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Call for publication in the
Congoese Review of Sciences and Technology
ISSN (Online) : 2959-202X
ISSN (Print) 2960-2629
DOI prefix : 10.59228/rcst
www.csnrdc.net

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From one step to the next, that's how research in the DRC works

It is illusory to believe in automatism when it comes to obtaining concrete results in the field of scientific research in the Democratic Republic of Congo (DRC). It is essential that all players in this sector work together to produce the best results after several stages of research. Too often, many people get lost when they want to obtain research results without having taken the time to explore and analyze databases. Research requires progressing from one step to the next to achieve the desired results and meet society's needs. It would be utopian to believe that automatism can replace the necessary effort and rigor, simply because one bears the title of researcher.

Today, Minister Gilbert KABANDA is giving new impetus to research. He is working to shatter the illusion that is dampening the enthusiasm of Congolese researchers. As Minister in charge of research in the DRC, Gilbert Kabanda recently took part in a conference organized by the International Atomic Energy Agency (IAEA) in Austria, with the aim of strengthening Congolese research, particularly in the technological field.

One step at a time, this is how research in the EWC is progressing. Every contact counts. On his return from Vienna, Minister KABANDA is working hard to capitalize on the relationships established at the conference, in particular with a view to setting up a national center for the treatment of cancer by radiotherapy. This demonstrates once again that research is a dynamic field, which evolves thanks to the opportunities created by international contacts. The Austrian theme of nuclear science, technology and applications is another important step in promoting the work of Congolese researchers.

Science doesn't just wait for opportunities, it creates them. It opens up avenues to discover what is new and useful to the well-being of society. Minister Gilbert KABANDA is charting a path of scientific ease for Congolese researchers, and it's crucial to maintain this momentum to ensure quality research. It is therefore important not to remain stuck at the same stage, but to seek new steps to advance research. That's what research is all about.



Professor Pius MPIANA TSHIMANKINDA
NSC President.



Activity of the President of the Republic

The Head of State inaugurates the new building of the provincial assembly of Haut-Katanga

To round off his tour of Greater Katanga, President Félix Tshisekedi inaugurated the headquarters of the Haut-Katanga Provincial Assembly on November 19, 2024.



"because it will bring a constitutional innovation that will enable the provinces to benefit directly from 40% of the revenue generated at source".

As for the number one of the Provincial Assembly, Michel Kabwe, he welcomed this event, which is a first since the country gained independence.

The President of the Haut-Katanga parliament described the headquarters as "the temple of democracy and a space of free expression where every voice counts".

Communication Unit/Presidency of the DRC

The three-storey building includes individual offices, group areas for the 48 provincial deputies and their assistants, 37 offices for administrative staff and a 500-seat plenary hall.

Speaking on the occasion, Provincial Governor Jacques Kyabula Katwe declared that "the construction of the provincial parliament's headquarters joins a series of other public utility infrastructures such as roads, bridges, schools and hospitals in the towns of Lubumbashi, Likasi and Kipushi".

Governor Kyabula publicly supported the constitutional revision





Government activity

Judith Suminwa encourages Canadian entrepreneurs to invest in the DRC

Prim Minister Judith SUMINWA invited Canadian entrepreneurs to invest in the Democratic Republic of Congo (DRC) on November 18, 2024 at the “Africa Accelerating 2024” forum, organized by the Canada-Africa Chamber of Commerce in collaboration with the Canadian government, in Ottawa.

The head of the Congolese government defended the DRC as an essential investment destination, with its immense natural and human resources.

She also called for increased cooperation to meet climate challenges and promote a sustainable energy transition.

According to Judith SUMINWA, the DRC is no longer a giant with feet of clay, and is becoming the destination par excellence for capital seeking a better future.

MAZONO Christian/NSC





Activities of the Minister of SRTI

Minister Gilbert KABANDA assumes the presidency of AfricaRice

The Minister of Scientific Research and Technological Innovations, Gilbert KABANDA KURHENGHA, is appointed President of the Africa Rice Center (AfricaRice) for two years at the 33rd session of the network's Council of Ministers, held from November 13 to 15, 2024 in Antananarivo, Madagascar.

The Democratic Republic of the Congo has assumed the presidency of AfricaRice, the Africa Rice Center. It succeeds the Arab Republic of Egypt, which has reached the end of its term of office.

According to the communication unit of the Minister of SRTI, the DRC was appointed head of this regional institution at the end of the 33rd ordinary session of the AfricaRice Council of Ministers. According to the same source, Gilbert KABANDA KURHENGHA, Minister of Scientific Research and Technological Innovation and representative of the Congolese government at the meeting, has been designated to assume the presidency of AfricaRice for the two-year term of office.

