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Minister Gilbert KABANDA participates in the inauguration of CMMASS/MABANGA

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Editorial

Research and women in the DRC: Incompatibility or convenience.

The celebration of March, the month dedicated to the assertion of women's rights, is not celebrated in the same way all over the world. Women in every country have their own distinctive ways of commemorating March 8th.

In other parts of the world, claims are already bearing fruit, with a significant percentage of women occupying positions of responsibility on an equal footing with men, in almost every area of life. In the Democratic Republic of the Congo, thanks to the will of the President of the Republic, Head of State and Champion of Positive Masculinity, HEM Félix Antoine TSHISEKEDI TSHILOMBO, this reality has changed, as we can now see several women in decision-making positions such as ministers, governors, representatives, etc., who have been appointed by the President of the Republic, Head of State and Champion of Positive Masculinity.

At one time, the term "emancipation of the African woman" could be found on virtually every woman's lips, leading one to believe that they were singing it in unison. But pragmatically speaking, everything seems to be dragging its feet, or at best, walking backwards, without seeing any real signs of progress in the battle being waged by women. Indeed, there is still a long way to go before African women in general, and Congolese women in particular, are able to free themselves. This is not to suggest that Congolese women themselves cannot break down stereotypes and flourish in a given field, without any limits, constraints or restraints that might stifle them, as is the case elsewhere.

Scientific research and technological innovation is a field in which many women are active. Many of them have made a name for themselves through their endogenous know-how. For example, the very first Conclave of Congolese Scientific Genius, initiated by SEM Gilbert Kabanda, showed the world the existence of gifted women who have invented and/or innovated with an ointment for albinos, oil with multiple virtues, bread made from cassava, rations for men in uniform, and so on.

Nevertheless, all these inventions and/or innovations could not fail to raise a few questions: is research incompatible with women in the DRC? What can Congolese women contribute to research? Does it seem incompatible or can she live with it?

In this year 2024, these questions are all the more relevant as they involve and interact several concepts and evoke major concerns. Very recently, the Congolese Head of State spoke of positive masculinity to encourage Congolese men to promote the development of Congolese women in several fields, including research and technological innovation. According to many observers, scientific research is not a field strictly reserved for men, since women, past and present, sometimes manage to express themselves more than men, and are therefore welcome. In other words, there is no boundary between women and research as a field, one needs the other and vice-versa. Congolese women have demonstrated on more than one occasion what they are capable of by producing good results in the field of research, and the examples are legion. Although it's difficult to verify, some people say that scientific research scares the hell out of many people, because it requires them to comply with certain requirements and procedures, and even to take risks, in order to achieve a given result. This fear would lead many women to believe that research is a masculine domain, and that it would be preferable for them to withdraw from it and remain in the domain of femininity, notably reproductively, housework, fieldwork, etc. This misconception is simply a product of the imagination and self-underestimation. In today's world, research leading to invention and/or innovation is perfectly possible for women, who have a rightful place in the field of research.

Today, it's no longer surprising to see women occupying important command positions in institutions, being present in laboratories, taking on hourly and scientific responsibilities. Some of them were interested in the exact sciences and engineering, and now they're getting into it without a moment's hesitation. In the field of applied research, Congolese women have excelled in a number of innovative projects, such as robot-rolling, albino cream, mpose oil, field rations and so on. Several research centers are satisfactorily run by women.

So it's safe to say that incompatibility has no place when it comes to women and research. Admittedly, it's not always easy to see a woman coming to terms with research, but it's possible for those who don't want to nip their ambitions, talents in the bud. Positive masculinity is one more dose that should lead men to encourage women more in research and technological innovation. Whatever men can do today, women can do too".

Professor Pius Mpiana Tshimankinda
President, NSC

Inauguration of CMMASS/MABANGA by Foundation Denis NIAKERU TSHISEKEDI, Distinguished First Lady of the DRC, accompanied by RSIT Minister Gilbert KABANDA

Activity of the Minister of SRTI

Minister Gilbert KABANDA participates in the inauguration of CMMASS/MABANGA

The Ministry of Scientific Research and Technological Innovation GILBERT KABANDA KURHENGA took part in the inauguration of the Mixed Medicine and SS Anemia Center (CMMASS/MABANGA) rebuilt by the Foundation Denis NIAKERU TSHISEKEDI (FDNT), on March 9, 2024 in Kinshasa.

In his speech at the inauguration of this newly renovated center, newly renovated by FDNT, the Minister of SRTI explained that the realization of this project is the result of our efforts to improve living conditions and care of patients with sickle cell anemia patients, and to support research in this field.

