

SCIENCES & TECHNOLOGICAL INNOVATIONS BULLETIN



NATIONAL SCIENTIFIC COUNCIL

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a morning of reflection at the
Sultani Hotel

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Call for publication in the
Congolese Review of Sciences and Technology

ISSN(Online): 2959-202X

ISSN(Print): 2960-2629

DOI prefix: 10.59228/rcst

www.csnrdc.net

BULLETIN N°015 January 2024

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Staying the course by consolidating what you've learned



Prof. Pius MPIANA TSHIMANKINDA
The NSC President

Scientific Research and Technologic Innovation in Democratic Republic of the Congo has known a rich journey in 2023. And the Science Bulletin and Technologic Innovation has always had the honor and pleasure of being a faithful standard-bearer. From the Congolese genius research to the production of knowledge in various fields of research, it was a fine exercise. Better, a pedagogy that did not produce sterile learning. On the contrary, the instruction has been fruitful. The articles published since the first number of this Bulletin have not dried up. And their impact goes beyond words, in the field of concrete action like the Conclave of the Congolese Scientific Genius. But far from being a panacea, these achievements must always be strengthened for the good of scientific research.

New guidelines must also be given and spread for being applied. This has been

the charger of the Patron of Scientific Research of Patrice Emery Lumumba's country, Dr Gilbert KABANDA. And this had to be explained to the various actors in Scientific Research, the vision being also to encourage all stakeholders, members of the academic, scientific and administrative in higher education and universities as well as researchers, innovators and inventors, to become actively in consolidating these achievements for the welfare of the nation. As they say the science achievements, like all revolutionary process, are like a wheel which, when it does not move forward, it falls off.

This is why, on the one hand, the appropriation of the advances already got in the field of scientific research by sectorial actors and the set of Congolese people as the ultimate beneficiaries. On the other hand the continuity of scientific research must continue in order to achieve its objectives.

This is made clear by the fact of a little-known language in North Kivu, representing a forgotten cultural wealth. The same applies to the discovery of a powerful health food ignored by the scientific world, yet it holds great promise for sickle cell anemia, a serious disease that wreaks havoc families in Africa, South America and India, South American and Indian families. All this is the fruit of research. The

Science Bulletin and Technologic Innovation is the satisfaction of contributing to operationalizing research that is helping to solve an insidious real problem. One of the proves that those who show the way of Scientific Research are really on the ground, for

example President of the NSC, one of the inventors of this health food. These inventions do not obscure the other achievements, more or less passive, but just as important to mention.

That's why we have research on a number of peat bogs of the DRC in the Congo Basin, a topical theme addressed at the 28th Conference of the Parties on climate change (COP28) held in Dubai from 30 November to 13

December 2023, is discussed in this edition.

It's true that, both nationally and international level, there is still a long way to go, but the achievements are precious and worth preserving. In this new year, there is no question for the Science Bulletin and Technologic Innovation and its editors to give up, especially at a time when this magazine makes the pride of the Ministry of Scientific Research, but to stay the course with its readers.

For the year 2024, the Sciences Bulletin and Technologic Innovations together with its editors and readers, aim to stay the course by maintaining and consolidating its many achievements

Prof Pius MPIANA TSHIMANKINDA
President of the National Scientific Council



Gilbert KABANDA organizes a morning of reflection at the Sultani Hotel

The Minister of the Scientific Research and Technologic Innovation, Dr Gilbert KABANDA, organized on 16 December 2023 at the Sultani Hotel in Kinshasa, a morning of reflection as part of a directive to reorient the principles of governance, issued by the President of the Republic at the meeting of the Council of Ministers.

According to Patron of the Scientific Research and Technologic Innovation, Gilbert KABANDA, this activity had as the objective to disclose new orientation. It also aimed to encourage all stakeholders to get involved actively in the consolidation of these achievements for the good of the Nation, he said.

He indicated that this reflection morning was intended for members of the academic scientific and administrative bodies of Higher and University Education and to researchers and inventors.

He asked all these actors to maintain and build on the achievements of the

Conclave of Congolese Scientific Genius for the smooth running of the country. The Minister Gilbert KABANDA recommended that the appropriation of the advances already got in scientific research by the entire Congolese people as the beneficiaries of all products invention or innovation made in Congo.

"The aim is to transform the economy and society by using local skills, which is at the heart of the concept produce, consume and export Congolese he announced.

The first to indicate that, to achieve this objective, the Congolese government has envisaged several key strategies. It planned to integrate the results of local scientific research into national economy. To support this the research budget has been increased to 3% for 2024.

Minister Gilbert KABANDA also underlined that the government wants to strengthen collaboration between the Ministries of Higher and University Ed-

ucation (HUE) and of the Scientific Research and Technologic Innovation (SRTI) to maximize the effectiveness of research in universities and higher institutes

Boosting Research and Innovation: Congolese perspectives

The first phase of this scientific morning began with an introductory conference of Professor Marie-

craft techniques, helping congolese small and medium-sized enterprises become more competitive. Ms. YANDJU explained her ideas by citing examples of success in Africa: the production of BISSAP in Senegal and the development of the cassava industries in Nigeria and Ghana.

The morning's discussions continued with dynamic exchanges between the



Family Photo de famille during a reflection morning on december 16, 2023 in Sultani Hotel.

Claire YANDJU, General Secretary in charge of Research at the University of Kinshasa (UNIKIN). She emphasized on the importance of promoting innovation in Congolese universities, which is often hampered by the compartmentalization of disciplines, researchers and centers.

Professor Marie-Claire YANDJU underlined the need to strengthen links between universities and industry, by using research and development to support

participants and Minister KABANDA. The discussions covered a range of topical issues including the recent visit of the General Director of the IAEA. The participants also put forward concrete ideas for sustainable development

**Communication Cell of the Minister of
SRTI and Christian MAZONO/NSC**



Family Photo

The NSC takes over the training modules for researchers

The President of the National Scientific Council (NSC), Professor Pius MPIANA TSHIMANKINDA, after receiving the approval of the plenary session of the NSC, quickly convened the extended office of this organ for the effective resumption of training for researchers from the Ministry of Scientific Research and Technologic Innovation (SRTI). on 10 January 2024 in Kinshasa.

These trainings are subdivided into themes as follows:

- General information on scientific research (researchers and work research, running of an institution of research);
- Scientific writing (documentary research, types of scientific articles, writing a scientific article, bibliometrics, Rankine, introduction to writing of the bibliography, plagiarism, introduction to Botero and Mendeleiev);
- Responsible management of

Research data;

- Effective presentation (tips for a good PPT);
- Scientific marketing and visibility of researchers (Google scholar, ResearchGate, etc.);
- Writing projects and mobilizing research funds (general information on projects, stakeholder analysis, appropriation management and identification and analysis of the problem, change theory, logic-follow-up framework and evaluation,

chronogram of activities, budget, cross-cutting themes: gender-one Heath-environment, sources of project funding, project outline ;

- Research, innovation and entrepreneurship: business plan, incubator etc.

