.C. made a complete description of the roads towards the South in his "Description of the Northern Africa". Gold, ivory, salt, dates, fabrics and henna were the main elements of such trade.

By the end of the XVTH century, the coming of the Portuguese [3] on the coasts in the South and West of the Sahara will completely change the gold road and result in the desertion of the ancestral caravan roads.

According to Louis Blin [4], "In 1980 in France emerged the idea of the railway trans-Saharan liaison. Car industry was still not well developed. In 1895 in France, there were some 300 vehicles. While at the same period, the railway was reaching in Algeria, Aïn Sefra and Biskra, in the South West and the South East of Algeria respectively. In 1919 there was an economic objective which was to reach the internal delta of Niger to be

transformed in a large cotton producing area. Thanks to the water of Niger River. The finally chosen project in 1930 was to link Oujda to In Tassalit (Mali) via Bechar, Adrar and Reggane in Algeria. From Tassalit, the project splitted in two (02) branches, one towards Niamey via Gao, the other towards Segou via Tombouctou, that means via Niger Delta. Only a transverse remained to be constructed linking Oujda to Algiers to make the latter at three (03) days from Segou. The first section of the project "Renamed Mediterranea-Niger" will be constructed only in 1942 and reach Bechar (Kenadsa) before reaching Abadla 29 km South in 1948. A total of 275 km out of the 2574 were constructed for a carried tonnage of 2124 tons (mainly coal) very far from the expectations. It was the end of the project considered as non profitable".

