

# PRESENTATION

## CHAPTER I.: INTRODUCTION

### 1.1. BURUNDI GEOGRAPHIC INFORMATIONS

#### COUNTRY

#### BURUNDI

1

#### Geographic situation

- Near the west rift valley, beside the Tanganyika lake
- In the middle of Africa (Great lakes Region)
- In South of the Equator line (3 degree)

2

#### Neighbor counties

TANZANIA (East and South-East), CONGO (West and South-West) and RWANDA (North)

3

#### Seasons:

#### Two seasons

- Rain season (October-May)
- Dry season (June-September)

4

#### Area and surface

- In general, a mountainous area in the middle
- With two very narrow plains in the West and in the East
- Surface: 27800 km<sup>2</sup>

5

#### Population

6,000,000

6

Water

- In general the all area has some small rivers
- The Tanganyika lake is the biggest reservoir for water supply to the capital Bujumbura and other nearby cities
- There are in the North 4 very small lakes

## 1.2. ECONOMIC SITUATION INFORMATIONS

I.

Natural resources

1

Ores

- Very few, not enough to be exploited by companies,
- Only there is a Nickel exploitation project in preparation - with a South-African company ENDOVER

2

Soil fertility

In general, the soil is not very fertile

3

Agriculture

- The most part (>95%) is a family small agriculture for direct consumption,
- A little part is for exportation: Coffee, Thee and Cotton agriculture

4

Forest and

Reforestation

There are some natural forest and the Government encourages the peoples to reforest

II.

Breeding and Fishing

- There is familial breeding of Cows, Pork, Goats, Sheep, Chickens, j-.(for fumier, meat and milk resources)

-Fishing is especially made in the Tanganyika lake (very good quality fish)

III.

Transport lines to foreign countries

- Water line though the Tnganyika lake to reach the nearby ports of TANZANMIA (Kigoma), ZAMBIA (Lusaka), MLAWIA (Mpulungu) and some small others of CONGO

- sea area, no sea transport line

- Roads: there are roads to reach the neighbor countries but two of them are the most important roads for tank truck and transit goods carrying to reach Dar-es-Alam (ANZANIA) and Mombassa (KENYA) ports;

- Air lines: from the Bujumbura international airport

IV

Tourism

There are beaches (on the sides of the lakes), sceneries, small parks, natural reserves, mountains, falls and small hydrographic establishments

V

## Industry or manufacturing

- Most of them are in the capital Bujumbura. But some others are in the rural area. There are:
- Drinks manufacture: BRARUDI, BRAGITA,
- Coffee manufacture: OCIBU, SODECO,
- Cotton production and manufacturing: COGERCO, COTEBU, RAFINA,
- The production and manufacturing: OTB,
- Sugar manufacturing: SOSUMO,
- Many other small manufactures and workshops.

VI

## Trading

The importation is greater than the exportation.

The importation concerns the foreign manufactured products from China, Taiwan, Japan, France, Germany, Italia, j-

The exportation concerns especially the coffee, the thee, the cotton

VII

## Energy resources

Hydro-energy is the most utilized. The total potential HP capacity is 300MW and the total already installed capacity is 30 MW (10%).

The petrol is imported. (1l cost: 0.8 \$ US);  
Wood for heating (70 % of the all used wood),  
Sun lotion is no exploited until now,  
Peat: used especially for cooking in big people center as  
schools, camps ;-

### 1.3. COOPERATION

BURUNDI country is opened to with every country.

Case study:

Particularly, BURUNDI has very good cooperation with CHINA especially in technique and Economy.

- From 1972, CHINA has promised to construct the first national SHP plant on the MUGERE river near Bujumbura (8 MW). In 1982, this SHP began to output electricity.
- Actually CHINA has accepted to finance the MPANDA SHP project (10.4 MW).
- CHINA has also accepted to build a technical university at Bujumbura to increase technical engineer staff.
- There is many other works: health, textile industry, roads construction;-.

This good and effective cooperation has been especially confirmed through the two last regular complete revisions of the MUGERE SHP even if some times the security on the field was disturbed. The last one has been supported by the CHINA Government (more than 400,000 US \$). Also, two Chinese staffs assisted by three Burundian operators are going on with preventive and curative maintenance of the equipments of this SHP plant.

### 1.4. ELECTRICITY AND WATER

The Electricity and Water production and distribution are assumed by a national company: REGIDESO.

- Total staff: 1200 persons,

- Service duration: 40 years. From this 30th of June will be the 40th anniversary.

There is another small public department (DGHER) which supply water and electricity in rural small cities to promote the development of the rural areas.

## CHAPTER II.: THE SHP IN BURUNDI

### 2.1. HISTORIC

- 1959: An overhead electrical line 70 kV from RUZIZI I SHP plant of CONGO supplied Bujumbura.
- 1982: The first national SHP plant (MUGERE 8 MW) constructed by the CHINA Government has also supplied Bujumbura since May, 12. 1982.
- Since that date to 1988, eight (8) other SHP plants have been constructed progressively to supply the main centers inside the country, as showed on the national electric network map.