"May the Council of Ministers of AfricaRice, which has honored the DRC by appointing it to the presidency of our council for the future mandate, find here the expression of our deep gratitude. I express my support and collaboration for a successful mandate", declared the Congolese Minister of Scientific Research and Technological Innovation.

Ensuring food safety

Addressing the audience, Minister KABANDA KURHENGHA urged his peers to proceed as in 1951, when the European Union (EU) came into being, starting from the coal and steel community. He welcomed the establishment of the Pan-African Rice Research Center of Excellence, which is committed to capacity building and development. With 28 African countries, including the DRC,

AfricaRice is committed to poverty reduction and food and nutritional security. For the Minister, "the DRC has everything to reassure the population of our region

in the field of agriculture... It has 80 million hectares of arable land and 5 agro-ecological zones enabling several crops to be grown throughout the year, of which only 10% are exploited, 4 million hectares of irrigable land, a major hydrographic network with an availability of 7 to 8% of exploitable fresh water".

DRC's contribution

The Minister emphasized that the DRC will bring the availability of manpower, its population being largely made up of rising youth. In his words, the country is part of the 2nd group of states that have joined the Coalition for African Rice Development (CARD).

It has drawn up its National Strategy for Rice Development (SNDR), with a clear vision for 2030: "To make the DRC the rice granary of Central Africa, with an organized, profitable and sustainable rice industry, whose overall objective is to increase the quantity and improve the quality of rice production in the DRC, in order to meet national and regional market needs".

Soon an AfricaRice office in Kinshasa

The Minister of Scientific Research and Technological Innovation promised that, during the DRC's term of office, discussions would be held with a view to setting up an AfricaRice office for Central Africa, based in Kinshasa.

With this in mind, the government representative expressed his appreciation and support for the collaboration with Africarice, and his wish for its ongoing promotion: "Africarice's support and strategies have made it possible for us to continue to work

together.

Africarice's support and strategies have meant that, in my country, even areas that were previously unconcerned with rice production have begun to take an interest in it(...)," acknowledged the Minister.

This, in his view, has contributed to an increase in local rice production and consumption, as farmers have realized that land that was previously allocated only to maize could also be used for rice, thus contributing to diversification and higher incomes.

Referring to the theme of this 33rd session of the AfricaRice Council of Ministers, namely "Food sovereignty: meeting commitments to rice self-sufficiency through the transformation of rice-based agri-food systems", Gilbert KABANDA believes that "there is still a long way to go, as many African countries, such as the DRC, are still dependent on rice imports".

AfricaRice is a pan-African center of excellence for rice research, development and capacity building. It contributes to reducing poverty, ensuring food and nutritional security, and improving the livelihoods of farmers and other players in the rice value chain in Africa by increasing the productivity and profitability of rice-based agri-food systems, while ensuring the sustainability of natural resources.

AfricaRice is one of the 15 international agricultural research centers of the CGIAR, a global research partnership for a food-secure future. It is also an intergovernmental association of African member countries.

It was founded as the "West African Rice

Development Association (WARDA)" by 11 African countries, and officially began operations in 1971. Recognizing the strategic importance of rice in Africa and the organization's effective geographic expansion, its Council of Ministers took the historic decision in 2009 to change the organization's name to the Africa Rice Center (AfricaRice).

Today, AfricaRice counts 28 African countries among its members: Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Ivory Coast, Democratic Republic of Congo, Egypt, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea Bissau, Kenya, Liberia, Madagascar, Mali, Mauritania, Mozambique, Niger, Nigeria, Republic of Congo, Rwanda, Senegal, Sierra Leone, Togo and Uganda.

AfricaRice's strength lies in its capacity for locally-adapted research on rice for

development, with on-the-ground knowledge and networks. The Center has pioneered work on many fronts that are transforming the lives of millions of rural households in Africa. It has made a significant contribution to boosting the African rice sector through improved seeds, cultivation practices, processing technologies, policy advice and capacity building.

The Center's modus operandi is partnership at all levels. Its research and development activities are carried out in collaboration with various stakeholders - principally national agricultural research systems (NARS), academic institutions, advanced research institutions, farmers' organizations, non-governmental organizations and donors - for the benefit of millions of African farmers and other players in the rice value chain for whom rice is synonymous with food and livelihoods.

Headquartered in Abidjan, Ivory Coast, AfricaRice employs around 230 people, 40 of whom are internationally recruited, based in Ivory Coast and at research stations in Madagascar, Nigeria and Senegal, as well as at project sites in Liberia and Uganda.

AfricaRice receives funding from governments, foundations, international financial institutions, development banks, the private sector and the CGIAR Trust Fund.