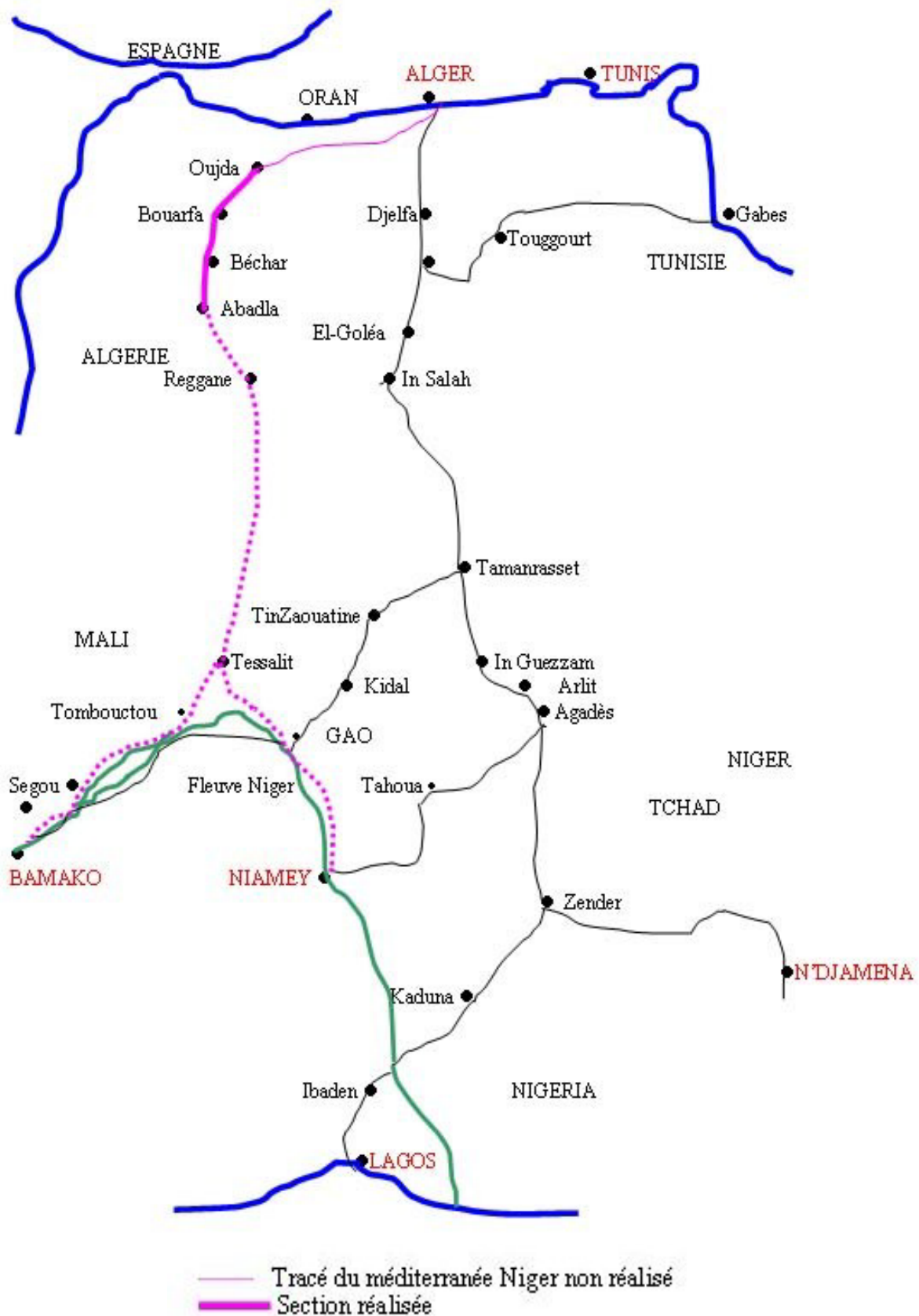


Figure 1 : le projet de liaison ferroviaire

1.1.1. Birth of a project called Trans-Saharan Road

The project called Trans-Saharan Road (TSR) resulted from the willingness of the African Heads of States who wished right after the independences of the 60_s reconstitute the trade across the Sahara.

The decision of the Heads of States was in keeping with the logic of the Charter of the Organisation of the African Unity (OAU) adopted in 1963. The article ii defines the economic integration as a prerequisite of the political unity.

The improvement of the road network in Africa had been classified among the priorities and the trans-African roads as a back bone of this network.

Algeria, Mali, Niger and Tunisia set up in 1966, a Committee designated as “Liaison Committee of the Tran-Saharan Road (CLRT)” at the initiative of the Economic Commission of the United Nations for Africa (ECA). Nigeria and Chad will joint some years later the Committee.

1.2. Description of the project

The project of the Trans-Saharan Road (RTS) has the form of a ramified network composed of:

- A central trans-African axis Algiers-Lagos crossing Algeria, Niger and Nigeria.
- And three (03) branches from North to South:
 - i) The Tunisian Branch.
 - ii) The Malian Branch.
 - iii) The Chad Branch.