The said trainings will take place over four months and a timetable is made by following the research institution.

Researchers who have participated in all the training modules will receive a certificate that can also be used as a "scientific charge" for juniors. recently, the NSC gathered the Scientific Directors of Research Institutions to explain the importance of these said trainings for researchers.

Let's remind that on 12 to 14 June

2023, researchers from the Research Center in Geophysics (RCG), the Chemistry, Biologic,

Radiological and Nuclear Excellence Center (Co/CBRNEC),

The Environment and Water Research Center (EWRC) and the National Committee of Protection against Ionising Radiation (NCPLR) had the privilege to be the first wave of researchers who received these training modules thanks to volunteer trainers. They are : Prof. Pius MPIANA TSHIMANKINDA, Prof. Jean-Paul NGBOLUA, who as in his function of Scientific Advisor and the main trainer, Prof. Damien TSHIBANGU, Prof. Florey NTUNGILA, Prof. Jean-Marie Liesse, Georges MABIALA, Régine AYOWA, José



present researchers to the NSC training

NYENDUE, Jean-Luc SELENGUE, etc.

note that continuous training that are registered in the CSN's roadmap

CSN's roadmap, are very important to increase the capacity of researchers in

DR Congo, especially as this knowledge is not learnt in the academic trainings.

The NSC is working to train all of the Ministry's Researchers of the SRTI to allow them to have bases to do their work well and to give DRC a critical mass valid of researchers who can respond to different concerns.

Consort BELES/ NSC



AEC Administrative Building

The AEC organizes a scientific morning on the products of the TRICO II reactor in Radio Pharmacy.

The French Atomic Energy Commission (AEC) organized a scientific morning on TRICO II reactor products in Radio Pharmacy in Kinshasa, on 25 October 2023.

This scientific activity was led by the AEC's Attached Research of the AEC, Mr Herri KADIMA TSHISEKEDI. He noted that the aim of this presentation was to show the potential of the TRICO II reactor to produce radionuclides used in radio pharmacy.

According to him, radio pharmacy can be considered as pharmacy in nuclear medicine.

He pointed out that the difference between nuclear medicine and other medical specialties is in the drugs. In Nuclear Medicine, they incorporate in drug a radionuclide (a radioactive chemical element) that can emit gamma rays,

beta particles, alpha particles or Auger electrons.

The speaker concluded that the TRICO II reactor can be used to produce useful radionuclides, according to the current needs of our country in satisfactory quantities. He also pointed out that the targets are available; all that remains to be done is to install the fume hoods extraction lines and radionuclides packaging.

A number of decisions were taken and recommendations made during the morning session, with a view to further boosting the AEC.

Mélanie MWAMINI/AEC

Prof. MUKONDE Pascal publishes the book entitled «the diversity of rights in the quest for human security»

Professor MUKONDE Pascal has published in Globethics edition in Kinshasa a book entitled «the diversity of rights in the quest for human security».

According to the author, human security depends on all sectors of human life. It is confronted with the immensity of multifaceted insecurity: the absence of an adequate policy of family planning, in a qualitative rather than quantitative approach, food and nutritional insecurity, social insecurity of workers as well as military created by multiple threats to peace and inhuman violence of all kinds.

This multi-page publication provides adequate and practical information on different categories of shared rights in the context of globalization both unitary and plural. It is intended public authorities to adopt a coherent and flexible policy, based on the evidence of fact and law in

force or to be legislated. The author presents here a specific and holistic laboratory of ideas on human security.

Professor Pascal MUKONDE

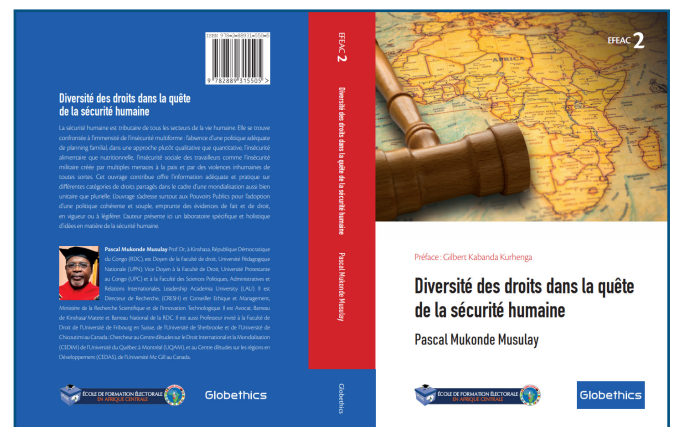
MUSULAY Pascal is the Dean of the Faculty of Law at National Pedagogic University (NPU), Vice Dean in the Faculty of Law at Congo Protestant University (CPU) and at the Faculty of Political and Administrative Sciences and International Relations, Leadership Academia University (LAU). He is Director of Research at the Research Center of Human Sciences (RCHS) and Ethics and Management Adviser at the Ministry of Scientific Research and Technologic Innovation. He is a lawyer at the Bar of Kinshasa/ Matété and at

