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SOCIO-ECONOMIC IMPACT OF THE USE OF SOLAR ENERGY BY THE INHABITANTS OF THE CITY OF BASOKO IN THE PROVINCE OF TSHOPO; IN DR Congo.

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ABSTRACT

The general objective of this study is to identify the impacts of the use of solar panels on the daily lives of the inhabitants of the city of BASOKO, in the province of TSHOPO in DR Congo.

In order to determine the socio-economic impact of the use of solar energy on the population of Basoko, we used the systemic method supported by documentary techniques, observations but above all, by that of direct or indirect interview or interview on the basis of a pre-established questionnaire.

After analysis and processing of the data; the present research reveals that solar energy has positive impacts on the households of this entity since it allows this community to meet their basic needs: food, health care, schooling and purchases of various equipment. (See Tables: 5, 6 and 7 of this work)

KEYWORDS: impact, socio-economic, use, solar energy, Basoko, Tshopo, DR Congo.

1. INTRODUCTION

Energy is part of the universe in which we live. We do not see it, but we can observe the effects: it is thanks to energy that the earth turns around the ground, that plants grow and that animals grow.

Plants know how to use sunlight directly to live. Animals and humans feed on plants or other animals, and thus manage to recover the energy necessary for their growth and activities.

In addition, energy can pass from one form to another without getting lost.

Solar energy is the main source of energy on earth and is the source of most of the energy sources available on earth. Indeed, the sun is the key element of the earth's climatic machine and therefore it participates in the movements of winds (wind energy) and water (hydroelectric energy). In addition, thanks to solar panels installed on the facades or roofs of buildings (flat collectors).

For centuries, there has always been a correlation between energy use and quality of life.

Indeed, having energy is a factor of progress. As soon as energy is available in abundance, opportunities that contribute to development appear. There is undoubtedly a positive relationship between energy availability and development. Thus, increasing the energy consumption of an environment is not only a legitimate objective, but an imperative it is currently accepted that per capita energy consumption is an indicator of the standard of living in a society. This same observation has been observed over the last three years in the city of Basoko with the influx of solar panels that are used in more than 70% of households.

In order to gauge the veracity of the use of solar energy in the city of Basoko, we asked ourselves the following questions:

- What is the current state of the use of solar panels in the city of Basoko?
- What is the socio-economic impact of the use of solar panels in this entity?
- How to integrate the use of solar panels into the development strategies of the city of Basoko?

Faced with this concern, our study proposes to verify the hypotheses according to which, solar panels would occupy the first place and the use of solar panels would have a positive socio-economic impact insofar as they would constitute a source of leisure and financing of several households of Basoko and in the end, the solar panels could be integrated into the development strategies of the city of Basoko only if they were grouped to produce a energy capacity that would supply the city of Basoko with a high-power system to facilitate services of several kinds.

The objective of this study is to identify the impact of solar panels on the experience/socio-economic of the inhabitants of the city of Basoko.

II. MEDIUM, MATERIAL AND METHODOLOGY

The city of Basoko that constitutes the framework of this study is located in the Territory that bears the same no, in the province of Tshopo in the Democratic Republic of Congo. It has an area of about 14Km² with an estimated population of 45820 inhabitants, or a density of 3272.85 inhabitants / Km².

It spreads over a flat space whose relief is cut by very small slopes without natural disasters and accessible by all possible routes. It is located between 23° and 25° meridian; its altitude varies between 120 and 800 meters with a latitude varying from 26 °. The climate is of the humid tropical type characterized by a rainy season that lasts from April to November and a dry season that goes from December to March each year.

The material of our research consists of solar panels used by the population of the city of Basoko. In order to determine the socio-economic impact of solar energy use on the population of Basoko, we used systemic analysis. It is based on the notion of the system, that is, the interdependence of the parts in relation to the whole or modification of a single element leads to the modification of all the other elements and the transformation of the system.

The system, defined by Joël de Rosnay, is a set of dynamically interacting elements, organized according to a goal. And every system pursues a goal or purpose of its own; for mechanical systems, all designed and manufactured by men, we speak of utility.