He holds out the hope of gradually overcoming this anemia, which continues to claim victims in the country and around the world.
Minister Gilbert KABANDA pays tribute to the efforts by all those involved in the construction of this particularly the workers who gave their very best, day and night, to achieve this result.
As a reminder, it was on February 11, 2023 that the Distinguished First Lady, Denise NYAKERU TSHISEKEDI launched the modernization of this medical center, which was 100% financed by her Foundation. The Patron of SRTI attended the event.

Minister G.Kabanda near the FDNT recognition sign and just behind the bust of Prof. Kabakele.

Minister G.Kabanda near the FDNT recognition sign and just behind the bust of Prof. Kabakele.

CMMASS/Mabanga is a hospital specialized in the treatment of sickle cell disease, and is part of the Institute for Research in Health Sciences (IRHS)It is located in Kalamu township, in Kinshasa city.

Christian MAZONO /NSC

Minister Gilbert KABANDA takes part in the TISC re-launch ceremony

Scientific Research and Technological Innovation Minister Gilbert KABANDA took part in the re-launch ceremony of the Technology and Innovation Support Center (TISC), presided over by Industry Minister Julien PALUKU, on March 12, 2024 in Kinshasa.

Dans son mot, le Ministre de la RSIT a affirmé que le CATI a In his speech, the Minister of SRTI affirmed that TISC's mission is to promote and develop innovation and intellectual property, with an emphasis on technology. As such, it will contribute to facilitating the mentoring of Congolese innovators and inventors.

He noted that the Center also plays a multi-functional role with the World Intellectual Property Organization (WIPO).

The Minister of Industry, Julien PALUKU, for his part said, "Innovations and inventions are still not protected to enable the initiators to pass on the benefits of their intelligence to the population."Even in the DRC, we try to protect trademarks, patents and inventions, but we need to ensure a connection with the international level so that everything done in the DRC is also protected internationally.

This member of the Congolese government also welcomed the start of training for those concerned, launched by the World Intellectual Property Organization (WIPO) to achieve the objective.

As for the head of the WIPO delegation, the DRC will benefit from the support of his organization. According to ITUKU ELANGI BOTOY, intellectual property is the key to a country's ability to promote the processing of its raw materials.

The ceremony was attended by the Ministers of Scientific Research and Technological Innovation Scientific Research and Technological Innovation, Culture, Arts and Heritage, and Post, Telecommunications and New Information and Communication Technologies.

TISC is a support structure for teachers, researchers and students in the field of industrial property, offering the following services: access to patent databases; assistance and advice on intellectual property management (drafting patents, marketing, etc.); assistance and advice on business start-ups (registering trademarks, industrial designs, etc.).

It was created in 2018 under a partnership agreement signed with the Algerian National Institute of Industrial Property, ANIIP in acronym.

Communication Unit of the Minister of RSIT/ Christian MAZONO /NSC

NSC activities

Capacity building for researchers from research institutions

NSC organizes training for HSRI researchers

The National Scientific Council organized training modules for researchers from the Health Sciences Research Institute (HSRI), from March 05 to 8, 2024 at the GMRC in Kinshasa.

The ceremony was attended by five (5) speakers. They were: Professor Pius MPIANA TSHIMANKINDA, Chairman of CSN, Professor WUFELA YAK'OKOLINGO André, Professor Benjamin ZOAWE, Maître Freddy IPUKA, and Georges MABIALA and Reagen NGOTO.

The first speaker on the first day was Professor André WUFELA. He spoke on the theme of "Researchers and the research profession". In his view, researchers must work in collaboration with their peers. He 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 researcher's window on the world. They offer a certain visibility and enhance the value of both the Research Center and the researcher. They give the latter not only a certain scientific notoriety, but also material gains.

The second speaker, Maître IPUKA BADJE spoke on "The functioning of a research institution: the role, place and mission of the researcher". He defined a research institution as an establishment; laboratory or organization specialized in scientific research. It is also a public institution with a legal personality.

For him, the functioning of a Research two main bodies: the Board of Directors and the Management Committee. And that the cornerstone of the Management Committee is the Scientific Director.

He insisted that a research administration must exist within a research institution, which is different from a conventional type of administration, to offer services to researchers.

These include: provision of information on funding sources, tendering schedules and eligibility criteria; assistance in putting together funding applications; support in protecting intellectual property rights; and assistance in financial management and the preparation of financial statements. financial management and financial reporting.

He also indicated that, the researcher's main missions are:

scientific production,

- promoting research results,
- dissemination of scientific information,
- training through scientific research.