Communication unit of the Minister of SRTI and Christian MAZONO/NSC

Gilbert KABANDA calls for the digitization of the DRC's geographical maps

All the mother maps, in particular the matrix maps of all the provinces, territories, chiefdoms and sectors drawn up by the Belgians still exist at the Institut Geographical Institute of Congo (GIC)," declared the Minister of Scientific Research and Technological Innovation, Gilbert KABANDA KURHENGA, before the Senators on December 09, 2024 in Kinshasa.

Addressing the Upper House of Parliament, Minister Gilbert KABANDA called for the maps to be protected in digital format as a matter of urgency.

He acknowledged, however, that this would require considerable resources. In the same vein, the Head of Research stressed the importance for the Government of improving the living and working

conditions of the scientific, administrative and technical staff of Research Institutions in the DRC.

It should be noted that geographic mapping is an essential tool for land management and the development of effective public policies.

Christian MAZONO/NSC and communication unit of the Minister of SRTI

Closing of the Ministerial Conference on Nuclear Science, Technology and Applications

Gilbert KABANDA campaigns for global solidarity against cancer

The Minister of Scientific Research and Technological Innovation, Dr Gilbert KABANDA KURHENGA, returned to Kinshasa on November 30, 2024, after a week-long mission to Vienna, Austria, where he took part in a conference organized by the International Atomic Energy Agency (IAEA) on nuclear science, technology and applications as part of the Technical Cooperation Program.

Shortly before heading back to Kinshasa, the Minister delivered a thought-provoking speech at the networking breakfast "Rays of Hope: Progress, Plans and Partnership Opportunities," held Thursday, November 28, 2024.

Cancer: one of today's most pressing health challenges.

During the conference, the head of Research recalled that cancer remains one of the most pressing global health challenges of our time. He noted that

its impact is profoundly felt on the African continent, where inequalities in access to vital cancer care are glaring.

According to the Minister, it is alarming to note that almost 20 African countries do not have a single radiotherapy treatment facility, and that 40% of the continent's population still has no access to these essential services.

He pointed to the DRC as an example of this disparity. "Until recently, there were no public radiotherapy facilities for the diagnosis and treatment of cancer. However, change is underway," he said, before recalling that in February 2022, the IAEA launched the 'Rays of Hope' initiative, a transformative effort to bridge the cancer care gap in low- and middle-income countries. The DRC has been identified as one of the seven member states in the first wave of this initiative.



Building on this momentum, the IAEA is providing essential support to the DRC through the national project, focusing on capacity building, including the training of medical physicists, oncology nurses, radiotherapy technologists and radiation oncologists, the Minister emphasized.

With this in mind, he recalled the inauguration in November 2023 of the DRC's first public radiotherapy center, a multidisciplinary diagnostic imaging facility

with PET/CT and cyclotron capabilities, and a training center in Kinshasa, by the IAEA CEO and himself, acting on behalf of the President of the Republic.

According to Gilbert KABANDA, the IAEA had helped the DRC to prepare a bankable document, which the DRC is using to mobilize resources for the construction of its own facilities to house the first public radiotherapy center.

Total capital expenditure for the radiotherapy facility is considerable, with wider service extensions including diagnostic imaging and a national training school.

Promoting solidarity against cancer

Gilbert KABANDA goes on to say that the history of cancer in the DRC is a reminder of the need for solidarity. In his view, by investing in initiatives such as Rays of Hope, the aim is not just to build facilities, but rather to restore hope and save human lives in a spirit of solidarity. "Let's work together to bridge the gap in cancer care and provide equitable access to life-saving treatments for all," he added.

Minister and IAEA CEO meet face-to-face

APrior to this, Minister Gilbert KABANDA had a tête-à-tête with Ambassador Rafael

Mariano Grossi, Director General of the IAEA, during an audience he granted him. High on the agenda was the progress made by the DRC on the prerequisites for the construction of the National Center for Multidisciplinary Diagnosis and Radiotherapy in Kinshasa.

On this subject, the number one of the IAEA gave assurances to Minister Gilbert KABANDA, concerning the support of this international structure, concerning the mobilization of the necessary resources with the assistance of the OPEC Fund, whose technical meeting was held on November 25, 2024 under the presidency of Madam Head of Central and West Africa, in the presence of the Director of the Africa Division in the Technical Cooperation Department, Professor SHAUKAT.

In a meeting with Mr. Rafael MARIANO GROSSI, CEO of the IAEA, the Minister called for the creation of a technical task force to implement and monitor the construction of the National Center for Multidisciplinary Diagnostics and Radiotherapy, a structure called for by the President of the Republic.

In the wake of their discussions, the Head of Research and Ambassador Rafael Mariano

Grossi agreed to set up a joint commission between the IAEA and Congolese experts, with the aim of identifying all the implications at operational, normative and procedural levels.

The two personalities also discussed the issue of restarting the DRC's nuclear research reactor, TRICO 2.

