





Bendélé Ekweya té

The role of scientific research and innovation in defense in the DRC

GILBERT KABANDA provides Research Institutions with service vehicles NSC strengthens the skills of ISTM/Kalenda students

Yabéto revolutionizes technology in the DRC

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CONTENTS

Sci	entific Research: A Pillar in the Face of Security Challenges in the DRC? 3
GO	vernment Activities
•	Judith SUMINWA launches the "Congolese Telema" campaign to encourage the Congolese population to defend their homeland
Ac	tivities of the Minister of SRTI
•	GILBERT KABANDA provides research institutions with service vehicles
NS	C Activities
•	The NSC builds the capacities of ISTM/Kalenda students
Ec	hoes of Research Institutions
•	The AEC is organizing a scientific morning on the theme of "nuclear fission in Africa.
At t	he time of Innovation
•	Yabéto Revolutionizes Technology in the DRC
Re	flections of Our Researchers
•	Role of Scientific Research and Innovation in Defense in the DRC Innovating in Wartime for Survival and Reconstruction
•	Innovating in Wartime for Survival and Reconstruction
•	Solidarity in Wartime Remains a Vital Support for Soldiers and Civilians From Mobutu to Tshisekedi: Is the Church a Secular Arm of the Enemy ?
•	Plea for Peasant Seeds in Family Farming
Re	ad for you
•	Solidarity in Wartime Remains a Vital Support for Soldiers and Civilians
•	EPI Experts Trained on Fund Disbursement Procedures for Vaccina- tion
•	224 Cases of Measles and 7 Deaths Recorded in South Kivu
•	The Use of Drones in Armed Conflict: What Impact and Effectiveness ?
•	Drones in the Army: What Use ?
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۲u	blic Sector Research Centers and Institutes in the DRC

information for submission

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BULLETIN March 2025

<u>Editorial</u>

Scientific research: a pillar in the face of security challenges in the DRC?



Professor Pius MPIANA TSHIMANKINDA NSC President

n these tumultuous times, when the Democratic Republic of Congo (DRC) is facing unprecedented security challenges, the call from Her Excellency the Prime Minister, Head of Government, Judith Suminwa Tuluka "Congolais Totelema", resonates with particular urgency. It's no longer just a question of standing up, but of mobilizing, uniting and innovating to ensure the survival and future of an entire nation. The question is whether scientific research can play a decisive role in addressing this issue.

This issue of the Science and Technological Innovation Bulletin (STIB) echoes that call. It highlights the potential of scientific research to strengthen resilience in the face of the challenges of territorial integrity and peace in the DRC. This potential can only be realized if political decision-makers become aware of the urgent need to invest massively in scientific research, and to make use of this essential pillar which deserves sustained attention to overcome the current crisis. The "Bendela ekweya te" campaign finds a powerful resonance in advances in scientific research and technological innovation, the very spearheads of a nation's sovereignty. The two editions of the Forum du Génie Scientifique Congolais 2023 and 2024, initiated by His Excellency the Minister of Scientific Research and Technological Innovation, Dr. Gilbert Kabanda Kurhenga, have provided proof that this is not just a claim, but that these achievements are indeed a reality, a goldmine to support the dynamics of development and secu-

rity in the DRC. The integration of drones into the capabilities of the Congolese Armed Forces (FARDC) is just one example of the potential of cutting-edge technologies to strengthen national security. However, technology, crucial as it is, must be complemented by other approaches, such as diplomacy and solidarity. And the Congolese appreciate the value of the DRC's active diplomacy, spearheaded by His Excellency the President of the Republic, Head of State, Félix-Antoine TSH-ISEKEDI TSHILOMBO. This is where the dialectic of solidarity and defense comes into play. Indeed, in times of war, this solidarity - manifested in support for affected populations, the sharing of resources and knowledge, and collaboration between researchers, soldiers and citizens - is essential, as it transcends divisions and reminds us of our common humanity. Taken from the perspective of Jean-Jacques Rousseau, in "Du contrat social", solidarity is not only a response to war, but also a foundation of the ability to defend oneself, since a united and supportive population is more resilient in the face of external threats. But from another perspective, such as that of the primacy of state or community survival, it is imperative to go beyond national and international solidarity. This notion, evoked by Nicolas Machiavelli, has its merit in underlining that the survival of the state (or a community) is an absolute priority. In a context of war, this implies that active defense, including the use of force, may be necessary, even if it comes into tension with the ideals of solidarity.

For an aggressed country like the DRCongo, integrating scientific research as a pillar of defense is not a luxury, but a vital necessity. Scientific research must be the nation's spearhead, a strategic investment for the future. It must contribute to the design of new defense strategies, to the development of innovative solutions for reconstruction, and to the promotion of a culture of peace. In these times of crisis, scientific research is called upon to support national efforts in this direction. This issue of STIB bears witness to the ingenuity and determination of the entire Congolese people in support of our valiant soldiers, who sometimes go to the supreme sacrifice to protect our beautiful Congo. It underlines the importance of collective action for a better future. There is no doubt that scientific research is a pillar in the face of security challenges, provided it is supported. Together, "Congolais Totelema" for a better future! Let's make science our weapon, innovation our bulwark, and solidarity our strength!

INGOLAIS TÉLÉMA !

Government activity

Judith SUMINWA TULUKA, Prime Minister of the DRC

Judith SUMINWA launches the "Congolais Telema" campaign to encourage the Congolese people to defend their homeland

n March 01, 2025, the Prime Minister of the Democratic Republic of Congo (DRC), Judith SUMINWA TULUKA, launched the national "Congolais Telema" campaign.