The speaker listed eleven key qualities that a researcher must possess, including creativity, honesty, rigor, patience and openness.

The first day ended with the President of NSC, Professor Pius MPIANA TSHIMANKINDA, giving a presentation on "Writing scientific articles in the natural sciences".

He pointed out that the writing of a scientific article is governed by a set of rules that are specific to each journal or newspaper; and that the submission of an article is made with reference to the section(s) called "Instructions to Authors".

scientific article must contain the following elements: title, authors' names (+ affiliations + orcid id), abstract, keywords, introduction, materials & methods, results, discussion,conclusion,acknowledgements and bibliographical references.

The second day saw presentations on the following topics: introduction to Mendeley software, use of the plagiarism detector software, responsible management of research data, scientific reputation, visibility and marketing of the researcher(s) against a backdrop of bibliometric indicators.

The second day of training ended with a presentation by Professor Benjamin ZOAWE on best practices for a successful PowerPoint presentation.

The final day was more educational for the participants. It provided an opportunity to respond to the concerns raised by the researchers.

Speaker George MABIALA talked to the audience about responsible management of research data and writing a research project. The day also included a presentation on "From scientist to entrepreneur" by Mr. Reagen NGOTO.

The last day had not closed its doors, but the President of the CSN, Professor Pius MPIANA TSHIMANKINDA, made two presentations to the audience, one on the outline of a research project, the other on sources of research funding.

At the end of the ceremony, a certificate of participation was awarded to each participant to mark the end of the training course.

This training series has been running since January 10, 2024, for researchers from the Antivenom Center (AVC), the National Center for Remote Sensing (NCRS) and ANIIP.

MAZONO MPIA/NSC

NSC President attends the opening ceremony of the Technology and Innovation Support Center (TISC)

The President of CSN, Professor Pius Mpiana Tshimankinda, took part in the opening of TISC, during which he delivered the following speech:

"Your Excellency the Minister of Scientific Research and Technological Innovation;

Your Excellency the Minister of Industry;

Your Excellency the Minister for the Digital Economy;

Your Excellency the Minister of Culture,

Arts and Patrimony;

Mr. Representative of the World

Intellectual Property Organization

(WIPO), Geneva;

Mr. Coordinator of the TISC national network;

Ladies and Gentlemen, in your capacity as such, all protocol observed.

Allow me first of all to express, on my own behalf and on behalf of the National Scientific Council, our gratitude to His Excellency Mr. Felix Antoine TSHISEKEDI TSHILOMBO, President of the Republic of DR Congo, who has a vision that includes this issue of intellectual property in general and TISC in particular.

I would like to take this historic moment of the official launch of TISC in Kinshasa, a decisive moment in the search for solutions to accelerate the transition of the Congolese economy towards one based on science, technology and innovation, to thank Their Excellences the Ministers of Industry and Scientific Research and Technological Innovation for their ongoing and multi-faceted support for scientific research activities in general, and innovation and intellectual property protection in particular.

I would also like to thank WIPO, which is supporting the DRC in carrying out this program, and to pay tribute to Mr. Daren Tang, General Director of the World Intellectual Property Organization, as well as to Dr. ELANGI ITUKU BOTOY, Administrator, who provides the necessary relays for its action.

I couldn't go on without saying a word of thanks to the experts who will be providing this training as part of the official launch of the Technology and Innovation Support Center.

Your Excellency, Ladies and Gentlemen, Dear Experts,

Created on November 05, 1982 by Ordinance-Law 82-040 on the organization of scientific and technical research, the National Scientific Council was officially set up in 1991, nine years after the promulgation of the above-mentioned Ordinance-Law 82-040.

In accordance with Article 24 of Ordinance-Law n°82-040 of November 5, 1982 on the organization of Scientific and Technical Research, the CSN is responsible for:

1. ***deliberate on the orientations and priorities of the scientific and technological research plans and programs to be carried out in the country ;***
2. ***deliberate on the allocation of state budget resources to scientific and technological activities;***
3. ***supervise the financial management of research centers and institutes;***
4. ***approve the budgets of Research Institutes and Centers, and submit them to the Minister of Scientific Research for approval;***
5. ***approve the organic regulations of Research Centers and Institutes;***
6. ***propose to the Minister of Scientific Research the appointment and promotion of scientific and administrative personnel.***

The National Scientific Council is not only responsible for promoting scientific research and technological innovation in the DRC, but also for ensuring that the intellectual property of Congolese researchers, inventors and innovators is protected. It was in this capacity that he took charge of the scientific aspect of the organization of the Conclave of the Congolese scientific genius held at the Palais du people Chapiteau in Kinshasa in August last year under the leadership of SEM de la Scientific Research and Innovation. This Forum was opened and closed by His Excellency the President of the Republic, Head of State.