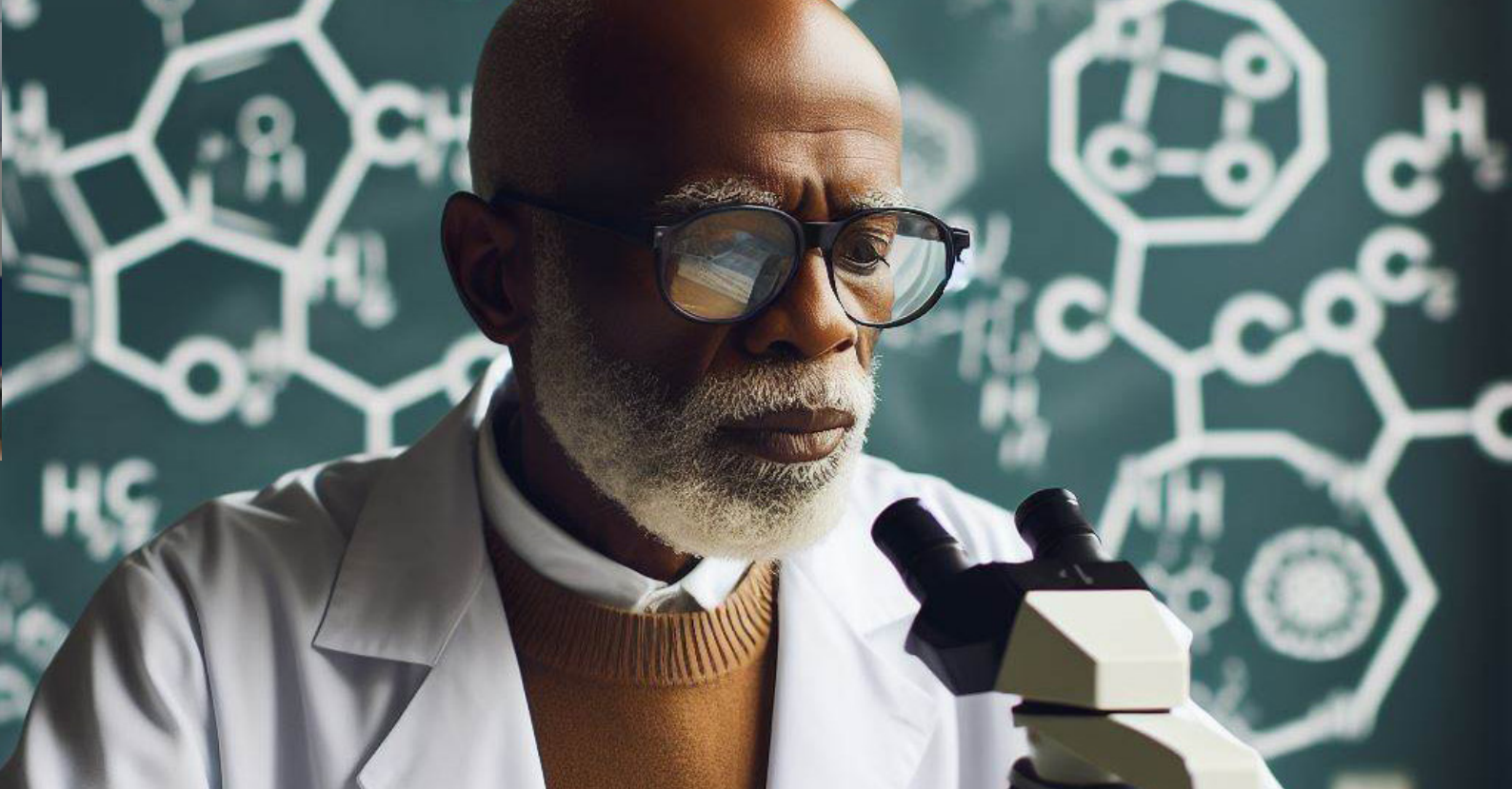
the National Bar Association of the DRC.

He is also Visiting Professor at the Faculty of Law at the University of Fribourg in Switzerland, the University of Sherbrooke and University of Chicoutimi in Canada, Researcher at the Studies Center on International Law and Globalization (SCILG) of Québec University in Montréal

(QUM), and at Studies Center on Development region (SCDR) at McGill University in Canada

MAZONO MPIA Christian and Consort BELESI/NSC





Quid of the scientific responsibility of the researcher

For a long time, researchers in public research institutions have evolved without any real understanding of their obligations. obligations imposed on them. They were simply required to publish a certain number of scientific articles and/or books in order to qualify for promotion in grade. All this while academic staff in Higher and University Education have a 'class schedule' on the basis of which they have been hired, which includes a certain number of obligations to be fulfilled, accompanied by sanctions in the event of non-compliance.

To solve this problem, the extended NSC Board, under the leadership of Mpiana, has proposed to the supervision a legal framework that could constitute the scientific responsibility of the researcher ". Following to this proposal, the Minister of Scientific Research and Technologic Innovation issued Ministerial Decree n°10MIN.RSIT/CAB.MIN/JMK/2023 of

03/01/2023 regulating the scientific responsibility of researchers of research Institutions.

In accordance with this Decree, the responsibility of the researcher is as follows:

- The scientific responsibility of a Researcher of Research Institutions is set as follows:
- Publication of one article as the main author or two articles as co-author or a book or a fulfillment of an innovation per year;
- Running at least three seminars per year;
- Participation in at least sixty percent

of the seminars organized by the Institutions;

- Supervision of junior researchers by senior researchers of minutes of at least four sessions per year, duly signed by both parties;
- Design and/or participation in at least one research project per year;
- Evaluation, for seniors of articles projects for the Institutions' reviews;
- Participation in specific training modules.
- Submission of applications researchers for the promotion in grade is conditioned at least:
- 80% of the scientific responsibility for senior researchers;
- 70% of the scientific responsibility for junior researchers;
- The renewal of Research Assistants is dependent on completion of at least

60% of the scientific responsibility;

- Failure by the researcher of at least 50% of the scientific responsibility constitutes a breach to professional obligations liable to disciplinary pursuit according to article 156 of the HUESR Staff Status.

This decree has already been the subject of popularization in that the President of the NSC said it in plenary sessions of the NSC and sent it to the various institutions concerned.

Just recently, the President of the NSC has reiterated the need for scrupulous compliance with these regulations during a meeting he held with the Scientific Directors of the Research Institutions.

It should be remembered that these dispositions are mandatory and opposable to all researchers and affect their careers.

Freddy IPUKA and Consort BELES/NSC



Le Président de la CENI dans un bureau de vote à Kinshasa

Prof Bobo B. KABUNGU publishes a study entitled « Determinants of voting in the Congolese context»

The Scientific Director of Research Center in Human Sciences (RCHS), Professor Bobo B. KABUNGU has published a study conducted from 22 to 24 December 2023 in Kinshasa, entitled «Determinants of voting in the Congolese context». Does the economy influence the electoral choice of civil servants? »

Determinants of voting: from the general to the specific

Since the end of the Second World War if not earlier, electoral choice has interested researchers. Lazarsfeld and al.

(1948) observed, almost seventy-five years ago nearly seventy-five years ago, that a voter thinks politically as they are socially, with voting being no more than a transposition of the voter's social position.

Thus," comments LUCCHESI, "socio-economic status, religion and place of residence are social determinants of the vote. For example, Lazarsfeld shows that that in the United States it is more likely the vote is to be pro-Republican when the electorate is made up of citizens who live in the countryside and Protestant". In the final analysis the electoral campaign would have a lukewarm role: it reinforces predispositions and, in many cases, would only an incentive without fundamentally modify voters' orientations.

Since the 1980s, several authors mainly Western have dwelt on the motivations behind electoral preferences in

Europe and America with a particular focus on reserved for the economy. They demonstrate that there is a significant link between the economy performance measured by objective indicators (unemployment economic growth, inflation, etc.) during the year preceding the organization of the (presidential) election and the number of votes in benefit or no of the outgoing government. They also highlight the importance of voters' perceptions of the economy.