Launching the campaign live on Congolese National Radio and Television (RTNC), the Prime Minister pointed out that this activity is part of the popular front that the DRC is waging alongside the military, diplomatic, media, judicial and economic fronts to drive aggressors out of the national territory. Continuing her speech, she noted that this project is a continuation of the "Bendele Ekweya Te" campaign, initiated in May 2021 by her predecessor Jean-Michel SAMA LUKONDE, the current President of the Senate. It aims to strengthen national unity and encourage the Congolese people to become actively involved in the war effort. In her speech, the Patroness of the Government stressed the need for every citizen to play a part in this struggle. "My dear compatriots, beyond the military front, this war is being waged on several other fronts: diplomatic, judicial, economic, media and spiritual. But the most important front is being waged by you, the Congolese people: the popular front. We need to give this war the strength of our unity, where every Congolese mobilizes to the best of his or her ability and means to defend our nation. Our destiny depends on it", she declared. She then urged all Congolese, in every province, to stand up and defend the homeland with determination. The launch comes just a few days after His Excellency the President of the Republic, Head of State, called on the country's sons and daughters to show unity,

defend their country responsibly against this war imposed on the DRC by its aggressor, Rwanda and its auxiliaries.

MAZONO Christian /NSC



Family photo of HEM Judith SUMINWA with the participants

determination, patriotism and support for men-at-arms in this time of aggression. The "Congolais Telema" campaign is part of an overall strategy to unite the population around a common cause: the defense of national sovereignty. The Minister of Communication and Media, SEM Patrick MUYAYA, took the opportunity to call on the Congolese people to stand up for their country. According to him, the government will soon launch field actions in several towns and districts of the Congolese capital, to invite the population to

Activities of the Minister of SRT

GILBERT KABANDA equips some Research Institutions with service vehicles

e Minister of Scientific Research and Technological Innovation, Dr GILBERT KABANDA, handed over vehicles to several research institutions in Kinshasa on February 20, 2025. These include the National Institute for Agronomic Study and Research (NIASR), the Geographical Institute of Congo (GIO), the Center for Chemical, Biological, Radiological and Nuclear Excellence (CBRNEC), the General Secretariat for Scientific Research and Technological Innovation (GS/ SRTI) and the Permanent Secretariat of the National Scientific Council (PS/NSC), to ensure the mobility of authorities, executives and agents.

The event took place at the Institut Géographique du Congo, where a batch of thirteen (13) service vehicles was stored. The distribution took place under the direction of the Permanent Secretary of the Ministry of Scientific Research and Technological Innovation's Procurement Unit. In his speech, the Representative of the Minister of RSIT invited the beneficiaries to make good use of the vehicles. Addressing them In turn, the beneficiaries thanked His



The event took place at the Institut Géographique du Congo, where a batch of thirteen (13) service vehicles was stored. The distribution took place under the direction of the Permanent Secretary of the Ministry of Scientific Research and Technological Innovation's Procurement Unit. In his speech, the Representative of the Minister of SRTI invited the beneficiaries to make good use of them. Taking the floor in their turn, the beneficiaries thanked His Excellency Minister Gilbert KABANDA for this highly profitable gesture for the Scientific Research and Technological Innovation sector.

MAZONO Christian/NSC

NSC activities

NSC strengthens the skills of ISTM/Kalenda students

he National Scientific Council (NSC) organized training modules for students at the Higher Institute of Medical Techniques in Kalenda (ISTM/Kalenda), on February 17, 2025 at KALENDA BAY in Lomami Province.

The course was led by two speak-Professor Damien TSHIBANGU, ers: Cooperation Advisor at NSC, and the General Manager of ISTM/Kalenda. The first speaker, the General Manager of ISTM/Kalenda) presented his institution and stressed the importance of this training for the learners. The second speaker, Professor Damien TSHIBANGU, showed participants that a good scientific research policy is one that encourages researchers to carry out research in various fields in order to elucidate certain phenomena, and to raise researchers and students to the level of technological innovation. Scientific research is a noble



profession, such as the judiciary and others, and it plays a very decisive role in the drafting of scientific publications, the development of research projects and so on. In his introduction to scientific research, he spoke of the objectives of training, including :

- Mastering the ABCs of research;;
- Understand the role of research;;

NATIONAL SCIENTIFIC COUNCIL

- Follow a university didactic pedagogy program;;
- Master the rules of scientific writing (project, research article);
- Understand the basics of scientific reputation and bibliometrics;
- Understand how to seek funding for research..

IHe then presented the three bodies of the NSC, namely the Plenary, which brings together all the heads of research institutions, the Presidency, which manages the intersessional period, and the Permanent Secretariat, which provides technical support to the NSC. The speaker of the day also spoke about the hiring of a researcher from a Research Institution, providing the prerequisites for being hired as a researcher, while specifying that this noble profession is reserved for superior minds passionate about research. He gave the etymological definition of a researcher: "one who seeks with care, with authority is therefore necessary". The trainer then introduced the students to the qualities and professions of a researcher, as well as the role of the latter in the functioning of a Research Institution. He then went on to talk about writing scientific articles, anti-plagiarism management using Mendeley software, responsible management of research data, tips for making an effective PowerPoint presentation, strategies for increasing a researcher's scientific reputation and visibility, and finally showed a model of scientific writing and the sources of funding available to researchers. Each participant received a training certificate. The NSC is dedicated to strengthening the capacities of researchers from both the Ministry of Scientific Research and Technological Innovation and the Ministry of Higher Education and Universities.