In conclusion, the Minister emphasized that the wish to join the other nuclear applications administered by the IAEA had been approved by the IAEA Director General, and focal points would be officially designated by the Congolese side.

Communication unit of the Minister of SRTI and Christian MAZONO/NSC



Gilbert KABAANDA opens AEC's 65th anniversary celebrations

The Minister of Scientific Research and Technological Innovation (SRTI), Gilbert KABANDA, launched the commemorative activities for the 65th anniversary of the Atomic Energy General Commissariat (AEC), on October 28, 2024 at CEPAS in Gombe township, Kinshasa.

"I am delighted, on behalf of the Head of State and the Prime Minister, to preside over this highly important ceremony, which also determines the future of the nuclear sector in DR-Congo. Our country is preparing to restart the Trico II research reactor, which has been shut down for 17 years. This is thanks to the support of the International Atomic Energy Agency (IAEA), whose CEO Rafaël MARIANO GROSSI visited DR-Congo for the very first time a few months ago",

announced Minister Gilbert KABANDA.

During the event, the head of SRTI declared that the IAEA's support was all the more vital with the implementation of the Ray of Hope project, with the construction of the Multidisciplinary Diagnostic and Radiotherapy Centre, the Radiopharmaceutical Production Center and the National Higher School of Nuclear Sciences and Techniques in Kinshasa. Professor Steve MUANZA KAMUNGA,

General Commissioner of the AEC, set the scene for the anniversary celebrations, detailing the various activities taking place. He also paid a vibrant tribute to the very first Commissioner General of the AEC after independence, Professor Félix MALU WA KALENGA, who had succeeded Mgr Luc Gillon, promoter of

this scientific and technical service and even of the former Lovanium University. The 65th anniversary celebrations of the AEC began on October 28, 2024 and ended on November 2, 2024 in Kinshasa. Several of the country's authorities took part in the event.

They included: the President of the National Scientific Council, the Minister's Deputy Chief of Staff, members of the Management Committee, researchers, technicians and AEC administrative staff.

Mélanie MWAMINI/AEC

Gilbert KABANDA and Thérèse Kayikwamba take part in the Russia-Africa Partnership Forum.

Scientific Research and Technological Innovation Minister Gilbert KABANDA and Foreign Affairs Minister Thérèse Kayikwamba took part in the Russia-Africa Partnership Forum on November 09, 2024 at the Sirius University of Science and Technology in Russia.

Taking part in the two-day event are representatives from Mali, Ethiopia, South Africa, the Democratic Republic of Congo, Tanzania, Angola and Guinea. This Forum follows on from the one organized in 2019 devoted to African issues with the rest of the world.

The Congolese delegation will communicate its position on the interests to be shared by all in the framework of multilateralism, climate

change, the energy transition, the global economic system and the peace and security architecture.

During the event, the head of Congolese diplomacy, Ms Thérèse KAYIKWAMBA WAGNER, and her colleague Gilbert KABANDA KURHENGHA, Minister of Scientific Research and Technological Innovation, exchanged views with their Russian counterpart

Sergey Lavrov.

The two sides discussed the need to create a legal framework for advantageous cooperation in a wide range of fields: defense, agriculture, energy, infrastructure and cultural exchanges.

Communication Unit of the Minister of SRTI and Christian MAZONO/NSC

[Russia-Africa Partnership Forum closes](#)

Gilbert KABANDA honors Félix TSHISEKEDI's program on the valorization of research results, inventions and innovations

The Minister of Scientific Research and Technological Innovations, Gilbert KABANDA KURHENGHA pleaded before his Russian partners in favor of the program of the President of the Democratic Republic of Congo (DRC) Félix TSHISEKEDI on the valorization of research results, inventions and innovations at the closing of the Russia-Africa Partnership Forum on November 10, 2024 in Russia.

At the close of the conference, Minister Gilbert KABANDA told his peers that he had been asked by the President of the DRC to state that his government's action program places particular emphasis on valorizing research results, inventions and innovations.

According to the Minister, over 200 prototypes are currently available and awaiting their transfer to the industrial sector, for widespread

consumption. This is what emerged from the panel discussions, which highlighted Russia's expertise in this field of valorization of research results, whose impact can be seen in a variety of sectors, including the economic and military sectors

He also mentioned several of the projects presented, such as SEBASTOPOL, a city of science and innovation, which encourage the forging of solid scientific partnerships beneficial to both the DRC and the Russian Federation.

Minister Gilbert KABANDA added that the DRC's large equatorial forest in the global protection against climate change and its possession of 3/4 of the Congo River basin, gives it the possibility of development in the New Climate Economy.

He also noted that the country's possession

of impressive cobalt and lithium deposits are likely to boost the battery and electric car industry, as well as the extraction of methane gas from the depths of Lake Kivu, in the east of the country, which could reduce the anxiety of neighboring populations, bring peace to the region and solve the energy shortage, thus helping to boost industrial activity, particularly mining, in this part of the country.