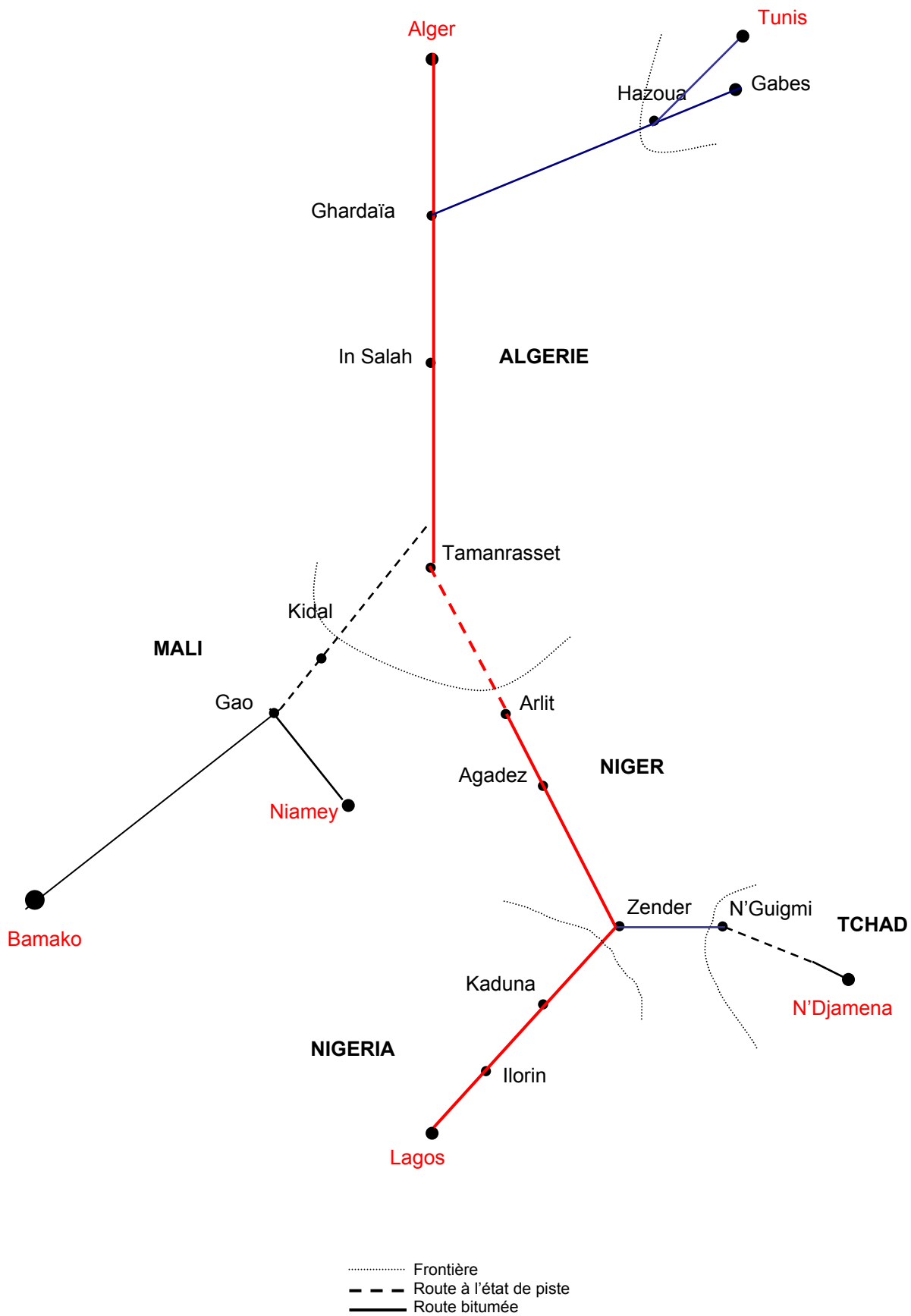


Figure 2 : SCHEMA DE LA ROUTE TRANSSAHARIENNE

The studies started with the technical and financial assistance of VNDP. The works began in 1970 (in Algeria). Today the sections in tracks conditions and or earth road represent a linear of 2088 and are in the middle of the desert in the territories of Algeria, Mali, Niger and Chad. Tunisia and Nigeria, as far as they are concerned, have covered their section of the RTS.

Out of a total of 2088 km in a state of natural track, half of the linear still does not bear the traffic which would economically justify to turn them into covered roads.

1.2.1. The trans-Saharan Road in each country

In Algeria, the RTS is an important axis of service road to the deep South the oil and gas areas and to landlocked regions at Mali and Niger borders. The role of the RTS is vital since it carries almost all the national supplies towards the South, and constitutes the main transit axis to the neighbouring countries and the heart of Africa. The RTS links important cities among which Djelfa, Laghouat, Ghardaïa before reaching Tamanrasset 2000 km from Algiers.

In Niger, a landlocked country but also a transit country, RTS constitutes a link between the Maghreb and the rest of the continent. On its way of 980 km between Algeria and Nigeria, it links the important uranium complex of Arlit, the city of Agadez and the former capital city of Niger: Zender. RTS offers to Niger the possibility of having access to the ports of Gulf of Guinea for its Southern part and to the ports of the Mediterranean Sea for its North Saharan part (region of Agadez and Arlit).