Consort Belesi/NSC



The AEC is organizing a scientific morning on the theme of "nuclear fission in Africa".

n February 10 and 17, 2025, the French Atomic Energy Commission (AEC) organized a scientific and technological awareness-raising morning in Kinshasa for its researchers and technicians, with the main theme "Nuclear fission in Africa (challenges and opportunities)".

This scientific and technological awareness-raising activity was led by Professor GOETEM from Belgium via video-conference. The aim of the presentation was to exchange and engage in scientific discussions on the dynamics of African and Western countries that have equipped themselves with power reactors for the production of electrical energy. According to Professor GOETEM, there is an opportunity to divesify electrical energy, rather than limiting ourselves to exploiting dams, solar panels or wind power. Continuing his presentation, he noted that some African countries are aware of the stakes involved in nuclear power generation, and have made it their battle horse. This is particularly true of Ghana, Egypt and South Africa, which are well advanced in this field. The speaker also pointed out that these power reactors are manufactured and supplied by countries such as Russia, Argentina, China and India. The DRC should consider acquiring a power reactor to

diversify its energy sources, he said. To conclude his presentation, he pointed out that the use of this tool requires a number of prior conditions to be met, namely the training of technical personnel to become acclimatized to the nuclear culture, obtaining adequate infrastructure, financing and securing the system to be used.

Mélanie MWAMINI/EAC

At the time of Innovation

Yabéto revolutionizes technology in the DRC

Yabéto

Inshasa, between power cuts and creative energy, has seen the birth of a bold initiative: Yabéto. This brand, whose name means "ours" in Kikongo, has a clear ambition: to provide the DRC with a complete range of computers, phones and tablets, designed and assembled locally by Congolese talent, for Congolese people..

Yabéto is a range of computers, phones and tablets designed and assembled entirely in the DRC.

Advantages of Yabéto

Yabéto is not a simple imported gadget. It's a well-thought-out technology, fine-tuned to the realities of the Democratic Republic of Congo. Where access to electricity is a national lottery, Yabéto innovates with a system incorporating a solar panel. Where the Internet plays hideand-seek with users, Yabéto offers a standard SIM card slot, making connectivity independent of the vagaries of local infrastructures. For Rodrigue Disolokele, network and maintenance technology specialist and Managing Director of Worktech Entreprise, the company behind the project, Yabéto is much more than just a brand: "It's a real philosophy of life, a new way of being and understanding the world." It's a return to basics that advocates unity, creativity, solidarity and entrepreneurial spirit. In short, it's the pride of saying, "We can create for ourselves what we consume."

The financing challenge

Like all revolutionary projects in Africa, Yabéto faces a major obstacle: financing. Yet the stakes are colossal. Ultimately, 250 direct jobs could be created, making this project a first in Central Africa. But for this dream - an audacious gamble - to become reality, investors must be ready to believe in the country's technological future.

For Yabéto is not just an industrial adventure, it's a plea for Africa's technological sovereignty. In a continent where development debates often revolve around the exploitation of natural resources by foreign firms, here's a project that reinvents the deal: from design to assembly, everything is Congolese.

So, skeptics who think it's impossible to manufacture high-tech equipment in the DRC should give it a try. Since the Conclave du Génie Scientifique Congolais (2023), STIB has been working to popularize the know-how of our inventors and innovators.

Nancy MASALY/RTNC

Reflections of our researchers

The role of scientific research and innovation in defense in the DRC

n the face of the aggression affecting the Democratic Republic of Congo (DRC), the question of the place of research in the quest for peace and the preservation of the country's sovereignty arises with particular acuity. In this context, scientific research is likely to play a decisive role in analyzing the root causes of conflict, strengthening community resilience, promoting justice and reconciliation, and, above all, contributing through innovations to the defense of the national territory.

Is the establishment of a powerful army a necessity? Undeniably. In a context of chronic insecurity, it is imperative for a state to equip itself with a robust military force to guarantee its sovereignty and ensure the protection of its citizens.

Since the dawn of mankind, scientific research has shaped the course of conflict. From ancient innovations such as Archimedes' ingenious war machines in Syracuse and the maritime power of the Athenian trier, to Roman advances in siege engineering and logistics, science has been a central player in military dynamics. Scientific research has not only been a tool for understanding and resolving conflicts, a lever for development and resilience, but also for deterrence and defense. The Middle Ages saw Chinese gunpowder revolutionize warfare, while the compass opened up new maritime routes.

In modern times, Napoleon's mobile artillery redrew the map of Europe. The world wars were laboratories for disruptive technologies: machine guns, tanks, aircraft, submarines, radar, cryptography and, above all, nuclear weapons. More recently, the Gulf Wars highlighted the precision of cruise missiles and GPS, ic research is emerging as a crucial lever for peace. It offers tools to analyze the root causes of conflict, strengthen community resilience, promote justice and reconciliation, and contribute to national defense through innovation. In a context of persistent insecurity, a strong army is indispensable. However, military force alone is not enough. It must be supported





while contemporary conflicts are marked by the rise of drones, cyberweapons and Artificial Intelligence. Of course, science is not an isolated force, as political, economic and social factors remain essential determinants in the outcome of conflicts. However, it is crucial to emphasize that history, both ancient and recent, shows that countries that have these means at their disposal often win respect.

In the DRC, a nation rich in resources but torn apart by decades of conflict, scientif-

by scientific and innovative approaches.