In conclusion, the Minister acknowledged Russia's expertise, and appreciated the determination of its authorities to establish win-win partnerships and support, before emphasizing that the DRC expects to transform its various projects into a real success story.

Communication Unit of the Minister of SRTI and Christian MAZONO/NSC

Gilbert Kabanda attends funeral of Chargé des missions Honoré NAMUHIRWA

On November 19, 2024, the Minister of Scientific Research and Technological Innovation (SRTI) Gilbert KABANDA attended the funeral of his chargé des missions NAMUHIRWA Honoré, who died on November 10, 2024 in Kinshasa.

His funeral took place at the Chemin de Paradis cemetery on the Matadi road. Mr. NAMUHIRWA Honoré was Secretary to Minister Gilbert KABANDA and Administrator at the General Directorate of Migration (GDM).

A father to many, a source of pride to an entire community. Peace to the charitable soul of the illustrious departed.

Christian MAZONO/NSC



NSC organizes remedial training for researchers

The National Scientific Council organized remedial training modules for Research Center researchers from November 13 to 15, 2024 at the RCGM in Kinshasa.

The ceremony was attended by six (6) speakers. They were : Professor Pius MPIANA TSHIMANKINDA, President of NSC, Professor WUFELA YAK'OKOLINGO André, Professor Benjamin ZOAWÉ, Professor Damien TSHIBANGU, Master Freddy IPUKA, Georges MABIALA and Reagen NGOTO.

The first speaker on the first day was Professor André WUFELA. He spoke on "Researchers and the research profession". In his view, researchers must work in collaboration with their peers.

According to him, the researcher is a tireless, relentless worker who spends most of his time not with his family but in the laboratory, in the field or in the library, comparing, confronting or opposing the force of theory to the implacability of facts.

He concluded that scientific publications are a window on the world. They offer a certain visibility and enhance the value of both the Research Center and the researcher. Not only do they give the latter a certain scientific notoriety, but they can also bring material gains.

The second speaker, PS/NSC Research Director IPUKA BADJE, focused on the "functioning of a research institution: role, place

and mission of researchers". He defined a research institution as an establishment, laboratory or research organization specialized in scientific research. It is also a public institution with legal personality.

For his part, the researcher is expected to create knowledge, with the following main missions :

- scientific production
- promoting research results
- dissemination of scientific information
- training through scientific research

The speaker listed eleven main qualities that a researcher must possess, including: creativity, honesty, rigor, patience, openness, etc...

The first day of training ended with a capacity-building workshop on best practices for successful PowerPoint presentations, led by Professor Benjamin ZOAWÉ.

The second day featured presentations on Pelagianism as a detector, and responsible management of research data.

On the final day, trainer George MABIALA spoke on the responsible management of research data and writing a research project. The day also included another very practical session on the theme of "From scientist to entrepreneur", on scientific reputation, visibility and the marketing of researchers against a backdrop of bibliometric indicators.

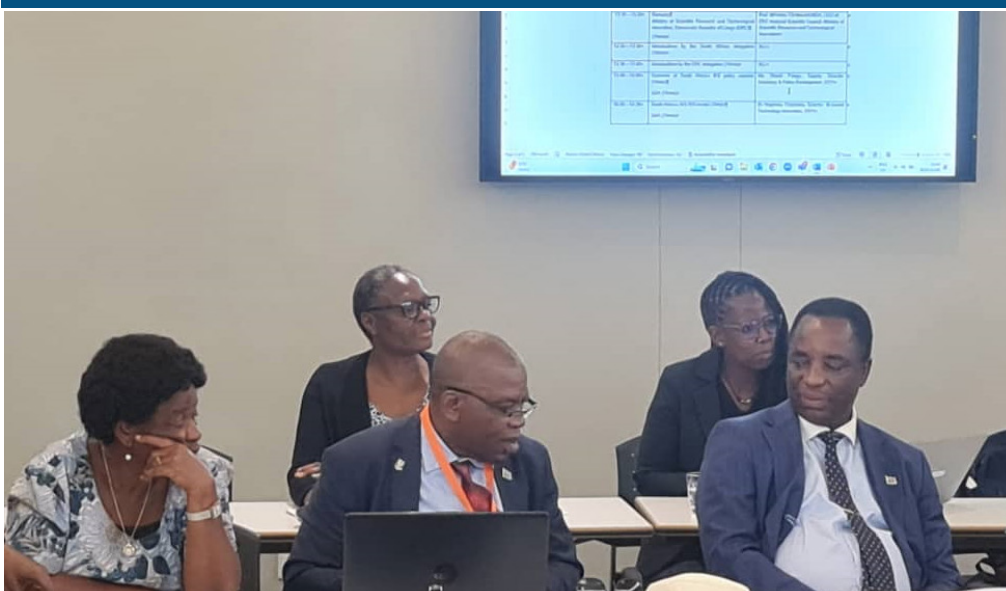
Professor Pius MPIANA TSHIMANKINDA, President of the NSC, closed the final day with a talk on research project outlines, sources of funding and writing scientific articles.