In Mali, RTS represents the hope for the development of the Northern region of the country, namely the cities of Gao and Kidal (350 km from the Algerian border), which maintain close and continuous relation with Algeria. The official statistics of the commercial and cultural exchanges with the latter do not illustrate the reality of the exchange volumes which are much higher.

In Nigeria, RTS links several important cities, Kaduna, Ibadan before reaching the port of Lagos. RTS is a section of the trans-African axis Algiers Lagos. It is a national and an international axis very important for the trade with the neighbouring countries, particularly Niger and Chad. Nigerian section is totally asphalted with more than half of the 1280 km in 2 x 2 lanes.

The Tunisian branch of the RTS is of 775 km between Ghardaïa and the port of Gabes. This section is totally asphalted in Algeria as well as in Tunisia. Tunisia made some important make up and strengthened the axis linking the trans-Saharan with the capital of Tunisia and towards the port of Gabes.

In Chad, RTS offers three (03) important possibilities i) the estate road of the active zone of Lake Chad from the capital city; ii) a link with the North of Niger via N'Guigmi. Niger and Chad sign a protocol of agreement for the make up of the RTS section linking both countries [5], iii) a potential clearing lane towards the ports of the Mediterranean Sea.

1.2.1. Location of the missing links

If we consider that the links being under construction are already part of the asphalted network, the linear of the missing links represents a total of 2088 km.

Table N°1: Situation of the Trans-Saharan Road by country in km

| Countries | Total linear 1 | Asphalted linear 2 | Unmade linear 3 | % asphalted 2/1 |
|--|-------------------|-----------------------|--------------------|--------------------|
| Algérie Alger In Guezam Silet- Timiaouine | 3332 | 2777 | 570 | 83 |
| Mali Timiaouine Gao Bamako | 1941 | 1236 | 705 | 64 |
| Niger In Guezam–Kogolam Zender- N'Guigmii | 1634 | 1379 | 255 | 84 |
| Tunisie | 302 | 302 | 0 | 100 |
| Nigeria Kogolam-Lagos | 1238 | 1238 | 0 | 100 |
| Tchad | 641 | 83 | 558 | 13 |
| Total | | | 2088 | |

By country and by order of importance, the linear in a state of national track is as follows:

705 km in Mali between the Algerian border (Timiaouine) and Gao.

570 km in Algeria, 170 km on the branch Tamanrasset and Niger border and 400 km at the branch Tamanrasset and Mali border,

558 km in Chad between Niger border (Bol) and N'Djamena, capital city of Chad.

255 km in Niger of which 200 km between Assamaka and Arlit and 55 km to the border with Chad.

On the trans-African axis Algiers Lagos (4500 km), there are only 370 kilometres (8.2%) remaining in a state of track of which 170 km in Algeria and 200 km in Niger.

2.FINANCING OF THE PROJECT

2.1.Financing principle

The established rule is that each country is responsible of the financing of the studies and the construction works of the RTS sections located in its territory. However, it should be noted that, within the framework of the United Nations assistance and the solidarity within the Committee:

The first of the economic feasibility study made in 1973 has been financed by UNPD. Such study concerned all the member countries of the Committee and had as object to give its opinion: i) on the type of infrastructure to select for the project, road or railway; ii) and on the routing of the trans-Saharan road.

The economic feasibility studies for the sections: Arlit-Assamaka (200 km in Niger), Massakory-Bol (490 km in Chad), Gao-Bourem (90 km in Mali) have been financed by international institutions as donations.

The environmental and technical studies of the two (02) sections Arlit-Assamaka 200 km and Kogolam-Takeita-Zinder 100 km, located on the RTS, respectively in the North and the South of Niger, have been financed as donations by two (02) member countries of the CLRT, Algeria and Nigeria.

The economic feasibility of the Silet section (in Algeria) and Kidal (in Mali) for a section of 750 km has been made on a donation Algeria/UNDP.