This is why the National Scientific Council is delighted with this day, and is now looking forward to the TISC program.

Therefore he looks forward to TISC becoming operational to produce applications of the results of science, technology and innovation that will allow the transformation of the lives of the Congolese population.

I believe this impatience is legitimate and justified.

Since independence, the DRC has imported almost everything it needs to survive and thrive. It exports raw materials without any processing.

Its economy thus remains dependent on the terms of trade and market prices, the levers of which are totally beyond its control. Under these conditions, it is neither capable of ensuring stable economic growth, nor of consistently improving the living conditions of its population.

It is therefore essential to encourage and protect the creative genius of our people.

This is why we greatly appreciate the work carried out by WIPO, which thought of setting up the TISC program to help developing countries, including the DRC, to reduce the technological and consequently socio-economic knowledge gaps that exist between them and industrialized countries.

The TISC program provides all these countries with modern-day technical and scientific solutions free of charge, allowing them to boost their own economies.

At this level, our job will be to inform and sensitize the DRC's scientific community to take advantage of these resources, which are made available to us purely free of charge.

Once again, we would like to thank the government for organizing such an event, and WIPO for this unhoped-for opportunity to reactivate the Congolese scientific fiber and improve the quality of research.

Long live TISC!

Long live Scientific Research and Technological Innovation!

Professor Pius Mpiana Tshimankinda
President, NSC

WORD OF CIRCUMSTANCE OF THE NSC PRESIDENT AT THE CELEBRATION OF INTERNATIONAL WATER DAY

"His Excellency the Minister of SRTI (here represented);

Mr. Secretary General of SRTI;

Distinguished Guests in your respective capacities;

All protocol observed;

It's a pleasure for me to speak at this scientific morning organized on the occasion of International Water Day.

In fact, since 1993, the United Nations coordination mechanism for water and sanitation (UN-Water) has celebrated World Water Day on March 22.

An international theme is chosen for the day each year. This year's theme is "Water for Peace and Prosperity".

This day celebrates water and raises awareness of the plight of the 2.2 billion people who live without access to drinking water. It's about taking action to tackle the global water crisis. One of the main objectives of World Water Day is to support the achievement of Sustainable Development Goal 6, which speaks of water and sanitation for all by 2030.

Over the years, we have observed that when water is scarce or polluted, or when some people have no access to it or unequal access to it, tensions can arise between the populations and countries concerned.

Recent statistics show that almost 4 billion people worldwide depend on transboundary water resources.

Faced with the worsening effects of climate change and demographic growth, the United Nations believes that it is urgent, within and between the countries concerned, to unite to protect this precious resource.

In fact, it is believed that public health and prosperity, food and energy systems, economic productivity and environmental integrity are all dependent on a functional and equitably managed water cycle.

We need to realize that water is not only a resource to be used with care and fought over, but also a human right, intrinsic to all aspects of life.

Ladies and Gentlemen, distinguished guests

It should be noted that:

- According to UN-Water, transboundary waters account for 60% of the world's freshwater flows, and 153 countries have a territory located in at least one of the 310 transboundary river and lake basins, and 468 transboundary aquifer systems can be inventoried.
- According to the Intergovernmental Panel on Climate Change, or IPCC for short, around half the world's population is facing severe water scarcity for at least part of the year.
- And according to the World Bank, water-related disasters top the list of disasters that have occurred in the last 50 years, and are responsible for 70% of all deaths from natural disasters. We witnessed this with the latest floods in our country, which caused many families to abandon their homes.

The Democratic Republic of the Congo, our great and beautiful country, is truly a

Professor Pius Mpiana Tshimankinda
President, NSC

blessing from God, not only in geological terms, with all the minerals that abound in its soil and subsoil, in terms of flora and fauna, but also in terms of water. In fact, with the Congo River's watershed incorporating the entire country fairly closely - an average flow of 41,000 m3/s - and abundant, regular rainfall, the DRC is not short of water. The country's surface waters account for approximately 52% of Africa's water reserves. However, water abundance contrasts sharply with actual supply, and this is where scientists and politicians should be speaking the same language if this is to change. Per capita water use in the Democratic Republic of Congo is considerably lower than that of several arid Sahelian countries facing physical water shortages and physical water scarcity.