A good economic record that is poorly presented and/or poorly defended could prove counterproductive.

From an empirical point of view in North America reveal that, on the one hand, economic perceptions depend, in part, on voters' political, the political preferences of voters, and that, on the other, voters' assessment of the economy can be retrospective (criticism of the outgoing government's economic the outgoing government's economic record) the potential impact of the policies suggested by competitors).

In the DRC, Aladi SENGE MILEMBA, an-

alyzing the 2006 and 2011 elections, believes that the electoral preferences are determined more by the advances that politicians make to voters, as well as

by identity-based solidarity to strengthen the visibility of the social group to which they belong. The present would like to contribute to the debate by making a modest contribution based on from a survey conducted among agents and civil servants, on the basis of the electoral behavior of this fringe of the population during the elections of 2018 and 2023.

Material, fieldwork and method In order to interview the population concerned by this study, i.e. around 1,350,000 civil servants and throughout the country, a sample of 385 individuals was selected, with a margin of error of 5.0%. The response rate was estimated at 50.0%, 770 questionnaires were administered, by telephone. To ensure data collection, the appropriate method was to triangulate convenience sampling, judgmental sampling convenience), judgmental (or purposive) and quotas. It is therefore a (or non-probabilistic) method.

Thus, individuals questioned (i) at random, according to their willingness to respond, (ii) by dividing the population into segments according, executive management) and (iii) by retaining equal shares of the population (urban or rural). It should be noted that telephone contacts were taken from a database designed by the Technical Secretariat of the follow-up committee of payment in 2020.

After a brief overview of the purpose of the survey, the questions related essentially to the determinants (social, political and economic anthropological) of electoral choice.

Respondents were asked to give scores to the various assertions which should add up to 100%. at the end, an average score should be calculated.

Results

The investigation conducted from 22 to 24 December 2023 produced the following results:

- a score of 15.0% was given to the statement "social and perspective position of voter's personal career evolution", voting civil servant felt that present and future individual situation is the most important choice;
- an average of 13.0% was given to the statement "tribal or linguistic rapprochement" in view of the persistence of the geopolitical fiber in electoral preferences. Many said they voted according to the candidate's origins (or of one of their surroundings), which can influence their future;
- the line "recent significant salary increase" received weighting of 11.0%, in view of the interest of the civil servant for their working conditions, which remain precarious.

Any improvement (however nominal) is therefore considered to be salvation and benefits the outgoing government;

- 11.0% is the score reserved for the point of "hope in transformational capacity of society by the leader";
- 9.0% is the score given to the perception of the economic and social past conjuncture. If it is judged favorable, the vote will be in favor of current government. If it is perceived unfavorable, the choice will be a sanction;
- the "demonstrated involvement of a candidate to restoring or guaranteeing peace and territorial integrity" was assessed of 8.0%. This shows just how much the matter of peace worry population under review, although the weighting of this assertion does not come

In the top of the list;

- Loyalty to the party or political grouping received an average score of 8.0%. This indicates that there is part

of the population surveyed follows the "watchword" of the "moral authority" of the political association of which they consider themselves a member.

Opting for a candidate other than that of the party would be synonymous of betrayal;

- an average of 6.0% was attributed to the "personal characteristics of the candidate". These were the candidate's friendliness, charisma, attention to people's problems, etc.;
- the quality of the media campaign and the candidate's presence on the ground received an average of 5.0%. The media therefore has a role, even if less overriding, in voting orientation, particularly among undecided voters or with no clear political leanings. At the movement of a candidate to his electorate is likely to encourage people to turn out on polling day;
- the coherence of the project of the society and relevance of the proposed program only obtained an average of 3.0%, with government employees and civil servants surveyed (the main features of the candidates' political offering. And those who do have access to it give this assertion very little credence, for them, election promises are generally not kept because of power;
- 2.0% is the average score given to ideological rapprochement, with the surveyed people said that political parties in the DRC can hardly be classified according to their declared ideologies;
- The "other" the section received a score of 9.0%, which clearly shows that other determinants were not explicitly captured.

Concluding discussion

This reflection is a draft article in the process of being finalized. It is based on theoretical and empirical considerations on the importance of economic (and social) issues in influencing electoral choices in order to check congolese context. What do suggest the results?

Firstly, individual considerations carry it on collective fallouts of the vote. Civil servants elect the candidate who will be in favor of improving their personal situation (39.0%), relying firstly on their tribal, linguistic or friendly background, current or expected social position, including their income.

Secondly, the agent or civil servant of the also takes into account the social evolution of the country because the macro influences the micro. In fact, an overall weighting of 28.0 is reserved for the transformational capacity of the society, the economic situation and peace.

Thirdly, it analyses the managerial po-

tential of the political competitor whose global weight is 14.0% (personal character, campaign and coherence of the project of the candidate).

Fourthly, it is influenced by political affiliation loyalty to the party and ideological leanings having a relative but significant importance (10.0 %).

A particular attention at the economy allows to underline, Nadeau and al (1994), that several factors of voting in the DRC (up to 35.0%: social position and career, wage increases and economic conditions) are related to this. Among these economic factors, the majority were retrospective (with an overall score of 20.0%), with the remainder (15.0%) being forward-looking as Luches suggests.

As for the other factors, the tribal-linguistic connection highlighted in this study is in line with Aladi S'enge Mil Emba, who refers to identity solidarity in the Congo. However, solicitations from politicians are not (or are no longer) given the same consideration, probably experience of the Congolese population. Ultimately, the campaign is only an incentive, as Lazarsfeld and others, scrutinize the presidential election in the United States.

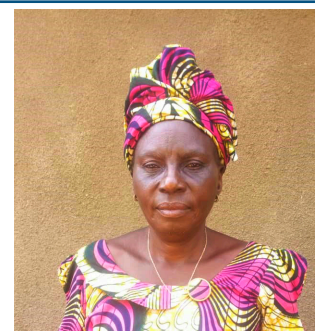
This analysis will have achieved one of its objectives if it pushed political scientists, sociologists, lawyers, anthropologists, etc, to delve into aspects and shed new light on any grey areas.

In the meantime, CRESH which is planning to organize a conference under the title "Race for the presidency in DRC. Between ideological uniqueness and plurality of candidates' ideas and logics", is already proposing a change in the focus of the study, through a number of questions:

(i) how to reconcile the social projects and action programs of the candidates for the supreme office in the DRC? (ii) Why this divergence of affiliations despite the convergence (political) tendencies?

Prof. Bobo B. KABUNGU,
Scientific Director of CRESH

Researcher Saruti makes Kikobo shine, a little-known language of North Kivu.