The fact that the countries are members of the same Committee and has the same common objective of regional economic integration reinforced the consideration to the financing requests and applications made by the various countries to the donors.

2.2.The financing of the construction of the project

Globally, we have two (02) groups of countries and two (02) types of financing:

The first group is composed of Algeria, Tunisia and Nigeria that have financed their sub project and are continuing to do it directly on their own funds without calling on the donors.

The second group is composed of the Sahelan countries: Mali, Niger and Chad that financed their sub project by calling on the donors.

2.2.1.The financing sources for the development of the project

The insufficiency of the financial resources constitutes the major obstacle at a better rate in the construction of the missing links.

Table N°2: The financing of the missing links of the RTS during the period 1996-2006

| Project | Nature of the works | Sources and types of financing | Situation of the project | Amount of the project |
|--|------------------------|---------------------------------------|--------------------------|---|
| Algeria Tamanrasset Niger border 325 km | Study and construction | Algeria | Works underway | 5.5 10 ⁹ A.D. 76 10 ⁶ US \$ |
| Silet Mali border 380 km | Feasibility study | Algeria | Study completed | 17.5 10 ⁶ A.D. or 0.25 10 ⁶ US \$ |
| Silet Mali border 380 km | Technicalstudy | Algeria | Underway | 2.2 10 ⁶ A.D. or 0.03 10 ⁶ US \$ |
| Mali Gao bridge 300 km | Construction and study | IBD loan | Completed | 9 10 ⁹ FCFA or 18 10 ⁶ US \$ |
| Gao-Bourem 90 km | Construction | IBD loan | Underway | 1.15 10 ⁶ FCFA or 2.3 10 ⁶ US \$ |
| Bourem-Kidal 265 km | Technical study | IBD loan | Underway | 1.51 10 ⁶ FCFA 0.3 10 ⁶ US \$ |
| Kidal-Timiaouine 350 km | Feasibility study | Algeria/UNDP donation | Completed | 2.2 10 ⁶ A.D. or 0.03 10 ⁶ US \$ |
| Niger Arlit Algerian border 203 km | Technical study | Algerian donation | Underway | 1.2 10 ⁶ US \$ |
| Section 36 km between Zinder and Agadez | Construction | Donation | Completed | 5.5 10 ⁶ US \$ |
| Aniyele Eliko Gonda (Tanout) 94 km Section Agadez-Zinder | Construction | Loan IBD, BAD, OPEC, BAGDA, FSD Niger | Underway | 11210.5 Million FCFA |
| Kogolam-Takeita-Zinder 100 km | Technical study | Nigeria donation | Underway | 0.6 10 ⁶ US \$ |
| Chad Djermaya-Massaget 47 km | Construction | FAD and Chad | Completed | 13.2 10 ⁶ FCFA 26.4 10 ⁶ US \$ |
| Massaget-Massakory 68 km | Technical study | IDB loan | Completed | 180.105 10 ⁶ FCFA 0.36 10 ⁶ US \$ |
| Massakory-Bol Niger border 490 km | Feasibility study | BADEA donation | Completed | 271.55 10 ⁶ FCFA 0.54 10 ⁶ US \$ |

For various reasons, there is a tendency for some countries to recourse to the construction of asphalted roads while the level of traffic does not always justify it. The progressive make up of the natural tracks, which enable to improve economically the condition of the road traffic, without having recourse prematurely to the costly asphaltting, is facing many reserves, particularly because of the hazard on the affectation of the maintenance credit that makes incredible the planning of the tasks.

2.3. The financing of the road maintenance

Except Tunisia and very recently Algeria (with the increase of the oil price), the CLRT member countries are suffering a chronic deficit of resources for roads maintenance. To that shall be added the irregular allowance of credit which make the planning uncertain. Such situation led the engineers to be sceptic regarding the construction of unmade roads for the Saharan regions, in spite of the saving we can obtain (almost one third of the project cost). The savings made in the construction of unmade roads turn into big difficulties for the users of the road, if the maintenance is not performed in due time and with the requested quality.