He pointed out that the writing of a scientific article is governed by a set of rules called "Instructions to Authors", and that this depends on each magazine or journal. It contains the following elements: title, authors' names (+affiliations+orcid id), abstract, keywords, introduction, materials & methods, results, discussion, conclusion, acknowledgements and bibliographical references.

A training certificate was awarded to each participant to mark the end of the researchers' seminar.

MAZONO MPIA Christian/NSC

NSC President Prof. Pius MPIANA TSHIMANKINDA attends South Africa-DRC workshop



The President of the National Scientific Council (NSC), Professor Pius MPIANA TSHIMANKINDA, took part in the South Africa-DRC workshop on Consulting and Prosperity in Science, Technology and Innovation, in Pretoria from November 30 to December 9, 2024.

The aim of the workshop is to strengthen cooperation between the two countries in the field of scientific research.

MAZONO Christian/NSC

NSC holds its 55th ordinary session in Kinshasa

The National Scientific Council (NSC) will hold its 55th ordinary session on Wednesday, December 18, 2024 in the "Saint Valentin" conference room of the RCGM in Gombe township, Kinshasa.

Several points will be dealt with at the session, including the reading and adoption of the minutes of the 54th ordinary session of the NSC on December 18, 2024, the statements of decisions and

recommendations made at the 54th ordinary session on December 18, 2024, the operation of the Research Institutes during the intersessional period, adoption of the organic framework of the Water and Environmental Research Center; exploitation of mission reports from researchers at the Research Institutes, the calendar of scientific days at the Research Institutes for 2025, specific bonuses for SRTI staff, appointment and promotion files for staff and executives at

the Research Centers and Institutes, and miscellaneous.

The session will be dominated by nominations and promotions of Research Center and Institute staff and executives.

Christian MAZONO/NSC

At the time of Innovation

Makuta, the innovative solution revolutionizing financial operations in the DRC

In the NICT landscape, an innovative solution is emerging in the DRC: Makuta. Developed by Wolf Technologies, Makuta is revolutionizing the way financial transactions are carried out.

Cécile Mbiya, owner of a small business in Kinshasa, capital of the Democratic Republic of Congo, has seen her business take a new turn since she downloaded the Makuta Business application onto her smartphone. Makuta has enabled her to simplify and secure her financial transactions. But before using this platform, Mbiya, like many merchants, relied heavily on cash payments, which led to cash management, security and traceability issues. "With cash," she explains, "I had to count and put away Congolese franc bills at the end of each day, which was very time-consuming. What's more, I was always worried about being robbed."

Thanks to Makuta, Mbiya has been able to revolutionize her business. She can now accept a multitude of payment methods, facilitating transactions with her customers. "Now," she adds, "my customers can pay by credit card, Mobile Money or their Makuta e-wallet. It's so much more convenient and secure for everyone."



Real-time cash management."

In fact, the Makuta (Swahili for "money") application, together with the traceability system, enables sales to be tracked and detailed cash reports to be generated. An essential asset for optimizing business management. Makuta has really transformed my day-to-day business," says an enthusiastic Mbiya. I gain in efficiency, security and peace of mind. It allows me to concentrate on

developing my business rather than on administrative hassles."

All in Grands Lacs

Genetic resources value chains, ABS permits, AI and translational research: A strategy for universal health coverage in the DRC "

The Democratic Republic of Congo (DRC), endowed with exceptional biodiversity, can transform its genetic resources into levers for achieving universal health coverage (UHC). Value chains, from collection to marketing of derived products, combined with the Access and Benefit Sharing (ABS) mechanism, offer a unique opportunity to develop accessible and sustainable medicines. Prof. NGBOLUA KOTO-TE-NYIWA.

The integration of artificial intelligence (AI) and translational research reinforces this dynamic by accelerating the validation of the pharmacological properties of local plants, such as *Rauvolfia vomitoria* and *Prunus africana*.

AI, using phytochemical databases and predictive algorithms, can rapidly identify bioactive molecules, simulate their biological interactions and optimize molecular screening.

Translational research, by integrating these discoveries into clinical trials and medical practice, ensures a bridge between basic research and practical application for healthcare adapted to local realities.

By structuring an effective framework for ABS licensing, transforming resources locally into high value-added products, and actively involving local communities in an equitable sharing of benefits, the DRC can generate substantial revenues to subsidize healthcare and strengthen its health infrastructure.