Despite the abundance of surface water, the vast majority of the Congolese population relies on groundwater and springs for their drinking water. Here again, we are witnessing the proliferation of water drilling in Kinshasa and other major cities, especially by the wealthy.

In reality, as far as its materiality is concerned, water is always H2O, more or less pure; however, due to its multiple uses, including the enjoyment of human rights to water and sanitation, the value of water is apprehended differently. We can speak of :

1° Water for life, which refers to the uses and functions of water that are necessary to sustain life in general and, in particular, the health and dignity of people, both individually and collectively. This use of water must be managed with the highest priority. It is estimated that around 50 liters/person/day would be the vital minimum. Even the scarcity of financial resources should not justify denying the poorest people access to drinking water.

2° Water of public interest, which refers to uses, services and activities of general interest to society as a whole.

This is the case, for example, with domestic water and sanitation services.

3° Water for the economy, referring to water used in productive activities that generate profits and income for those who carry them out. There is no doubt that these types of activities are those that generate the greatest demand for water, and those that produce the greatest risks and impacts from pollutant discharges.

4°"Water-crime" refers to uses in illegal activities that generate unacceptable impacts, due to abusive extractions or toxic discharges, which endanger public health and the sustainability of ecosystems, seriously affecting the drinking water, availability and accessibility of water and therefore the human rights to drinking water and sanitation.

The work carried out in Lualaba and Haut Katanga by a team of researchers from UNIKIN-NPU and the University of Geneva, of which I am a member, illustrates the criminal activities of certain mining companies that discharge mining effluent into our rivers, totally polluting the population's sources of supply and depriving them of their right to access water.

The case of the Kasaï river pollution is still fresh in our memories. There is still much to be done in the water sector in our country. That's why the National Scientific Council, the government's research advisory body, through the Ministry of RSIT, has decided, despite the lack of logistical and financial resources, in collaboration with the Water and Environment Research Center "WERC", and of course under the patronage of HE the Minister of RSIT, Dr Gilbert Kabanda, to organize this scientific morning to encourage Congolese researchers to take an interest in this abundant material which, if we don't pay attention and don't pay enough attention to it, could be the cause of the pollution of the Kasai River. this abundant material which, if we don't keep a close eye on it, could lead to conflict.

Ladies and Gentlemen, dear researchers;

We think it's time to pool our efforts to boost water research.

We greatly appreciate the efforts made by everyone to carry out research in this field with a view to improving the living conditions of our compatriots. We think it's time to pull together and form a Congolese network of all those interested in water research.

We need to ward off the demon of division that makes it so difficult for Congolese men and women to join forces and work together for the welfare of the country.

We would like to extend our sincere thanks to Patience Ngelinkoto, CEO of WERC, and her Management Committee, who, with no resources, fought tirelessly to organize this scientific morning.

We would also like to thank all the speakers who agreed to share their knowledge in this field.

Thanks to all of you who came."

DYFERSCO celebrates World Science Day for Women and Girls

Congo's Women's Scientific Research Dynamics, or DYFERSCO for short, celebrated International Day of Women and Girls in Science on February 17, 2024 in Kinshasa.

During the day, a number of scientific activities were organized, including presentations on scientific cartography and the importance of nursing sciences, etc.

Several authorities and personalities were present at the ceremony. They included: the Director of the Cabinet of the Minister of SRTI, the Permanent Secretary of NSC and the Director of Scientific Cooperation of the SRTI General Secretariat.

Some testimonies were given to encourage women in scientific research to work towards proposing appropriate solutions for the country's development.

The commemoration was an opportunity for the women involved in the research to meet and exchange ideas, and to strengthen the bonds between them.

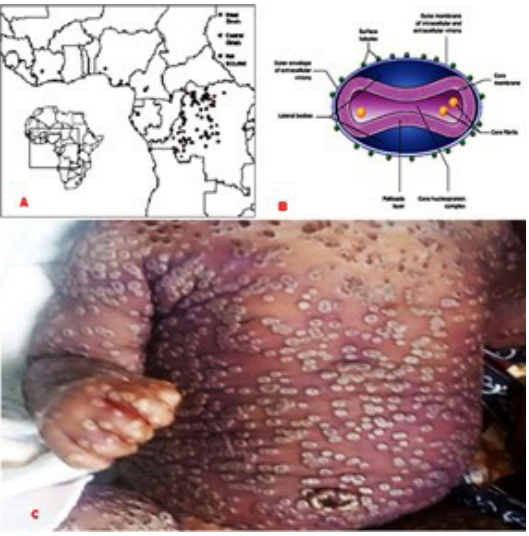
Before closing the meeting, several medals and certificates of merit were presented by the Deputy Director of Cabinet and HEM the Minister of SRTI to the former Presidents of Dyfersco of each Center and Institute of Research and Specialized Service of RSIT for their work within the Ministry.