Saruti Adelphine
Research Associate

The wealth of the Democratic Republic of Congo is not only that of its soil and subsoil. It is also cultural. The country is one of the richest in languages in Africa. Congolese people speak one of the 200 ethnic languages, and even more than 500 dialects. Some languages, however, are in danger of disappearing.

Linguists believe that a large number of languages are in the process of transition of the status of a living language to dead languages. This is the case of the Ikobo language spoken by the Bakumbule of the Ikobo group in the Walikale territory of Walikale in North Kivu in the east of the DRC. The territory of Walikale is bordered

to the north by the territory of Lubero, to the east by the territories of Kalehe, Masisi and Rutshuru; to the south by the territory of Shabunda and to the west by the territories of Lubutu, Punia and Bafwasende in the province of Tshopo.

The linguistic identity of the Bakumbule of Ikobo, are Bantous. Geographically, they live in the Ikobo group, one of 13 groups in the Wanyanga sector, in the territory of Walikale territory. This group, whose chief town

is the village of Buleusa, 220 km north-east of the town of Goma, is found essentially in a region of mountainous climate.

The group is located in the extreme east of the territory of Walikale, between the territories of Rutshuru and Lubero.

The rains are abundant throughout the

year with a short dry season.

The relief is made up of plateaus but also depressions dotted with hills.

There is a forest clearing (steppe), very rich in vegetation and accessible to all kinds of crops. Thus, agriculture (potatoes, cocoa, coffee, sugar cane,) coffee and sugar cane), small-scale trade commerce and artisanal mining of minerals make up the bulk of the economy of this grouping, which is not spared by the frequent security crises in the region. The Bakumbule are said to have come from Uganda in their migration with the Ba-



Illustration images of life in Ikobo

hunde, the Bamate of southern Lubero and the Batangi. They first settled Birundule in Rutshuru before crossing the crossing the Luholu river to finally settle finally settling in Walikale territory. They are farmers. But before 1992 and especially the war of 1994, they had cows. They are a monotheistic people.

They have a royal system: the Bami are enthroned chiefs. The current Mwami, Godefroid Likanga, is regent to his younger brother. The crown prince is

chosen by the Queen Mother (Mumbo). He is not necessarily the biological son of the Mwami because, as the Bakobo say, a Mwami must be the leader of everyone, regardless parental lineage. The women and girls do not go to school in the Iboko culture, which contributes to the worsening socio-economic situation situation of the population.

The Bakumbule of Ikobo are more than 75,000 speakers of the Kobo language,

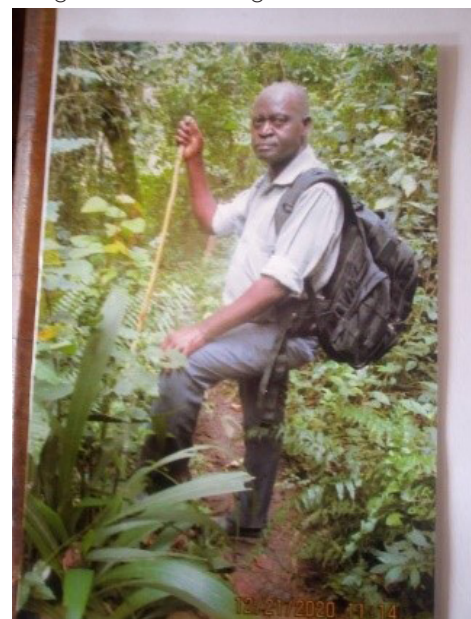
































Illustration images of life in Ikobo

a language that has long lost its originality. They are scattered in neighboring groups, including Kisimba,

Kanyabayonga and Itala in the territory of Lubero. As a result of mixing neighboring languages, its speakers have ended up adopting the idioms of neighboring languages, namely Kinande (from Lubero)

Kihunde (from Masisi) and above all Kinyanga from, which have become lexical wells* for Kikobo. Over time, the language of the bakumbule lost its originality and

OLUFABE LW'EKIKOBO			ALPHABET KIKOBO		
a  kasara	b  bana	e  mbene	f  fuka	g  legembe	h  ihere
i  kishwi	ɪ  kithi	k  kikere	l  lulimi	m  mubu	mb  mbeba
n  manono	nd  ndaht	ng  ngima	nv  nvula	ny  nyumba	nz  nzoka
o  mboko	p  kipupa	r  rubaba	s  isinga	sh  shuku	t  mitutu
th  thatha	ts  itsuba	u  ngununu	ɬ  mesunzu	w  iwe	y  mayi

Alphabet KOB0, R.D.Congo. Edition 2019.

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Alphabet Kikobo-Olfabe lw'ekikobo (according to SIL International Literacy Departement, 2019)

this people have been assimilated to the pygmies Nande, Wanyanga or other neighbouring Bantu tribes. The Kobo language has its own characteristics of a language in its own right. Ms SARuti Adelphine, a researcher at the CRMD/ Bunia, is working with an international team from LIC(Linguistics International Company). Data collected locally using an exploratory method are processed at the linguistic laboratories of the United States.

Since 2019, studies have been carried out by Professor Dr Constance Kutsch Lojenga of Leiden University / LIC and Mr Douglas Boone from the USA. The alphabet of this language has reconstructed and the language was classified as a Bantu language, in the southern Bantoid languages, Benue-Congolese, specifically among the Voltaic-Congolese languages, of the Atlantico-Congolese language family and the large family of Niger-Congo languages. The linguistic code for this language is IETF okc. In the ISO 639 standard, which defines a codification of language names level of linguistic detail, the code of the Kobo language is ISO 639-3 okc.

This classification is important because it will enable this language to be language from a dead language to a living

language. The researchers aim to promote knowledge of this language to enhance the Ikobo culture, because much of it is Ikobo culture is hidden in its language.

It should be remembered that language, as a system of linguistic signs whether vocal, graphic or gestures, enables communication between individuals and is a central element in a people's culture.

It also enables an individual to social reality, to give it meaning, to appropriate

give it meaning, and appropriate the cultural values. In short, it is through language that an individual asserts themselves as a person, that they externalize the reality that inhabits them and internalizes the one that surrounds them. In short, it is the very identity of a person. The results of these studies are awaited to find out more about the Ikobo language, which is already valued in the international classification of the world's languages. The fact remains that its speakers are also working hard to promote it and the Bakumbule culture of Ikobo.

Promoting Ikobo, one of the Republic's

one of the cultural riches of the Democratic Republic of Congo deserves

to be taken into account. The ongoing

of translating the Bible into this language and the popularization of the alphabet are commendable efforts. The same efforts to raise awareness among speakers of this language and the popularization of its alphabet. Why not

in the long term the publication of books in this language? This will involve by setting up schools in this grouping of more than 60,000 people but which only has around thirty make-shift primary schools.