It is crucial to emphasize that the Conclave des Génies Scientifiques Congolais demonstrated that the country is brimming with remarkable potential. This was confirmed by the innovations presented at FGSC 2024. Surveillance technologies, secure communication systems, drones and logistical solutions can enhance the army's capabilities and improve security in the field. Congolese researchers, driven by a deep sense of patriotism and

Sciences and Technological Innovations Bulletin N°033 March 2025

the slogan "Bendele ekweya te" (May the flag not fall), are determined to contribute to peace. They are ready to work with the government and civil society to develop solutions adapted to the local context.

The adage "si vis pacem, para bellum" (if you want peace, prepare for war) has long shaped the security strategies of many nations. In the complex context of aggression in the DRC, the involvement of scientific research is more essential than ever. While it is by no means a panacea, it offers invaluable tools for building lasting peace. When mobilized strategically, in conjunction with a strong army and coherent political and social initiatives, scientific research can pave the way for lasting peace and harmonious development. It is imperative that national and international players commit themselves resolutely to this path.

> Jean-Luc/MDRC/Bunia Consort BELESI/NSC and Christian MAZONO/NSC



Innovating for survival and reconstruction in wartime

ar tests societies, institutions and individuals by its destructive nature. Although a period of suffering and destruction, war has also been a catalyst for innovation in many fields.

Indeed, it is in dark times that scientific research has generally played a crucial role, proposing innovative solutions to overcome the extreme challenges posed by this difficulty. From war medicine to military technology and reconstruction strategies, scientific research is often a factor in survival and resilience. This is when it reinvents itself to respond directly or indirectly to immediate needs, while looking to the future.

Saving lives in wartime

Among the fields where scientific research has had an immediate impact in wartime is war medicine. This was distinguished by the use of antibiotics such as Penicillin, the creation of the first blood banks, operations to remove shrapnel, plastic surgery, improved anaesthetic techniques, rehabilitation techniques and post-traumatic care, the production of certain vaccines against typhoid fever and diphtheria, mobile radiography, sedatives and antidepressants, the evolution of prostheses and implants, rapid surgery and triage care, the use of telemedicine and medical drones. In this way, periods of war have often been drivers of progress in the medical field, due to the enormous pressure exerted to meet the urgent needs of the wounded and sick.

Innovations for defense and security

Scientific research has also led to technological feats that have changed the face of warfare. The production of certain weapons and the implementation of defense systems are regularly improved thanks to research in the fields of engineering and physics. Like drones, which have revolutionized the way reconnaissance, surveillance and even attack missions are carried out, while limiting the risk of loss of life for ground troops. Scientific research has also led to technological feats that have changed the face of warfare. The production of certain weapons and the implementation of defense systems are regularly improved thanks to research in the fields of engineering and physics. Like drones, which have revolutionized the way reconnaissance, surveillance and even attack missions are carried out, while limiting the risk of loss of life for ground troops.

Advances in communications technology have also seen breathtaking development in wartime. For example, the invention of radar, encryption systems for military communications and tracking technologies have improved military efficiency, and have had positive knock-on effects in civilian sectors such as telecommunications and navigation systems.

Artificial intelligence and robotics, initially used by the military, are now being used to create applications in fields such as health, logistics and disaster management, proving that wartime research can have a lasting impact after the conflict is over..

A future after the war

The contribution of scientific research does not stop with the imminent needs of menat-arms and civilians during war. After the conflict, it serves as a fundamental pillar for the reconstruction of essential infrastructures - roads, bridges, hospitals, schools, etc. - destroyed by the war. Research into urban planning, civil engineering and territorial planning plays a key role in this.

Researchers are working on innovative building materials that enable reconstruction to be carried out more quickly and at lower cost, while making buildings more resistant to future conflicts or natural disasters. For example, recycled bricks, modular construction technologies and ecological solutions are enabling the sustainable rehabilitation of war-affected towns and villages.

Research in the fields of agriculture and food supply is also helping to find solutions for feeding populations in times of shortage. Innovative agricultural techniques, such as mobile greenhouses and automated irrigation systems, are being used to restore food production in conflict-affected areas.

Research in the human sciences

In addition to the hard sciences and engineering, the war has also highlighted the importance of the humanities. Sociologists, psychologists and anthropologists play a crucial role in understanding the impact of war on civilian and military populations. Research in social psychology, for example, helps us to better understand the mechanisms of radicalization and reconciliation, two major challenges for post-conflict

peace.

Studies on forced migration, refugees and internally displaced persons provide keys to post-war management and the integration of affected populations. Psychological rehabilitation programs and group therapies help deal with war trauma, facilitating the reintegration of individuals into society.

The challenges of wartime research

Despite significant advances, conducting research in wartime is not without its challenges. Conflict zones are often unstable and dangerous environments, making access to laboratories and research sites difficult. In addition, the destruction of infrastructure and the priority given to the immediate needs of the armed forces can hamper the progress of research.

Finally, ethical research in wartime raises crucial questions. For example, the development of new weapons technologies or the use of medical research on vulnerable populations must be governed by strict ethical principles to avoid abuses.

A light in the darkness

Scientific research in wartime, although initially intended to meet immediate military needs, often paves the way for innovations with lasting benefits long after the conflict is over. Whether it's medical treatments, defense technologies, reconstruction solutions or social understanding, wartime research can play a key role in healing devastated societies. Although war is synonymous with suffering and destruction, it can also be a catalyst for progress and innovation, offering a glimmer of hope for future generations.