The three (03) Sahelian Saharan countries (Mali, Niger, Chad) called for external loans in important proportion for the routine maintenance as for the periodic maintenance. In Mali for example, the internal financing decreased from 37% for the period 1990-1996 to 22% in 2001 [6].

The projects financed by the donors have the credit to submit the construction to the supervision requested by the donors. The quality of construction is therefore much better. In order to face the uncertainties of the insufficient national resources, those very countries made reforms setting up roads funds supplied by affected incomes.

Those funds are generally supplied by:

- A royalty on the petroleum products (30 FCFA per litre of gasoline for Niger).
- A toll on the national roads out on rivers crossing by barge (Niger, Chad).
- A tax on the vehicle registration (Mali).
- Donations.

Good but limited results have been recorded. In Niger, the Autonomous Bank for Road Maintenance Financing (CAFER – Autonym case of maintenance financing), contributes to make them 50% in the financing of the road maintenance [7]. The other countries still continue to suffer from the weakness of the resources and the difficulty to totally enjoy the returns.

Chad implemented a new management strategy called “Maintenance by Level of Service” by which the maintenance contracts are not payable at unit price according to the quantities achieved but on the basis of a “monthly kilometeric lump sum” pre defined with as objectives:

- The obligation to maintain the road in fair condition the whole year long.
- The obligation to ensure a minimum comfort to the users by the limitation of the corrugated iron on the tracks for example.
- The obligation to ensure the possibility of driving at a given speed.
- The good functioning of the sanitation systems.

According to the Chadian [8], the first results of this new strategy are successful.

3. RTS SIGNIFICANTLY CONTRIBUTES TO THE UNLOCKING OF THE SAHELAN COUNTRIES MEMBERS OF THE CLRT

3.1. The road construction effort made by each country

Considering the low financial resources the Sahelian countries (Mali, Niger, Chad) made huge efforts of investment in order to develop their road networks and to improve the accessibility to all the regions of their territories.

Before its national independence in 1960, Mali was having a maintained road network of 4000 km of which 370 km of asphalted roads around Bamako. This network has been multiplied by nine (09) reaching thus today 3638 km of asphalted road.

In Niger, the network of asphalted roads experience a particularly important expansion between 1968 and 2005, increasing from 100 km to 3797 km. Chad made a huge effort in constructing 538 km of asphalted roads in six (06) years between 2000 and 2005 thus the asphalted network is 838 km on a total of a maintained network of 6221 km.

Table 3: Percentage of the asphalted roads in the three (3) countries of the Sahel

| | MALI | CHAD | NIGER | TOTAL |
|--|-------|------|-------|-------|
| Surface in 10 ⁶ km ² | 1.24 | 1.29 | 1.26 | 5.29 |
| Asphalted roads km | 3638 | 838 | 3700 | 8176 |
| Unmade roads | 13518 | 5600 | 10500 | 29618 |
| Total roads | 17156 | 6221 | 14200 | 37577 |
| % of the asphalted roads | 21 | 13.4 | 26 | 21.8 |

Despite the effort made for the construction of their road network:

- The percentage of the asphalted road in each one of the countries remains lower to that of the continent (29.6%) [9]. World Bank considers that the African countries should devote during the next ten (10) years, 4% of the gross domestic product to have adopted infrastructures.
- The density of 100 km²: 1.5 km for Mali, 1.46 km for Niger, 0,7 km for Chad remains lower to that of the (ECOWAS) Community of the West African States [10] (3.1 km²/100 km²).

4.2. What RTS represents in each road network

Though not completed, the trans-Saharan road constitutes for each one of the countries, an important axis and a clearance possibility to the sea ports.

The asphalted linear of RTS represents an important part of the asphalted network in Mali and Niger, respectively 33.4% and 37.2%.