When we consider a system as such, we are faced with two environments, internal and external; that is, the interactions of the elements with each other and the influence of the outside. At the end of this influence, we can see a malfunction of the system; Modifying an element can transform the operation of the entire system.

The data collection techniques focused on observation of the facts, interview, questionnaire and documentation which allowed us to get in touch with our respondents, exchange and discuss in depth for certain situations.

Our sample was drawn at random but divided into different age groups and genders. In this way, we selected 50 respondents.

The purpose of the survey is to collect all the information related to the impact of the use of solar energy on the daily life of this population.

III. PRESENTATION AND INTERPRETATION OF RESULTS

The results obtained from our field surveys are in tabular form.

Table 1: Main activities of the surveyed population

Activities	FRI	%
Agriculture	15	30
Sins	05	10
Commerce	17	34
Agent and official	10	20
Other	03	06
Total	50	100

Source: our field surveys, 2020

It appears from this table that the high frequency is 17 cases of respondents having as an activity, trade, or 34%, followed by agriculture with 15 cases, or 30%, agents and officials of the State with 10 cases, or 20%, fishing with 5 cases, or 10%, and others with 3 cases, or 6%.

Table 2: Respondents' Level of Education

Level	FRI	%
Without formal education	03	06
Primary	13	26
Secondary	28	56
Academic	28	12
Total	50	100

Source: our field surveys, 2020

Reading Table 2, the high frequency is at the secondary level of study with 28 cases, or 56%, followed by the primary level with 13 cases, or 26%, at the university level with 6 cases, or 12% and 3 cases representing respondents without school training, or 6%.

Table 3: How the School System Is Used

How to use	FRI	%
Panel only	10	20
Panel with battery	14	28
Panel + battery + converter	26	52
Total	50	100

Source: our field surveys, 2020

It appears from this table that respondents with 1 to 2 school panels representing 33 cases, or 66%, followed by those with 3 to 4 panels with 12 cases, those with 7 to more with 3 cases, or 6% and those with 5 to 6 with 2 cases, or 4%.

Table 4: Reasons for the preference of the panel over other energy sources

Reasons	FRI	%
Timely flow	02	04
No fuel consumption	09	18
Easy installation	01	02
Direct current, independent and voluntary	33	66
Hardware lifespan	05	10
Total	50	100

Source: our field surveys, 2020

Table 4 reveals the results below, more respondents preferred the solar panel for the simple reason that its current is continuous, independent and at will (66%), 18% emphasize that there is no fuel consumption, 10% note the life of the equipment, 4% say timely current and finally, 2% keep the installation easy.

Table 5: Socio-economic benefits of respondents' use of the solar system

Advantage	FRI	%
Entertainment	03	06
Economic gain	07	14
Savings on fuel use	06	12
Savings on necessary maintenance	08	16
Use of television, video, radio at home	17	34
Continuous service	09	18
Total	50	100

Source: our field surveys, 2020

From this table, it turns out that 34% of households use television, video and radio sets at home, 18% note the continuous service, 16% of respondents emphasize savings on necessary maintenance, 12% say

savings on fuel use, 14% of households derive economic gain on the other hand 6% say they make entertainment.

Table 6: Socio-environmental benefits of solar energy use

Advantage	FRI	%
Zero noise pollution	28	56
Zero air pollution	17	34
Less bulky	05	10
Total	50	100

Source: our field surveys, 2020

The table above tells us that 56% of the households surveyed said that there is zero noise pollution, 34% support zero air pollution and 10% of households stress that they are less cumbersome.

Table 7: Impact of Solar Energy Use

Impact	FRI	%
Schooling	15	30
Feeding	20	40
Equipment	10	20
Health care	05	10
Total	50	100

Source: our field surveys, 2020

It appears from the table above that 40% of respondents provide food for their households, 30% of households send their children to school, 20% equip their homes and 10% support the health of their households.

IV. CONCLUSION and SUGGESTION

The purpose of the study was to identify the impact of solar energy on the daily life of the population of the city of Basoko. It turned out that solar energy has a positive impact on the households of this entity since it allows this community to meet their basic basic needs: food, health care, schooling and equipment. But a synergy of population, official and private partners and the Congolese State would be a sustainable measure to promote energy in this environment.

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