In fact, scientific research in wartime serves not only to resolve immediate emergencies, but also to offer long-term solutions for the reconstruction, rehabilitation and transformation of post-conflict societies.

BELESI Consort /NSC

From MOBUTU to TSHISEKEDI: the church, a secular arm of the enemy?

manual political history of the Democratic Republic of Congo seems to be marked by one constant: the presence of an external "enemy" maneuvering behind the scenes to shape the country's destiny. From the era of Mobutu to that of TSHISEKEDI, destabilization strategies seem unchanged, and among the instruments used, the Church occupies a prominent place.

A repeated pattern: the example of the Church under Mobutu

In the 1990s, as Marshal Mobutu's regime faltered under international and domestic pressure, foreign powers used the Church as leverage to weaken his power. The security services of the time, including SARM, identified and documented this foreign influence, proving that the Church, far from being neutral, was playing an active role in the country's political shift.

Continuity under TSHISEKEDI?

Even today, the Congolese Church, notably

through certain influential figures, is a major player in political debates. No longer content with a moral or spiritual role, it is directly involved in affairs of state, influencing electoral processes, taking positions on governance issues and, often, amplifying discourses that weaken the powers that be. This role is eerily reminiscent of the one it played at the time of Mobutu's downfall.

Is the Church an instrument of interference?

Far from being a simple spiritual guide for the nation, the Church seems, in some cases, to be instrumentalized by outside forces who see in it a lever of control over the population and a platform for political pressure. Its moral influence and extensive network enable it to have a direct impact on the country's stability. Thus, those who hold the levers of global power know that, by relying on the Church, they can steer the course of national events without the need for direct military intervention.

The need for lucidity

Faced with this reality, it is crucial for the Congolese to recognize these dynamics and understand that history never ceases to repeat itself. The Church has never really placed itself "in the middle of the village"; it has always been a committed player, sometimes at the service of foreign interests. It is therefore up to leaders and people alike to adopt a critical reading of events, so as not to become, once again, the victims of manipulation orchestrated from outside.

Is yesterday's enemy still today's? Or have their means simply evolved? One thing is certain: Congo's recent history reminds us that vigilance is essential.

Prof. NGBOLUA KOTO-TE-NYIWA/NSC



A plea for farmers' seeds in family farming

Since Neolithic times (10000 BC), selection, seed multiplication, conservation and renewal of biodiversity have been the activities of the agricultural producer. Towards the end of the 19th century, with the advent of industrialization, oil and agronomic research, modern industrialized agriculture gave rise to the concept of plant improvement. The profession of farmer and that of plant breeder were separated, with interests that did not always converge.

Seed is the raw material of agricultural production. There are three categories of seed

Certified seeds (GMO (20th century), Hybrid (19th century) or Free). They are the result of a selection scheme and a quality assurance process based on strict market regulations, and are obtained from seed farms, or agris multiplicateurs in DRC jargon. They are multiplied from basic seed supplied by the research institutions that own them, and are listed in official catalogs. They become standardized commercial products. Farm-saved seeds are certified seeds from which farmers keep part of the harvest for resowing on their farms the following season. They lose their characteristics after 3, 4 or 5 successive seasons, in which case the farmer returns to the seed chain to buy new seed.

- Hybrids don't offer this possibility, as they lose their best characteristics the very next season and may, in some cases, be sterile, unable to produce offspring.
- Farmer seeds. These are not certified, as they have no intellectual property and are not among those of interest to seed farms. Family farming has been their steward since Neolithic times.

Farmer seeds. These are not certified, as they have no intellectual property and are not among those of interest to seed farms. Family farming has been their steward since Neolithic times. Certified seeds concern only a dozen or so species, including the major commercial crops (corn, wheat, manioc...and certain market garden crops). But the seeds that reach our plates number in the thousands. Limiting ourselves to certified seeds is therefore to enshrine the loss of biodiversity.

The plea is that farmers do not neglect peasant seeds, even though they are treated as illegal and informal in the same way as family farming, simply because they represent a loss of earnings for seed companies. They support crop quality and biodiversity, as well as producers' autonomy and resilience in the face of climate change. So, for example, even if you know two or three varieties of certified tomato seed, it's a good idea to buy other varieties at the market that differ in shape, color, size, taste, etc. and are not listed in the official catalog. Every farmer should have a collection of tomato seeds and share them with his neighbors. The same applies to squash, eggplants, chillies and other local species.

The question arises as to why the seed industry doesn't work in the DRC. An industry only works when there is an accessible market. The classic customers for certified seeds are agro-industrialists (0.05%) and large-scale farmers (0.95%). We need to imagine seeds that respond to the local realities, habits, needs and finances of small producers (95%) and medium-sized producers (4%) who are starting to invest in agriculture.

Prof Roger Vumilia KIZUNGU/NIASR



Solidarity in wartime remains vital support for soldiers and civilians alike

Ar is a tragic phenomenon which, more often than not, brings to the fore aspects of solidarity and resilience that are necessary to get through the good times. In times of conflict, soldiers in the field and civilian populations alike need support (moral, material or psychological). At this point, wartime solidarity becomes more than a humanitarian gesture, but a real pillar of survival and reconstruction.

Faced with extreme conditions on the ground, military personnel are sometimes confronted with challenges that go far beyond mere combat. Isolation, psychological trauma, lack of resources, precarious living conditions, etc. can all have an impact on the morale and well-being of the troops. This is where solidarity between the armed forces and civilians plays a crucial role.