Inspired by examples such as South Africa's Rooibos and Madagascar's vinblastine, the DRC, thanks to AI and translational research, can not only add value to its biodiversity, but also become a model of sustainable development and innovation in public health.

It should be noted that value chains for genetic resources encompass the steps adding value to a resource, from its collection to its transformation into marketable products, while Access and Benefit Sharing (ABS) permits, established by the Nagoya Protocol, regulate the equitable exploitation of genetic resources and associated knowledge. Within this framework, universal health coverage (UHC) aims to guarantee equitable access for all to essential health services without financial hardship.

Artificial intelligence (AI) plays a key role in

accelerating the identification of bioactive molecules and optimizing the development of new drugs. In addition, translational research, linking fundamental discoveries to clinical applications, enables innovations derived from genetic resources to be rapidly integrated into healthcare.

All this must be part of a sustainable development perspective, which preserves biodiversity while ensuring equitable and profitable exploitation for current and future generations. The DRC, with its exceptional biodiversity, has a unique potential to mobilize these concepts to promote inclusive health and sustainable development of its natural heritage.

Prof. Ngbolua Koto-Te-Nyiwa, Ph

Open science and translational research: innovation levers for sustainable development in the DRC

Open science, defined as a movement to make the results, data and methods of scientific research accessible to all, coupled with translational research, which aims to transform scientific discoveries into practical applications, offers a major opportunity to stimulate technological and social innovation in the Democratic Republic of Congo (DRC).

By facilitating the dissemination of knowledge and collaboration between researchers, entrepreneurs and decision-makers, it enables the development of solutions adapted to local challenges. Research into medicinal plants is a perfect example of this potential. By making available studies on the pharmacological properties of endemic

plants such as *Trichilia emetica* or *Securidaca longepedunculata*, open science, combined with translational research, enables rapid progress from laboratory discovery to the production of drugs to treat diseases such as malaria, diabetes or cancer.

This approach ensures that the innovations resulting from such research are directly usable by local communities, and contribute to the sustainable exploitation of natural resources. In addition, the application of translational research enables social innovations to be adapted to local realities, whether in the field of healthcare, sustainable agriculture or education.

However, for these innovations to be accessible to the entire population, it is crucial to put in place public policies that support

equitable access to digital infrastructures and scientific information, while strengthening local capacities.

In this way, open science and translational research, by unleashing the potential of Congolese natural resources and talent, can become powerful drivers of sustainable development, enabling the DRC to meet the needs of its population while fitting into a global framework of shared and adapted innovation.

Prof. NGBOLUA KOTO-TE-NYIWA/NSC

Towards clean air in Kinshasa: Identifying sources of pollution for targeted action

Kinshasa, the bustling capital of the Democratic Republic of Congo, is caught in the grip of an invisible threat: air pollution. Multiple sources combine to create a toxic cocktail that exposes the city's 17.2 million inhabitants to considerable health risks on a daily basis.

A scientific study entitled "low-cost investigation into sources of PM_{2.5} in Kinshasa, Democratic Republic of the Congo", has revealed the various sources of air pollution in Kinshasa (<https://dodi.org/10.1021/acsestair.3c00024>). It was carried out by international scientists from the Universities of Harvard, Columbia, Liège, Kinshasa and Birmingham, namely Daniel Westervelt, Paulson Kasereka Isevulambire, Rodriguez Yombo Phaka, Laura Yang, Garima Raheja, George Milly, Jean Pierre Mfuamba Mulumba, Dimitrios Bousiotis, Buenimio Lomami Djibi, Faye McNeill, Sally Ng, Francis Pope, Guillaume Kiyombo Mbela and Joël Nkiama Konde and Jean-Luc Balogije Selenge.

These researchers used two types of sensors to monitor air quality in Kinshasa: a MetOne Beta Attenuation Monitor (BAM-1020) for the reference measurement of fine suspended particles, and a QuantAQ Modulair, capable of measuring gases in addition to suspended particles.

It's no secret that air is essential to life on Earth in general, and to human life in particular, since humans cannot live without breathing for more than five minutes. Today, however, this vital resource is facing increasing pollution from a variety of human activities.

Air quality monitoring in Kinshasa has long been neglected, as elsewhere in sub-Saharan Africa, where estimates of mortality due to air pollution are limited by the lack of precise data on fine particles. To fill this crucial gap, the multi-pollutant sensor network deployed in Kinshasa by the research team offers the first results of its kind in the Democratic Republic of Congo.