Table 4: RTS and the road networks in CLRT countries

| | Mali | Niger | Chad | Algeria | Nigeria |
|----------------------|-------|-------|------|---------|---------|
| Asphalted network | 3638 | 3700 | 838 | 75000 | 70000 |
| Asphalted RTS linear | 1236 | 1379 | 83 | 3332 | 1238 |
| National network/RTS | 33.4% | 37.2% | 10% | 4.5% | 1.8% |

For the three (3) countries of the Sahel, the asphalted network fundamentally ensures the national and international links while an important track network ensure the rural links.

5. THE ACTIVITY OF THE COMMITTEE

5.1. The statutory missions of the Committee

Statutorily the Committee has as missions:

- The coordination and the coherence of the layouts between the member states.
- The collecting, the sharing of information and experiences in the field of the road development and maintenance.
- The assistance to seek the financing at the national, regional and international institutions.

5.1.1. Statutes in adequation with the mission

Set up in 1966 with a legal entity, the Committee celebrated last year its 40TH anniversary. Its long life is due to the excellent relations existing between the countries composing it to the interest those countries are having for the trans-Saharan road project (RTS). The large flexibility conferred by the statutes to the functioning of the Committee, also played an

important role. The initiators of this Committee design a statute in good adequation with the mission it was entrusted with.

While offering a general framework of concertation, coordination and experience sharing and solidarity, the Committee statute allows each country to be sovereign regarding the pace of progression of its achievements according to its financial means.

The fruitful and regular practice of concertation during years thus led to the broadening of the field of the technical exchanges and discussions dealt with the concerns regarding the road maintenance, transport economy, trade and other technical issues that resulted in the schedule of training programs organised by CLRT.

5.2. The coordination

Led by the Secretary General, the coordination mainly deals with:

- ✚ The organisation of sessions every six (06) months and the implementation of the decisions made by the Committee during the sessions. Those are very regular and took place alternatively in the Head Office of the Committee in Algiers and in a CLRT member country.
- ✚ The follow up the coordination and the boosting of the project of the nature of those mentioned in chapter 3 “financing”.
- ✚ The representation of the Committee in the events and forums mainly the African ones dealing with the field in relation with the trans-Saharan road project, and namely the participation to the round tables organised by the CLRT member countries on the transport policy and the development of road infrastructure.

5.3. Sharing of experiences and improving the knowledge

If there is a field where the RTS project recorded the best results, it is in fact in the sharing of experiences and improving the knowledge.

Each session is an important period for the road directors of each country to share their experience, visit the achievements and participate to the conferences organised in this purpose.

In the field of the improvement of the knowledge, the Secretary General organised during the last ten (10) years, several international trainings and seminars with the collaboration of the country where the event taking place and thanks to the financial contribution of the financial institutions close to the CLRT.

5.3.1. The international seminars

The seminars gather and specialists of the CLRT member countries, as well as representatives of the international financial and road institutions, on economic issues in roads constructions and on the concerns in the field of support and boosting the commercial exchanges. The preparation of the last seminar held in Algiers in 2004 resulted in prior working out of big reports drafted by the road directors of the CLRT member countries, on the economy of each country, and on the transport policy particularly the road infrastructures. Those reports, as well as the documentation on CLRT are available on the CLRT web site: www.clrt-dz.com.

5.3.2. The training programs

Between 1996 and 2006, the Committee organised four (04) training programs for the engineers of the CLRT member countries. These trainings profited each time to four (04) trainees per country and last two (2) to three (3) weeks.

Before the trainings, technical reports are worked and by the trainees about their technical concerns according to the terms of references pre defined and approved by the Committee.

The last training held in Tunis in May 2006 resulting in achieving a CD (disseminated to the administrations and engineers schools), where are compiled the experiences of the CLRT countries in the fields of:

- Unmade roads
- Combating the sanding up
- Road sewage drainage system in desert environment
- Road funds
- Highway experience.

These meetings (seminars and training programs), the Committee is planning to continue, have been organised in Algeria, Mali, Chad and Tunisia.