In many countries, civilian organizations, NGOs, associations and volunteer groups mobilize to provide basic necessities such as blood bags, medicines, clothing and messages of comfort. This solicitude helps to maintain a bond of affection that is vital for soldiers, reinforcing their courage and commitment in the face of the enemy. Radio and TV support programs are set up to help overcome post-traumatic stress and emotional distress.

This pugilistic solidarity was not limited to soldiers on the front line, but also concerned civilians, who were often displaced and living in extremely precarious conditions. Humanitarian aid became indispensable, and was invited in through the front door. Thousands of volunteers, associations and local institutions took it in turns to provide the bare essentials of life on a temporary basis. Donors, patrons of the arts, philanthropists and charitable individuals in areas untouched by the war don't hesitate for a moment to take an active part in donations of all kinds. Whether through fund-raising, parcel delivery or awareness-raising campaigns, civil solidarity helps to maintain hope and support populations in need. This type of aid is vital to post-war reconstruction, as it serves to maintain the social fabric and offer a form of stability, even in the midst of despair.

Solidarity in wartime plays an important role in the resilience of individuals and societies. When soldiers realize that they are supported by their people, they feel a deep sense of belonging and responsibility, reinforcing their determination to defeat the enemy. The same applies to civilians who receive vital aid, who see solidarity as a sign of hope, a way of feeling less alone in their struggle for survival.

Over time, this solidarity forges a unity capable of transcending all kinds of barriers. It creates bridges between peoples and builds solid foundations for future peace. Solidarity is also useful when war ends, as it facilitates reconciliation, offering healing and reconstruction to affected communities.

In addition immediate to meetina needs, humanitarian aid also works to prevent human rights violations and rebuild essential infrastructures. Reintegration programs for ex-combatants and refugees are also in place, aimed at rebuilding lives after the horrors of conflict. These initiatives, though incomparable to the suffering experienced during the war, offer a glimmer of hope for the future.

By its very nature, war can dehumanize and even shatter individuals and societies. Yet solidarity acts as a bulwark against this dehumanization. It enables us to maintain the human values of compassion, respect and dignity, even in difficult situations. In times of conflict, every act of solidarity, no matter how small, becomes an act of resistance against barbarism and injustice, a significant step towards reconstruction.

So, solidarity in times of war should not just be seen as material support or one-off aid, but as a profound act, a commitment to humanity, peace and the future. All the more so as it enables society to rise again, rebuild and preserve hope in the midst of the darkness of conflict.

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EPI experts trained in procedures for disbursing immunization funds

he Expanded Program on Immunization (EPI), in collaboration with WHO, Gavi and UNICEF, organized a workshop in Kinshasa from February 12 to 14 to clarify the procedures and mechanisms for disbursing funds from the government and its partners for immunization..

The aim of the meeting was to build the capacity of program experts in budgetary procedures to ensure the continuity of immunization campaigns in the DRC.

"This workshop aims to strengthen our staff's skills in financing health activities. It's also about assessing the program's performance: what worked and what didn't. Indeed, the latest vaccination coverage results are not satisfactory: we have fallen to 38%, which means that 62% of children have not been vaccinated. These diseases are transmissible, and each unvaccinated child represents a risk for the country", declared Didier MBAYA NLANDI, Head of the EPI Administrative and Financial Division.

At the end of the workshop, participants pledged to meet deadlines for transmitting financial documents to the authorities and partners, to identify reliable banking institutions and trust agencies, and to analyze financial and equipment management data for immunization campaigns.

As a reminder, the rate of fully vaccinated children in the DRC rose from 35% in 2017 to 50% in 2020, before dropping to 38.6% in 2023. Several factors explain this drop, including the prolonged strike by health personnel in 2021, vaccine stockouts, inadequate organization of vaccination sessions, dysfunctional coordinating bodies, as well as low demand due to rumors and staff demotivation.

In addition, the number of unvaccinated ("zero dose") and under-vaccinated children has risen from 780,000 and 1.5 million respectively in 2021 to 1.03 million and 1.96 million in 2023, according to the Vaccine Coverage Survey (VCS..

Actualité cd and Christian Mazono CSN



224 cases of measles and 7 deaths recorded in South Kivu

Pe Office for the Coordination of Humanitarian Affairs in the Democratic Republic of the Congo (OCHA) has warned of a worsening measles epidemic in South Kivu, where 224 cases and 7 deaths have been recorded among the displaced population since the resumption of armed conflict in this part of the country.

OCHA reports that the Kalole health zone alone is the worst affected, with 101 cases and four deaths in the week of February 2 to 8 (week 6), compared with 123 cases and three deaths in the week of January 26 to February 1, 2025.

Faced with this explosion of cases in South Kivu, the World Health Organization (WHO) says it has put in place response measures, which include the isolation and treatment of those affected, as well as the distribution of water, hygiene and sanitation kits to camp occupants. Humanitarians have also expressed concern at the increase in Mpox cases in the province. A total of 590 suspected cases and one death due to Mpox were reported in the week from February 2 to 8.

Since the start of the Mpox epidemic in the Democratic Republic of Congo, the country has recorded 79.579 cases, including 15.105 confirmed cases and 1.549 deaths, spread across all 26 provinces.

As a reminder, during the clashes between the armed forces of the DRC and the M23

NATIONAL SCIENTIFIC COUNCIL rebels in the province of South Kivu, three Mpox treatment centers were destroyed in Kalehe, Minova and Miti Murhesa as a result

of bombardments.