Dyfersco is committed to the promotion of women within RSIT, and is currently headed by Mrs. Annette MUJINGA, Director at RISS.

Christian MAZONO/NSC

Reflections of our researchers

Professor NGBOLUA KOTO-TE-NYIWA and his research team publish an article entitled: "Monkeypox at the human-wildlife interface in an endemic focus: the Ubangi ecoregion in the DRC"



Professor NGBOLUA KOTO-TE-NYIWA and his research team have published a scientific paper in Kinshasa entitled: "Monkeypox at the human-wildlife interface in an endemic focus: the Ubangi ecoregion in the Democratic Republic of Congo (DRC)".

According to its researchers, Monkeypox virus infection,also known as monkeypox or orthopoxvirosis simiana, is a zoonosis, i.e. a disease transmitted to humans by animals. It was first identified in monkeys in the laboratory in 1958, and its biological agent belongs to the same family as the varicella or human smallpox virus.

The disease is most prevalent in the forests of central tropical Africa, notably in the Ubangi ecoregion particularly in the Businga health zone in the province of Nord-Ubangi (DRC).

The Monkeypox virus can be transmitted to humans, causing a syndrome whose clinical symptoms are similar to those of smallpox, such as a pustular rash, fever and so on.

They surveyed 180 people. It revealed that the disease is perceived as endemic (98.33%), with a higher incidence during the dry season (58.3%). Bushmeat consumption was identified as the main cause by 81.1% of respondents. Plants such as Manihot esculenta (cassava) are used locally to treat the disease.

Recent cases have been reported at Businga General Referral Hospital, underlining the need for increased surveillance of wild animals and bushmeat, as well as the establishment of a veterinary laboratory in North Ubangi province.

Practical applications of these findings include raising community awareness, strengthening surveillance systems and developing scientifically validated herbal treatments through molecular modelling/simulation.

To this end, the "One Health" approach can prove highly effective in the fight against Monkeypox in North Ubangi province.

This approach can be implemented through several methods: (1) Integrated surveillance: By monitoring Monkeypox cases in humans, as well as in wild and domestic animals, it is possible to detect outbreaks and take appropriate preventive measures; (2) Intersectoral collaboration :

Collaboration between human, animal and environmental health professionals would enable a better understanding of the disease's transmission dynamics and the implementation of effective control strategies; (3) Awareness-raising and education: Informing local communities about the risks associated with this disease, modes of transmission and prevention measures can help reduce infections and limit the spread of the disease; (4) Environmental management: Identifying and addressing environmental factors that favor Monkeypox transmission, such as reservoir animal habitats or areas

high risk of human-animal contact, could reduce the risk of new cases emerging.

By integrating these different approaches within a "One Health" framework, it would be possible to better prevent, detect and control Monkeypox in the DRC in general, and in North Ubangi province in particular, while simultaneously protecting human, animal and environmental health.

Mr. NGBOLUA KOTO-TE-NYIWA is Professor of Molecular Biology, Expert in Computational Biology and Scientific Advisor to the College of Advisors of the National Scientific Council (Ministry of Scientific Research and Technological Innovation). Professor NGBOLUA is Honorary Rector of the University of Gbado-Lite (North-Ubangi Province), Editor-in-Chief of the Congolese Review of Science and Technology and MERCK Foundation Laureate (2021) in Molecular Oncology. He is a member of the American Society of Cell Biology (ASCB) and the Congolese Society for Sickle Cell Disease (CSSCD).

Christian MAZONO/NSC

Dr. Vercus Lumami Kapepula and his research team have published a research paper in Kinshasa entitled "Wastewater treatment by reverse osmosis"

Dr. Vercus Lumami Kapepula and his research team have published a research paper in Kinshasa entitled "Wastewater treatment by reverse osmosis".

In this review, the authors present an overview and innovations in reverse osmosis (RO) membrane processes for treating wastewater laden with non-biodegradable micropollutants in relation to the main problems associated with purification methods. They also explain the emergence of nanomaterials and the various methods used to modify reverse osmosis membranes to improve performance. Membrane regeneration and the management of retentas are also are also taken into account.