This network is actually supplied by:

- 9 national SHP with a total installed capacity of 30.9 MW;
- 2 foreign SHP plants (one of SNEL-CONGO with 4 MW, another of SINELAC-CEPGL 13.3 MW) by two overhead HV lines.

All these 11 SHP assume the BURUNDI electricity supply by HV electrical lines: 110 kV, 70 kV, 35 kV, 30 kV and 10 kV.

There is a thermal power station of total installed capacity 5.5 MW (2x1.5 MW, 2x1.25 MW) which has been constructed in June 1996 for supply of the capital Bujumbura.

Actually there are 4 national interconnected SHP (RWEGURA, MUGERE, RUVVYIRONZA and NYEMAGA) and 5 isolated SHP (GIKONGE, MARANGARA, KAYENZI, BUHIGA and SANZU).

## 2.2. SHP IN BURUNDI

See the table A

As presented through this table,

\* Two foreign SHP contribute to supply in electricity the Burundian interconnected grid:

- RUZIZI I: belongs to SNEL CONGO company (total installed capacity 39.7 MW, power part to BURUNDI 4 MW) by a 70 kV overhead electrical line.
- RUXIZI II: belongs to SINELAC CEPGL (BURUNDI, CONGO, RWANDA) company (total installed capacity 45 MW, power part to BURUNDI 13.3 MW) by a 110 kV overhead electrical line.

\* Five SHP projects are presented:

- 2002 to 2005: MPANDA SHP (10.4 MW) and KABU 16 SHP (20 MW);
- After 2005 two other SHP are projected: Jiji 003 (15.5 MW) and MULE 34 (16.5 MW);
- The 5th is RUSUMO FALLS MHP plant (61.2 MW) which will belong to the OBK (BURUNDI, RWANDA, UGANDA, TANZANIA) international

organization.

Moreover, our company, REGIDESO, is constructing HV lines to prepare for few years the interconnection of all it`s SHP. So, the BURUNDI will be electrically supplied by one interconnected grid more reliable.



## CHAPTER III: OUR BENEFITS IN THIS TRAINING WORKSHOP

### 3.1. ABOUT SHP

In our company, we are in two technical electrical Services: Power Production (Mr NTUNZWENIMANA Gagarine) and Network Design and Planning (Mr NIYONGINGO Nehemie). As technical staff, this training workshop has given us many detail knowledge's:

- The different structures of a SHP from design, construction until exploitation;
- The different inspections to prepare the revisions or the refurbishments;
- The abilities of CHINA (it`s companies and research centers, in particular HRC) to promote the SHP inside and in foreign countries;
- The CHINA cooperation about SHP promotion very useful for developing countries (especially African countries);
- Complete case study presentation

Our own case study: MUGERE SHP (near Bujumbura); see ANNEX B;

- The comprehensive exploitation of dams (water supply, irrigation, power generation, flood protection, fishing, sightseeing i-).

### 3.2. RECEPTION, VISITE AND TOURISM

CHINA (HRC) has made us a very good reception to be considered as example;  
The manufactures visited (KVAERNER, LMMW) have given us opportunities to realize  
the Chinese potential SHP partners to BURUNDI (REGIDESO);  
Tourist sites, rural areas and cities visits have been for us opportunities to see the East  
CCHINA human activities and environment which are very good examples to our country.

## BREF

This training workshop has given us more knowledge and attention to pay on SHP also  
the CHINA's ability to promote these stations among developing countries. This is a very  
important thing to our country BURUNDI (and our company REGIDESO) which use  
almost only SHP to produce electrical energy. It is sure that this will be very useful for  
the already being and future HP.

## CHAPTER IV: CONCLUSION AND SOME RECOMMENDATIONS

Began by a very good reception, the SHP training workshop has been successfully made.  
HRC has used all the means to disponibilize highly qualified and experienced teachers  
to give us their knowledge in SHP: technical design, business and trading.  
It is sure that this improves for us how to serve our country (particularly our company  
REGIDESO) when we will be back.

This contribution effort among developing countries has merited our greatest  
congratulations to CHINA People Republic Government, particularly to HRC.

About these training workshops, we would like to express the following recommendations:

- May such training workshop go on until outreach the all (developing) countries> It is also a way to increase their development.
- It is desirable to be created a HRC internet site for technical works, publications ;-This will be very useful for us and for others even if fare we are. It will be a great contribution to develop the all world especially our country (among developing counties) in Hydro Plants.

Last but not least, we could not finish our presentation without expressing our sincere thanks to CHINA, especially HRC and all it`s staff, for all the effort used to receive, to accompany and to teach us from the beginning until the end of this training workshop. We go back with the very distinguished fruit of your laborious work that we carry very honestly to our country. It gives us more ability to the works of our company.

To end, we thank to all the representatives of CHINA People Republic Government, TCDC, the representatives of HRC, all the HRC`s staff and our friends trainees.

THANK YOU.

TCDC INTERNATIONAL SHP  
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HANGZHOU, CHINA

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