Actualité cd and Christian Mazono CSN

DES DRONES

L'UTILISATION

DANS L'ARMÉE

Drones in the army: how are they used?

rones are used for their operational effectiveness and to protect military personnel. They are deployed in combat zones for intelligence, surveillance and reconnaissance purposes. Both a weapon and a threat, the drone acts like a guardian angel to protect troops, and conversely represents the sword of Damocles hanging over the enemy.

Thanks to drones, the military can find the opposing camp and follow its reactions for several hours as soon as an operation is over. What's more, they reduce the guard and human footprint by taking over from the human element. They also provide psychological support, warning troops of traps and attacks.

Post-operatively, drones are used to assess damage and protect the area around soldiers.

Fully structured use of drones in the army:

The use of drones is structured within a long-standing standardized framework. Regulations are constantly updated, and doctrines on drone use exist. UAVs will be used in sensitive areas and above troops, which is why drone operators are trained by the French army. The French army has its own training school, where they train not only drone operators, but also future trainers, who in turn train hundreds of trainee soldiers to pilot nano and micro drones.

Type of drone

The nano drone

Simple to pilot, reliable, powerful and robust, the nano drone is effective in all weathers. Discreet, it allows you to see without being seen, and is piloted by a non-specialized operator. Used by soldiers sent to the front line, it can be used to warn and protect troops (to identify a doubt, for example), as well as saving tactical time.

The nano combat drone most widely used by the armed forces is the Black Hornet.



Micro drones weighing less than 2 kg

This is the most widely used military drone. Suitable for all operational functions, the micro drone enables intelligence gathering, specialized actions, strike evaluation and targeted attacks. Like the nano drone, it is easy to understand and operate. It offers additional protection for troops, convoys or companies.

• The small drone

This is a multi-load, multi-mission drone, capable of carrying various payloads. It can also combat explosive devices and detect NR threats. BC (Nuclear, Radiological, Biological and Chemical) threats. These Resembling a miniature helicopter, it weighs no more than 33 grams and measures 16 cm, making it difficult to detect.

Designed for contact units, it can be used for discreet reconnaissance missions. Its flight time capacity is limited to 25 minutes, but its performance can exceed 20 km/h in flight, with a 30 km/h wind, and it can fly up to 1.5 km away from the soldier.

If the Black Hornet gives you a hankering for spying, you should know that the price of a pack including 2 drones and the control station is estimated at around \notin 40,000. Enough to make you quickly forget this idea.





1.5 tons and can fly for up to 14 hours. Manufactured in France by Safran, it is equipped with a SAR/GMTI radar that can detect moving targets up to 20km away..

Pic.net

include the Caladrius and the Drogen.

Used since 2016 by Barkhane force engineering units, the "DROGEN" offers day and night observation and detection capabilities to combat or remove doubt against the threat of explosive devices..

The SDT Patroller tactical UAV

LThe SDT Patroller is an operations support drone for the highest tactical levels. Adaptable to each mission, it is used for general operations support, tactical intelligence and strikes of opportunity.

Resembling a miniature aircraft, it weighs

The use of drones in armed conflicts: what impact, what effectiveness?

onflicts in Afghanistan and Iraq, as well as the Israeli Defense Forces' interventions against Hezbollah in 2006 and Hamas in 2009, have revealed to the general public the central place occupied by drones in contemporary military operations. These weapons systems, also known by the acronym "UAV" (unmanned aerial vehicle), have indeed become, as John Tierney, Chairman of the Subcommittee on National Security and Foreian Affairs in the US House of Representatives, suggested, "a centerpiece of the war effort" or, in the words of French deputy Jean-Claude Viollet, "indispensable equipment, no longer dispensable in operations". Yet they remain little-known, and often suffer from a misleading image..

Aircraft (almost) like any other

Drones are remotely piloted aircraft, in other words, strictly speaking, an aerial platform. In practice, these vectors are integrated into a more complex system also composed of sensors, data links, a control station, support elements, and recovery systems. This is referred to as a drone system or UAS (Unmanned Aerial System).

Even if not onboard, humans are at the heart of this system, whether for piloting the platform, which is provided by an operator, conducting the mission, implementing sensors, maintaining, or analyzing the intelligence gathered. It is this central role occupied by humans in the system that leads us to challenge the acronym "UAV" in favor of "RPA" (remotely piloted aircraft). A NATO classification divides drones into three categories, based on weight: less than 150 kg (micro, mini, and small drones), between 150 and 600 kg (tactical drones), and more than 600 kg. Within this last category, there are two families of drones. First, there are HALE (high altitude, long endurance) drones, which can fly up to 60,000 feet (approximately 18,300 meters).

To date, there is only one operational HALE: the Northrop Grumann RQ-4 Global Hawk operated by the US Air Force. Second, MALE (medium altitude, long endurance) drones, such as the American Predator and Reaper and the French Harfang, have flight altitudes between 10,000 and 50,000 feet (from 3,000 to over 15,000 meters).

To date, nearly forty countries have drone systems, but two states are particularly successful in this area. Israel, first of all, has been paying particular attention to these weapons systems since the 1960s. Israeli forces benefit from genuine operational experience, having already operated drones during the 1982 Lebanon War.