According to them, wastewater treatment depends on its nature or chemical composition. Several methods are used to treat wastewater to eliminate non-biodegradable organic and inorganic micropollutants, such as heavy metals. These processes include :

- The biological process uses accumulator plants and sulfate-reducing bacteria (SRB) to biologically remove heavy metals, producing large-scale metal sulfide precipitates. Weaknesses of this treatment include long residence times, the need for continuous feed substrates and larger bioreactors.
- In addition, microalgae are limited and do not purify effluents.
- Chemical processes: chemical precipitation and electrochemical treatment are not effective for concentrated ions and produce excessive quantities of sludge. Ion exchange treatment offers very high ion selectivity, but the cost of the resins is too high.
- Adsorption uses either inorganic adsorbents - natural minerals, ores, clays and industrial solid wastes such as bauxite red mud, slag, ash, water treatment sludge (alum) and seawater-neutralized red mud - or organic adsorbents - organic waste from plants or animals.
- Membrane process: it has become imperative to look for new low-cost, high-efficiency technologies to eliminate non-biodegradable micropollutants.

The right technology must be scalable, applicable to field conditions, cost-effective and capable of eliminating heavy metal concentrations to established standards. Membrane technologies are therefore of immediate interest for the quality of treated water.

Researchers have defined reverse osmosis as a process of liquid phase separation by permeation through semi-selective membranes under the effect of a pressure gradient. Thin-film polyamide (TFC) and cellulose acetate (CA) membranes are the most widely used in reverse osmosis.

Since the membrane size is less than a nanometer (< 1 nm), the process requires high pressure for molecule diffusion. The higher the pressure, the greater the energy consumption.

They hammered home the point that sanitation in the Democratic Republic of Congo is underdeveloped,

wastewater from households, artisanal and modern agri-food industries ends up in rivers, lakes and streams, with harmful effects on human and aquatic health. The removal of heavy metals at low concentrations in the permeate means that good quality water can be transported back to the aquatic environment without disturbing the ecosystem, as well as perhaps the possibility of reuse by the local population.

The reverse osmosis membrane process is effective in removing organic and inorganic compounds from wastewater, and is easy to scale up.

Removal of inorganic micropollutants varies between 95% and 100%, depending on the type of polymer, materials and operating conditions applied.

Dr. Vercus Lumami Kapepula/HRC-Uvira

Researcher Patient Zamukulu and his team publish a research article entitled "Soybean response to increasing doses of DAP and urea in South Kivu"

Researcher Patient Zamukulu and his research team have published a research article in Kinshasa entitled "Soybean response to increasing doses of DAP and urea in South Kivu".

According to the researchers, soy is one of the main and most important sources of protein (40-42%) and vegetable oil (18-22%) commonly used in human nutrition. It is used in the agri-food industry to manufacture numerous protein-rich by-products to improve consumer health. However, as with other crops, its yield is constrained in sub-Saharan Africa by a number of factors, including soil fertility degradation, climate change, poor cultivation practices and inadequate choice of land for its cultivation.

Poor soil fertility management due to massive population growth affects agricultural production by increasing demand for agricultural products, thus intensifying the pressure on natural resources and the consequent continual depletion of soil fertility.

The application of inorganic fertilizers is an important factor in improving potential crop yields and thus ensuring food security for the population.

In mountainous Kivu, agriculture is predominantly peasant-based and practiced without fallow by smallholders. The export of nutrients from the soil without the use of fertilizers to compensate has led to a gradual drop in yields over the past few years, and these colleges have shown that soybeans have not been spared, with yields barely reaching 500 kg ha-1, whereas potential yields are estimated at between 1,500 and 3,000 kg ha-1 in some African countries.

Nitrogen is an important element in the production of pulses. Nevertheless, soybean demand for nitrogen varies from one agro-ecological zone to another, with seed yields influenced by different sources and doses of nitrogen applied. The researchers had shown that soybean seed yield could be improved by up to 38.7% with the application of 90 kg ha-1 of nitrogen.

The researchers demonstrated that the 'Imperial' variety of soybean was used as planting material because of its adaptation to the ecological conditions of mountainous Kivu in general and the Kabare territory in particular. It has good resistance to disease and drought. The choice of soybean as a test crop is justified by its food and economic importance in the sub-region.

Consort BELESI/NSC

Read for you

Obesity now affects over a billion people worldwide

Obesity now affects more than one billion people worldwide, including children and adolescents", revealed a recent study on World Obesity Day. besity, showing an acceleration of the scourge in low- and middle-income countries.

Between 1990 and 2022, the rate of obesity in the population quadrupled among children and adolescents, and doubled among adults, according to this vast study published in the British medical journal The Lancet and carried out in collaboration with the World Health Organization (WHO).

This "epidemic" has progressed "faster than anticipated", noted Professor Francesco Branca, Director of WHO's Nutrition for Health and Development Department, at a press conference.