These preliminary results of the work

by Ms Saruti and her team on the Kobo language are just a foretaste to a better understanding of the language and culture of these people effective contribution to the development of the Democratic Republic of the Congo.

BALOGIJE SELENJE Jean-Luc
CRM/BUNIA



DrépaThé a powerful Alicament drug

Professor Pius MPIANA TSHIMANKINDA and his team validate the anti-sickle cell activity of DrépaThé.

Good food has always been good for health because it sustains life. Some have curative properties for many diseases. They are therefore called medicinal foods or simply functional food and are therefore foods that healing. Knowledge of nutraceuticals is becoming more and more interesting, especially for diseases that are difficult to treat with modern medicine. Diseases which are difficult to treat with modern medicine. This is the case with sickle cell anemia or SS anemia, also known as sickle cell anemia, a serious blood disorder. Its seriousness is due to the fact that there is only one curative treatment currently available, a bone marrow transplant; this is a very expensive procedure, costing between €55,000 and €66,000 in Europe. This high cost makes treatment economically inaccessible to the vast majority of patients, especially since the disease only affects Africans, African-Americans and Indians, peoples already financially limited.

In this context, it is easy to understand the importance of an effective therapy that is economically and geographically accessible. This is exactly the particularity of DrépaThé, What is about?

It is a phytomedicine whose activity against anti-sickle cell activity has been validated by the research team led by Professor Pius MPIANA TSHIMANKINDA from the University of Kinshasa. This for more than 15 years, this research team has been studying more than 100 plants used in traditional used in traditional medicine to treat sickle cell disease.

The aim of the study is to improve health coverage in the management of SS anemia in the Democratic Republic of Congo.

Over the years, the team has succeeded in to develop a phytomedicine based on herbal medicine called DrépaThé. Its dosage is well quantified with scientifically validated efficacy. Some studies

have been on the acute and sub-acute toxicity of this phytomedicine, its nutritional composition, its anti-fungal, anti-hemolytic, anti-free radical and antioxidant properties, as well as its effect on biochemical parameters in two animal models. All the results on efficacy were conclusive.

This phytomedicine is a mixture of edible plant leaf powders whose safety has been scientifically in vivo and in-vitro. It represents a tremendous opportunity to obtain appropriate therapeutic responses scientific rigor in terms of safety, efficacy and quality as well as economic rigor and cultural accessibility.

DrépaThé comes in the form of a powder packaged in sachets of 5g in cartons of 15 pieces each. Of course, the presentation of this medicine already an external advantage, but what is more interesting is its intrinsic advantage. In fact, The use of fixed combinations of herbal

substances and/or plant-based preparations increases the benefit/risk ratio, thanks to an addition, or even potentiation of the therapeutic effects of the active substances. There is also reduction or even cancellation of the undesirable the undesirable effects of certain caused by other substances, which increases patient compliance patient compliance with their treatment.

If we want to understand the importance of the research that led to the development of DrépaThé by the team led by Professor Pius MPIANA, all you have to do is to visualize the levels of intervention of the active principle(s) of this phytomedicine in the human body.

Since SS anemia is a genetic disease, the targets targeted by the phytomedicine product must be related to the genes affected by the defect. The discovery of such a phytomedicine therefore deserves its weight in gold.

As a reminder, SS anemia results from a mutation in one of the genes that codes hemoglobin, a protein in the red blood cells, leading to the formation of sickle-shaped red blood cells. These sickle-shaped red blood cells are unable to transport oxygen and are therefore quickly destroyed by the body.

This is why this disease is manifested by a reduction in blood flow.

In other words, according to scientists since this disease is due to an anomaly in hemoglobin, protein present inside red blood cells, it prevents the oxygen transport from the lungs to all the organs of the body. The abnormality of hemoglobin results in the deformation of the red blood cells, which lose their rounded shape (like a disc flattened in the center) and take on an abnormal sickle shape (a characteristic which gives the disease its name). You can also note that sickle cell red blood cells have a short lifespan which produces hemolysis leading to anemia, hence the name Sickle cell anemia or SS anemia.

Today, this disease affects around

50 million people worldwide, mainly in tropical Africa.

The Democratic Republic of the Congo has almost one and a half million patients with sickle cell disease.

Several therapeutic strategies have been tried to counteract the various mechanisms described above, with the aim of improving the quality of life of sickle cell patients, but with no real success. These strategies include analgesic and anti-inflammatory treatments and anti-inflammatories for vaso-occlusive crises in sickle cell patients, blood transfusions, the use of a molecule called Hydroxyurea and bone marrow transplants.

One of the main obstacles to applying these strategies in Africa, their high cost.

Hence, one of the best solutions remains the development of phytomedicines based on the knowledge of African traditional pharmacopoeia.

It goes without saying that 80% of the African population uses traditional medicine for healthcare particularly through the use of plants many of which have proven their effectiveness. Several bioac-

tive molecules have been isolated.

In regions where sickle cell anemia is endemic, medicinal plants are widely used to relieve the symptoms of the disease.

Thanks to the development of DrépaThé, the team led by Professor Pius MPIANA TSHIMANKINDA has made a significant contribution to improving the sickle cell disease.

We hope that this new phytomedicine will make an effective contribution to a very substantial improvement in the quality of life of sickle cell sufferers wherever they live

Professor Damien TSHIBANGU SHA-TSHIBEY, PhD.



Messages de Vœux du Président du Conseil Scientifique National (CSN),

Le Professeur MPIANA TSHIMANKINDA Pius

à Son Excellence Monsieur le Président de la RDC Félix Antoine TSHISEKEDI TSHILOMBO, à Son Excellence Monsieur le Ministre de la Recherche Scientifique et Innovation Technologique Docteur Gilbert KABANDA ainsi qu'à tous les Membres du CSN.

Le Président du CSN, le Prof. MPIANA TSHIMANKINDA Pius souhaite à Son Excellence Monsieur le Président de la RDC Félix Antoine TSHISEKEDI TSHILOMBO, à Son Excellence Monsieur le Ministre de la Recherche Scientifique et Innovation Technologique Docteur Gilbert KABANDA ainsi qu'à tous les Membres du CSN,

les meilleurs vœux de santé, de bonheur et de prospérité pour cette nouvelle année

2024

RCHS awards certificates of honour to its two emeritus researchers.