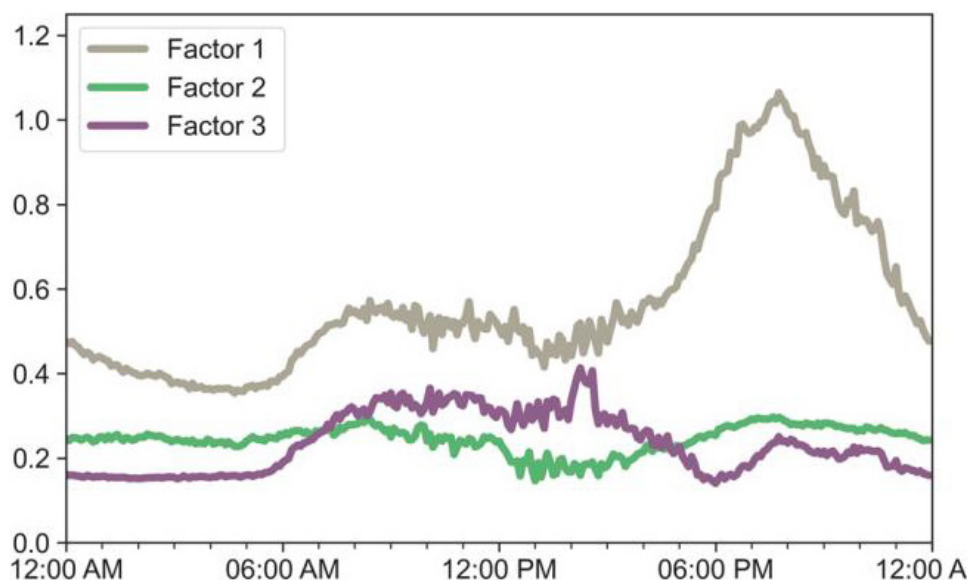
These sensors reveal a cocktail of pollutants in Kinshasa: fine and ultrafine particles (PM₁, PM_{2.5} and PM₁₀), gases such as nitrogen dioxide (NO₂), ozone (O₃), carbon monoxide (CO) and



Illustrations of air pollution sources in Kinshasa



Illustrations of air pollution sources in Kinshasa



carbon dioxide (CO₂).

Illustrations of air pollution sources in Kinshasa

The study identified three different sources of these air pollutants in the city. Local traffic combustion linked to the use of motor vehicles (factor1) is the most significant source of air pollution in Kinshasa, and is characterized by high levels of CO. Local solid fuel combustion, from the use of wood, coal and other fuels for cooking and heating, is also a major source of pollution, associated with high particulate emissions (factor2). Finally, regional biomass combustion, linked to forest fires and agriculture (factor 3), is responsible for the long-distance transport of fine particles.

Diurnal profile of each identified factor

or source of pollution in Kinshasa during the study period from 2022 to 2023.

A call to action for clean air in Kinshasa. The results of this study underline the urgent need to implement concrete solutions to combat air pollution in Kinshasa and throughout the DRC. Priority actions could include: promoting clean and efficient public transport, encouraging the use of clean fuels for cooking and heating, and implementing policies for forest fire management and sustainable agriculture.

Breathing clean air is a fundamental right for all, essential to public health and environmental protection. However, air pollution represents a major health hazard, causing respiratory illnesses, heart disease and cancer. By proactively tackling this

problem, Congolese authorities can protect the health of their citizens and contribute to a healthier environment for all.

Jean-Luc BALOGIJE SELENGE/RCDM/Bunia

Read for you



Helena caterpillar oil: a valuable source of energy and nutrients in Kinshasa

Over the past ten years, Helena, the first caterpillar oil, called *mposé* in the Democratic Republic of Congo, has established itself as a key player in a context where food security and environmental sustainability are major issues. But despite Helena's potential, *mposé* caterpillars remain rare and expensive in the Congolese capital.

Under the impetus of Héléne Baku, the first caterpillar oil produced in the DRC made its debut on the Kinshasa market in 2014. By then, a sixth animal-derived oil had appeared on the world market, certified the same year by the French UMR-IATE laboratory, CIRAD Montpe-

lier, taking its place among the five other types of animal oil already known. *Mposé*, a nutritional treasure whose 100 grams (i.e. about twenty) make up 225 calories, known for their richness in energy and essential nutrients (proteins, lipids, vitamins and minerals), have become the focus of research by this teacher renowned for her work in Food Entomology, Nutrition-Dietetics and Public Health at the National Pedagogical University of Kinshasa.

Given these assets, Héléne Baku set about transforming this under-utilized local resource into a nutritious and beneficial oil, which she named Helena. The oil quickly became a boon for many house-

holds in Kinshasa, "mainly the middle class," she says, "such as households, the protein-calorie deficient sick (kwashiorkor), the anemic, the obese, diabetics..." Seductive for its nutritional qualities and health benefits, Helena can not only be used in cooking, but also has medicinal properties.

All in Grands Lacs

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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::



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Printed on 11 Dec. 2024