According to Professor MAJID EZZATI of Imperial College London, one of the main authors of the study, the threshold of one billion people affected was initially envisaged to be crossed around 2030.

Based on data from around 220 million people in more than 190 countries, these studies suggest that almost 880 million adults will be obese in 2022 (504 million women and 374 million men). In 1990, the figure was 195 million.

Since 1990, the obesity rate has almost tripled in men (from 4.8% in 1990 to 14% in 2022) and more than doubled in women (from 8.8% to 18.5%),with disparities between countries.

in 2022, nearly 160 million children and adolescents (94 million boys and 65 million girls) will be affected. Some 30 years earlier, the figure was 31 million.

Journal of Montreal

Measles back in circulation in Quebec

"Measles, a disease once eradicated in Canada thanks to vaccination, but now making a comeback worldwide, is quietly spreading in Quebec," announced Canada's Ministry of Health and Social Services (MSSS) on March 01, 2024.

The Ministry of Health and Social Services(MHSS) announced on Thursday evening that "a few cases of measles" had been reported in recent weeks, and that "not all of them were related to a return from travel".

The precise number of cases and the regions in which they were confirmed were not specified.

This return of measles can be explained by a population vaccination rate that has fallen back below 95%, the minimum rate required to guarantee collective immunity for Quebecers.

As a result, travelers who contract the disease outside Quebec are more likely to bring it home with them and transmit it.

Trendy disease

Quebec is far from unique in this respect, with measles now back on the rise in many parts of the world.

In Canada, the Chief Public Health Officer, Dr. Theresa Tam, issued a warning last week. "The resurgence of measles worldwide, combined with declining measles vaccination coverage among school-aged children in Canada, is leading to an increase in the number of imported cases of measles," she said.

According to the latest data available from Public Health Canada, six cases of measles were active in the country between February 11 and 17.

On a global scale, the World Health Organization reported last week that more than 306,000 cases of measles had been officially recorded worldwide by 2023, an increase of 79% compared to 2022.

However, these figures are probably very underestimates, according to the WHO, which estimates that 9.2 million people were infected with measles in 2022.

Journal of Montreal

Albino care" beauty cream protects Albinos

Cosmetic products adapted to the skin of people with albinism are dominated by large groups of foreign investors based in the DRC, who to this day do not offer this type of specialized product at unreasonable prices. This is the case with companies such as Angels Cosmetics, Ghandour, SIVOP etc. The "Albino care" project tackles this problem of availability, specialization and reasonable prices, enabling this category of people to have solutions locally and within reach.

The "Albino care" project is of a manufacturing and commercial nature, as the cream must be formulated, produced and obtained all quality control certifications from the technical services of the Ministry of Health, in relation to the cream's innocuousness, and then put on the market for the benefit of consumers with this albinism problem. Albino care is designed by a Congolese in Kinshasa, and its products are prepared on the basis of raw materials from the DRC.

Albino care offers a quality cosmetic cream, adapted to the sensitive skin of people with albinism, including:

- by using local raw materials in the manufacturing process. This will also create jobs for suppliers;
- with products that have a high sun protection factor, tested in a laboratory;
- by obtaining marketing authorization from the French Ministry of Health to certify the safety of cosmetic products for people with albinism, whose skin is fragile and highly sensitive to the effects of the sun.

The mission of the "Albino care" project is to provide people living with albinism in the city of Kinshasa and throughout the DRC with locally-made, high-quality, certified cosmetics with a high sun protection factor.

These products will be readily available in specialized care centers for people with albinism, in hospitals, pharmacies or ordinary shops, as close as possible to where customers live, and at affordable prices.

People living with albinism must constantly protect their skin with high SPF creams, or cover their bodies against sunstroke.

Yet albinos are numerous in the DRC, both in the capital and in the provinces. They therefore represent a very significant potential market for a very long time, as they will always need these products for the rest of their lives.

MAZONO MPIA Christian/NSC and BELESI consort/NSC

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

ATSRC (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

RCHS (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

NCPLR (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

CEA (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 subsoil 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: bidakamuhoza@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(Congolese 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: jjmuyembet@gmail.com; Tel: 0813330242

MIPRC (Matadi Interdisciplinary Pedagogical Research Center)

Objective:--Information science.
Address: The buildings of the Matadi Higher Pedagogical Institute; Tel: 0896501462

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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. 5. approving the organic regulations of the Research Institutes and Centers;
6. 6. proposing to the Minister for Scientific Research the appointment and promotion of scientific and administrative personnel.

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