The Research Center in Human Sciences (RCHS) organized a scientific day on Friday 15 December 2023, in Kinshasa, DR-Congo, in tribute to emeritus researchers André WUFELA YAEK'OLINGO and Augustin AWAK'AYOM. During this scientific event the Scientific Director of RCHS, Professor Prof. BOBO B. KABUNGU focused on emeritus, on the one hand, as a scientist, considering the journey to achieve this distinction and, secondly, in terms of human dignity the benefits associated with this rank but which is slow to materialize.



Le Président du CSN le Prof. MPIANA TSHIMANKINDA Plus remet le certificat d'honneur et un trophée à titre posthume au Prof. Augustin AWAK'AYOM ici représenté.



During this scientific event, the Scientific Director of RCHS, Prof. BOBO B. KABUNGU, considered emeritus, as the attainment of distinction at the end of a scientific

career, on one hand, and, on the other, human dignity in terms of the advantages linked to this status which are, however, slow to materialize.

Before closing the event, the RCHS's Management Committee, in the presence of the President of the National Scientific Council, presented certificates and trophies to the first two emeritus researchers from this Research Institution.

Several speakers at the ceremony during the ceremony, praised the scientific achievements of these two researchers who have left their mark of RCHS. They thanked the RCHS authorities for this

wonderful initiative.

It should be noted that Professor André WUFELA YAEK'OLINGO is the author of several articles and scientific works.

These include: In Search of an Identity, the memory of researcher, the researcher's hundred years of research on the Mongo people, a Francophonie headquarters in Congo-Kinshasa, etc..

MAZONO MPIA Christian/NSC

COP 28: WERC CEO Prof Patience NGELINKOTO MPIA BOKANGO presents his paper entitled "State of research on some peatlands of the DRC in the Congo Basin (Lokolama, Eala , Mpama).



The Director General of the in Water and Environment Research Center (WERC), Professor Patience NGELINKOTO MPIA BOKANGO presented her paper entitled "State of research on the few peat bogs in the DRC in the Congo Basin (Lokolama, Eala, Mpama), "at the 28th Conference of the Parties on Climate Change (COP28) held in Dubai from 30 November to 13 December 2023.

During this international conference

Professor Patience NGELINKOTO MPIA BOKANGO demonstrated that peat bogs play an important role in climate regulation. They have been chosen for several reasons, including among others:

- Valuable ecosystems for the ecological equilibrium of the planet, biotopes of carbon sinks, relatively intact and of great interest for climate mitigation;
- Data currently available mapping and assessment of carbon stock;
- Combine field data: physico-chemical characteristics and biodiversity inventory to determine the natural

capital with a view to useful information for conservation and rational use for sustainable management.

It should be noted that many expectations were set for the COP 28. These included:

1. Africa's common position supported by the DRC;
2. Global assessment of the Paris Agreement, where we stand in terms of : temperature rise, adaptation impact, loss and damage, and finally response and mobilization of funds;
3. Operationalization of funds, loss and damage;
4. Transition, justice and equity;

5. Financing

She also noted that COP 28 had enabled participants to benefit from opportunities, including: more than 100 thousand participants with rich scientific presentations data, networking with other countries, organizations, presentation of progress on mitigation and adaptation, strengthening the DRC's position of the DRC as a « SOLUTION COUNTRY ».

Professor Patience NGELINKOTO MPIA BOKANGO

PUBLIC-SECTOR RESEARCH CENTERS AND INSTITUTES IN THE D.R. CONGO

RIHS (Research Institute in Health Science)

Objective: To improve the state of health of the population through research in the following fields: pharmaceutical, medical, anthropological, psychological or socio-cultural.

Address: 9, Av. Lukusa C/Gombe; E-mail: dnyembo@gmail.com; Tel: 0824580211

ATSR (Applied and Technologic Sciences Research Center)

Objectif: Mettre au point des matériaux, des appareils, des méthodes ou procédés Objective: To develop materials, equipment, methods or processes with a view to finding solutions to the population's urgent problems in various fields: housing, rural development and the modernization of the society.

Address: 106, Blvd du 30 Juin, C/Gombe; E-mail: Jeannoel.mputu@gmail.com; Tel: 0821138261

RGHS (Research Center in Human Sciences)

Objective: To ensure the human development of the Congolese people through the study of its social, economic and political dimensions with a view to identifying the factors that have a positive or negative influence on its development.

Address: 33, Av. comité urbain C/ Gombe; E-mail: mingashang@yahoo.fr; Tel: 0819377821

RCMT (Research Center in Mathematics Teaching)

Objective: To carry out research in the field of mathematics teaching with a view to improving quality.

Address: 84, Av. des Ambassadeurs C/ Gombe; E-mail: mabelamatendorostin@gmail.com; Tel: 0815031877

GRC (Geophysical Research Center)

Objective: To provide the country with a national geophysical observation network, for the global study of the internal behavior of the earth in the DRC.

Address: 44, Av. de la démocratie, C/ Gombe (within GMRC); E-mail: tondozi@gmail.com; Tel: 0854426228

AIPS (African Institute of Prospective Studies)

Objective: To carry out forward-looking studies in order to propose solutions to crises and problems linked to the evolution of African societies.

Address: Av. Cardinal Malula, C/ Lemba; E-mail: mgrtarcibangu@yahoo.fr; Tel: 0996658741

MDRC (Multidisciplinary Development Research Center/Matadi)

Objective: To carry out operational research in central Congo in the field of applied linguistics of African cultures and applied sciences

Address: Hôtel de la porte Matadi; E-mail: Mwanzanicolas5@gmail.com; Tel: 0815037949

NCPIR (National Committee for the Protection of ionizing Radiation)

Objective: - Regulatory authority for protection against the dangers of ionizing radiation in the DRC management of radioactive sources of radioactive materials such as uranium.

Address: 4675, Av. Colonel Ebeya, Immeuble Quitus 2ème niveau; Email: Flory1963@gmail.com; Tel: 0816684665

AEC (French Atomic Energy Commission)

Objective: To carry out, promote and coordinate scientific and technical research in various fields of science and industry, concerning the use of atomic energy and space research.

Address: UNIKIN building; E-mail: Steve.muanza.kamunga@gmail.com; Tel: 0808643248

CGI (Congo Geographic Institute)

Objective: Production of the base map of the DRC at a scale of 1/50,000 and its derivatives.

Address: 106, Blvd du 30 Juin, C/Gombe; E-mail: Fidele.balibuno@unikin.ac.cd; Tel: 0974449240

GMRC (Geologic and Mining Research Center)

Objective: To carry out studies and analyses to improve knowledge of the soil and sub-soil of the national territory.