Similarly, the United States benefits from extensive experience. Drones have been

used since the Vietnam War, then during the first Gulf War and during interventions in the Balkans. But it was with the counterinsurgency conflicts in Irag and Afghanistan, and more generally with the War on Terror, that drones have forged a central place in the inventory of the American armed forces. The number of drones in the U.S. Department of Defense has thus increased from 167 in 2002 to approximately 3,000 in 2006 and to more than 7,000 to date. The U.S. Department of Defense's annual budget for drone development and acquisition increased from \$1.7 billion in 2006 to \$4.2 billion in fiscal year 2010 and is expected to reach over \$17 billion between 2008 and 2013. In 2009, for the first time, the U.S. Air Force trained more drone operators than F-16 pilots!

Permanent surveillance and reconnaissance

As explained in the Strategic Concept of Employment for Unmanned Aircraft Systems in NATO, drones offer the dual advantage of being able to operate in hazardous environments without exposing human lives and of benefiting from very high flight persistence, i.e., long flight autonomy. In this sense, they represent a genuine tactical and operational advantage, since they are capable of performances unmatched by those achieved by manned aircraft, which are naturally limited by the human factor. The RQ-4 Global Hawk thus achieves flights of up to 36 hours.

MALE drones, while most often operated on 10- to 12-hour missions, have flight persistence of up to 24 hours.

Such capabilities have now become essential for acquiring real-time situational awareness of the battlefield. From a military perspective, drones can perform a very wide range of missions, among which, as NATO's Strategic Concept emphasizes, socalled ISR (Intelligence, Surveillance, Reconnaissance) missions "are and continue to be the primary mission."

For example, they are capable of long-term surveillance of areas, observing behaviors, and providing real-time information to both command and ground forces. Their contribution is essential for route reconnaissance, in the fight against improvised explosive devices, or during Patterns of Life (POL) missions.

In a counterinsurgency engagement, it is essential to have a long-term observation capability to better understand behaviors, lifestyles, and habits. The US Air Force's Global Hawks reportedly provide more than 550 hours of imagery per month, and the American Predator and Reaper aircraft more than 700 hours of video footage every day. Given the advantages of permanent flight, some administrations have become interested in drones, such as the Department for Homeland Security, which uses them to monitor the border between the United States and Canada or Mexico. Other civilian uses include monitoring electrical installations, weather forecasting, or assessing damage following a natural disaster.

Armed Drones: A Response to Transience

Drones also offer a capability to combat an adversary who, to offset their weakness, seeks to circumvent strength and prioritize transience. The conflict in Afghanistan illustrates the importance of this capability and demonstrates a genuine shift in warfare, as forces have had to, to a certain extent, abandon traditional target planning in favor of opportunity strikes on particularly elusive, high-value targets.

Thus, the range of drone missions has been expanded to include offensive missions. The first drone capable of delivering

weapons was the Predator, which evolved from an ISR version into a "multi-role" version in 2001. This version, known as the MQ-1, was notably used in Yemen against terrorist groups involved in the attack on the USS Cole. However, its armament was then limited to two Hellfire missiles. Subsequently, the United States developed an improved version of this platform: the MQ-9 Reaper (formerly the Predator B), the first drone designed primarily for socalled Hunter/Killer missions. Deployed in Afghanistan since late September 2007, the MQ-9 is capable of carrying a combination of Hellfire missiles and laser-guided bombs

Armed drones offer several advantages. They are free from the geographical constraints inherent to the ground and avoid exposing soldiers to risk. But above all, they offer the advantage of accelerating the target engagement cycle. It was this ability to act instantly that, for example, made it possible to eliminate Saeed al-Masri, presented as Al-Qaeda's "number 3," in May 2010. This ability to compress the OODA loop (the time between Observation, Orientation, Decision, and Action) has also led some nations other than the United States to take an interest in them, such as the United Kingdom and Italy, which operate Reapers, and Turkey, which is considering their acquisition. Drones and Public Opinion

Armed drones can achieve a target without risking the lives of a unit, but some fear that this detachment, both physical and emotional, contributes to lowering the threshold for using violence, or even that it could be a source of miscalculations when opening fire.

Others, on the contrary, see this use as a way to protect the population, which fears the loss of soldiers or is reluctant to participate in operations it deems too lengthy. More generally, drones suffer from a tarnished image in the press, regularly being associated with the notion of collateral damage. However, a drone is not an autonomous system.

It is not a robot with artificial intelligence, and it is not the one that fires the weapon.

Even if it is piloted remotely, it remains an aircraft in the hands of a crew. It is therefore not the platform itself that is the source of collateral damage. A distinction must therefore be made between armed drones operated by an air force, the use of which must comply with extremely precise rules of engagement, and those operated by the CIA in clandestine operations (targeted killings), the framework for which is certainly not the same. A drone, like any weapons system, whether aerial, land-based or naval, is only what those who control it make of it.

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various neios 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	WERC (Water and Environment Research Center) Objective: To serve as a training and research center focusing on water and environ- mental management		
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	To propose solutions to problems that could arise around water. Create a national network of Congolese scientists and researchers to analyze and disseminate informa- tion on the impact of climate change in the DRC. Promote education and the right to the environment.		
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AFRC (Agro-Food Research Centre/Lubumbashi)	Aaaress: Sciences Facuity/ UNIKIN local 28; E-mail: jjmuyembet@gmail.com; Tel: 0813330242		
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 II.EO, Q/CRAA, C/Lubumbashi; E-mail: Julesnkulu@gmail.com; Tel.0997131002	MIPRC (Matadi Interdisciplinary Pedagogical Research Center) Objective:Information science. Address: The buildings of the Matadi Higher Pedagogical Institute; Tel: 0896501462		



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- 4. approving the budgets of the Research Institutes and Centers and submitting them to the Minister for Scientific Research for approval
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