6. BALANCE SHEET

6.1. The physical achievement of the project

The project has started in early 70_s with a lot of authorisation, but by the end of the 80_s it shows down with the economic crisis. It is only during these very recent years that it resumed..and today the missing links of the axis Algiers Lagos are under construction in Algeria and Niger. Capacity extensions of the RTS are also underway in Nigeria and Algeria, on the same axis.

In the strictly Saharan zones, since 1973 it has been constructed within the framework of RTS: 1400 km in Algeria, 673 km in Niger, 1000 km in Mali, 83 km in Chad.

The first result is that the CLRT has been designed and considering as a whole project in good coordination for a region gathering six (06) countries.

The economic feasibility studies of the border sections have been made jointly between the concerned countries. Thanks to an institutionalised cooperation and a continuous concertation within the Committee. They enabled therefore to find and concerning the layout the best compromises of balance to satisfy each country in linking their agglomerations, without sacrificing the research of the transport economy for the traffic in transit. The RTS project has today good prospects. The present volume of studies and works underway is experiencing a noticeable phase.

6.2. The improvement of trans-border road communication and the fostering of the commercial exchanges between the member countries of the Committee.

The physical achievements resulted in a real improvement in the land transport and the unlocking for each one of the countries.

But the selection of the sections and the priorities met a national vision. It is significant enough to note that it is the border sections that progressed less. This is true for three (03) borders on a total of five (05).

Considering the good political relations that link the CLRT countries, the commercial exchanges are low. The cumulated total exchanges of Algeria and Tunisia with the other four (04) CLRT countries are estimated to hundred thousand tons [11]. The traffic is of five hundred (500) vehicles at the Nigeria-Niger border and one hundred (100) vehicles a day, at the Algeria-Niger border.

There is in fact, a real need to assist the completion of this project by institutional measures, in order to organise and facilitate the commercial exchanges. Such concerns have in fact been underlined in the recommendations of the international seminar organised in Algiers in 2004 and considered by the Ministers of Transport and Public Works during the 56TH Session of the CLRT held in Bamako, in September 2006 [12].

6.3. The cooperation

The trans-Saharan road project is a good example of South-South cooperation that exists since forty (40) years around a concrete project.

It has the merit to maintain through the sessions, seminars and training programs very useful contacts between the technicians of six (06) countries of a same region, around common technical and economic concerns. Without being able to be quantified, the profits generated by the experience sharing represent a very positive result. Particularly the training programs for improving the knowledge of the road managers.

6.4. Observations

We would conclude this communication by some observations:

- ✚ Considering the financial capacities of the concerned countries, the project is experiencing a relatively good progress. Tunisia constructed the 40 km it was concerned with, while the Nigeria section (1200 km) is totally asphalted. Algeria is experiencing some delay which is being made up for these last years. A lot remains to be done in Chad and on the Mali branch where not even a kilometre has been constructed during these last ten (10) years, between Tamanrasset and Gao (1100 km), not even in asphalted road besides Gao bridge or Niger River inaugurated in September 2006. It is true that such structure of 300 m long put an end to the crossing by barge of the Niger River which was very constraining and thus opens new prospects for the RTS in direction of the North of Mali.
- ✚ The procedures are very long and the construction time of a section announced is the one when it is concretised on the field.
- ✚ The realisation quality should be much more improved in some countries since the maintenance is not going very well along with and is recurrently suffering from the lack of credits.
- ✚ In order to reassure the technicians and to encourage them to recourse to economical techniques, it is important to reinforce the systems and mechanisms so as to enable the allocation of maintenance credits in volumes and in due time, particularly to strengthen the economical technique of the unmade roads in areas of low traffic.
- ✚ At the institutional level, the idea of setting up a body with a regional discussion, in charge of the follow up and dynamising the commercial exchanges is taking a very long time to be implemented. It is in fact, a recommendation resulting from an international seminar [13] which goes along the objectives of the RTS project.

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