Address: 44, Av. de la démocratie, C/ Gombe; E-mail: rolandkakule@gmail.com; Tel: 0851506161

NIASR (National Institute for Agronomic Study and Research)

Objective: To promote the development of agriculture in the Congo. To maintain varieties, multi-local trials, and its farmers, management and conservation of germplasm. Set up a program to monitor and evaluate research activities.

To disseminate new varieties. Give the emerging technical department its reason for being, with a view to producing basic and pre-basic seed. Resume publication of the agricultural magazine to disseminate research results.

Address: 13, Av. des Cliniques, BP :2037 KINSHASA, C/Gombe; E-mail: domikankonde@yahoo.fr; Tel: 0818248620

RCALC (Research Center into African Language and Culture)

Objective: To coordinate and carry out all research projects concerning African languages and cultures.

Address: 53 C, Av. Makiso, blvd du 30 juin, Kisangani/ Tshopo. Tel: 0851934320

AFRC (Agro-Food Research Centre/Lubumbashi)

Objective: To identify processes for processing and preserving basic local agricultural products. To improve the quality of imported or locally produced foodstuffs by applying approved standards and quality control.

Help the technological development of the existing agro-industry by providing them with technical assistance wherever possible.

Address: 1, Av. Président ILEO, Q/CRAA, C/Lubumbashi; E-mail: Julesnkulu@gmail.com; Tel: 0997131002

SSRC (Social Science Research Center / Bandunduville)

Objective: to carry out practical scientific research into major socio-economic and cultural issues.

To promote sustainable aquatic development.

Address: 29, Av. de la mission, Q/Salongo, C/Basoko. BANDUNDUVILLE, BP 223; E-mail: akuzituka@gmail.com; Tel: 0815898971

FERC (Forest Ecology Research Center /Mabali)

Objective: Scientific research on plants, aquatic species and animal species.

Address: D.S/MBANDAKA D.S/MBANDAKA/PROVINCE OF ECUADOR; E-mail: bosomboependi2@gmail.com; Tel: 0825241704

NDRC (Nutritional Diseases Research Center/Gemena)

Objective: Research into diseases linked to malnutrition, such as related diseases by isolating certain molecules, such as SYZYSIUM GUINESIE to combat amoebic yeasts and diarrhea in South Ubangi.

Address: Mobutu n° 220/A. GEMENA/ SOUTH UBANGI PROVINCE; E-mail: cherusangi@yahoo.fr; 0992416091

NSRC (Natural Sciences Research Center /Lwiro)

Objective: To carry out, promote and coordinate research in the fields of science, technology and industry throughout the DRC.

Address: LWIRO LWIRO, TERRITORY OF KABARE/SUD KIVU; E-mail: robert.kasisi@umontreal.com; Tel: 0996806699

MDRC (Multidisciplinary Development Research Center /Bunia)

Objective: To carry out operational research in the north-east of the DRC in the fields of applied linguistics, African cultures and applied sciences.

Study of nature, fauna, flora and protection of endangered species.

Address: BUNIA/ITURI; E-mail: Kermwathomas@gmail.com; Tel: 0997717070

HRC (Hydrobiology Research Center in Uvira)

Objective: To program, coordinate and monitor research activities in hydrobiology, limnology and hydrology.

hydrobiology, limnology and fisheries in all ecosystems.

Address: 115, Av. du Congo, Q/Kimanga, C/Kalundu, UVIRA / SUD KIVU; E-mail: bida-kamuhoza@gmail.com; Tel: 0997716307

CoE/CBRNEC (Chemical, Biological, Radiological and Nuclear Excellence Center)

Objective: To contribute to the mitigation of chemical, biological, radiological and nuclear risks.

Address: 106, Blvd du 30 Juin, C/Gombe; E-mail: Odette.kabena@gmail.com; Tel: 0816904370

GVO (Goma Volcanological Observatory)

Objective: Prevention of volcanic risks by monitoring volcanoes and Lake Kivu. Kivu; Management of natural risks; scientific research.

Address: 142, Avenue Du Rond Point ; Quartier Les Volcans ; Commune de Goma ; Ville Goma; North-Kivu; E-mail: mavotulu@gmail.com; Tel: 0998584734

WERC (Water and Environment Research Center)

Objective: To serve as a training and research center focusing on water and environmental management.

To propose solutions to problems that could arise around water. Create a national network of Congolese scientists and researchers to analyze and disseminate information on the impact of climate change in the DRC. Promote education and the right to the environment.

Address: 44, Comité Urbain C/ GOMBE; E-mail: ngelipatience@gmail.com; Tel: 0818105625

RCSARP (Research Center for the Selection and Adaptation of Ruminants and Pigs)

Objective: To carry out studies and research in the field of ruminant and pig breeding

Address: 45, Av. Lumumba, Q/de la gare, LUPUTA/ KASAI-ORIENTAL; E-mail: tshamalagabriel@gmail.com; Tel: 0851817370

NCRS (National Center for Remote Sensing)

Objective: Research in remote sensing.

Address: PLACE ROYAL IMMEUBLE PLACE ROYAL IMMEUBLE KASAI; E-mail: davidngindub@gmail.com; Tel: 0815103502

NCROS (National Center for Research in Oral Science)

Objective: To carry out studies and research in the field of oral health.

Address: 13, 10ème Rue, Industriel Quarter, C/Limete; E-mail: Cnrsbd.rdc@gmail.com; Tel: 0822244152; 0811835159; 0840922982

CAS (Congolèse Academy of Sciences)

Objective: Promotion and dissemination of science, technology, arts and letters. Support for inventive initiatives.

Address: Sciences Faculty/ UNIKIN local 28; E-mail: jlmuyembet@gmail.com; Tel: 0813330242

MIPRC (Matadi Interdisciplinary Pedagogical Research Center)

Objective:--Information science.

Address: The buildings of the Matadi Higher Pedagogical Institute; Tel: 0896501462

CONGOLESE REVIEW OF SCIENCES AND TECHNOLOGIES

Published by the National Scientific
Council Ministry of Scientific Research
and Technological Innovation
Democratic Republic of Congo

ISSN (Online): 2959-202X ISSN Print) :2960-2629 DOI: 10.59228 rcst

www.csnrdc.net

Our review is indexed in the following platforms:



Subscription Conditions

Ordinary: \$15
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1. to deliberate on the guidelines and priorities of the scientific and technological research plans and programs to be carried out in the country ;
2. to deliberate on the allocation of resources from the State budget to scientific and technological activities;
3. supervising the financial management of research centers and institutes
4. approving the budgets of the Research Institutes and Centers and submitting them to the Minister for Scientific Research for approval
5. approving the organic regulations of the Research Institutes and Centers;
6. . proposing to the Minister for Scientific Research the appointment and promotion of scientific and administrative personnel.

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Printed

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