



DIASPO

SCIENCE & TECH

TRIBUNE AU SERVICE DU DEVELOPPEMENT

SPÉCIAL JOURNÉE INTERNATIONALE DES DROITS DES FEMMES - MARS 2025

International Women's Rights Day 2025

This edition highlights
the contributions of women,
presenting their work,
their commitment
and their career paths

Elle a été directrice
d'un centre
de recherche
et rectrice
d'une université.
Elle a accepté
de répondre
à nos questions.

**Prof. Uphie Chinje,
leçons d'une leader
scientifique engagée**

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- ✓ Establish and maintain **partnerships** with organizations and initiatives.
- ✓ **Enhance** Girlsday237's visibility and make it more attractive to volunteers and partners.
- ✓ Participate in **events and campaigns** to expand our network.

Your Profile :

- ✓ You have a strong **connection with Africa** or are of African origin.
- ✓ You are dynamic, organized, and have excellent communication skills.
- ✓ You have experience or a keen interest in recruitment, communication, or networking.
- ✓ You are creative and able to implement concrete actions.
- ✓ You are fluent in **French, English, or German**
- ✓ You enjoy working in a team and building meaningful connections with others.

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ambassadeur du Changement



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- ✓ **Développer** et mettre en œuvre une stratégie de recrutement pour attirer de nouveaux bénévoles.
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Profil recherché :

- ✓ Tu as une **affinité avec l'Afrique** ou tu en es originaire.
- ✓ Tu es communicatif(ve), organisé(e) et motivé(e).
- ✓ Tu as de l'expérience ou un intérêt pour le recrutement, la communication ou le networking.
- ✓ Tu es force de proposition et capable de mettre en œuvre des actions concrètes.
- ✓ Tu aimes travailler en équipe et créer du lien entre les personnes.
- ✓ Tu es à l'aise en **français, anglais ou allemand**

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Editorial

Par Dr Liliane Ngahane Nana



Chaque année, le **8 mars**, est célébrée la **Journée internationale des droits des femmes**. En 2025, le thème choisi est «**Pour toutes les femmes et les filles : droits, égalité et autonomisation**», une thématique qui met en avant le rôle crucial des femmes dans tous les secteurs de la société. À travers la présente édition, nous avons voulu rendre hommage à celles qui, par leur savoir, leur engagement et leur persévérance, contribuent à faire avancer la science, l'innovation et la réflexion sociétale.

Le progrès scientifique et technologique ne peut exister sans une réflexion sur son impact dans notre société. La **propriété intellectuelle**, le lien entre recherche et industrie et l'entrepreneuriat ont un rôle clé dans la préservation des innovations, le soutien à la recherche, le développement économique et l'amélioration des conditions de vie des communautés. C'est ce qui ressort de la première collecte des données auprès de **cette physicienne dont nous retraçons le parcours académique inspirant, et qui a contribué à faire avancer la connaissance**. Mais l'accès aux carrières scientifiques reste inégal, et l'action de **cette association qui encourage les jeunes filles à choisir des métiers scientifiques** est un moteur essentiel pour démocratiser la science et en faire un levier de développement. L'interview de cette édition revient sur la carrière d'une **figure féminine incontournable de la recherche au Cameroun**, tout en mettant ainsi l'accent sur le rôle de chaque femme (fille, maman, épouse...) à **prendre cette responsabilité d'éduquer aussi bien les garçons que les filles de sorte à faire disparaître des**

inégalités mais à encourager l'expression et l'utilisation des talents de tout un chacun.

Les défis énergétiques et environnementaux sont également au cœur de notre réflexion. Le développement de solutions durables, telles que **la production d'énergie à partir des déchets et l'utilisation de matériaux de construction intelligents et écologiques** comme le **Green Fusion Block** ou **l'utilisation d'additifs locaux pour la production de briques cuites**, ouvre de nouvelles perspectives. Mais ces innovations ne sauraient masquer les crises actuelles, comme **les effets du changement climatique sur l'approvisionnement en électricité** ou encore **les difficultés de maintenance des lampadaires solaires au Cameroun**.

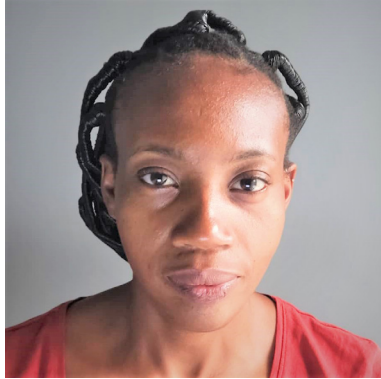
Par ailleurs, il serait intéressant d'avoir **un aperçu des expériences du parcours académique des femmes Camerounaises en Allemagne**, avec une emphase sur la **question de l'intelligence émotionnelle des femmes**, aspect qui reste trop souvent sous-estimée en Afrique subsaharienne alors qu'elle joue un rôle fondamental dans la structuration des sociétés et des entreprises.

Cette édition met donc en avant des **femmes qui apportent leur pierre à l'édifice**, qui présentent leur travail, leur engagement et leur parcours. Car mettre en lumière leurs contributions, c'est aussi œuvrer pour un avenir où l'égalité des chances et l'autonomisation deviennent une réalité.

Bonne lecture et **bonne Journée internationale des droits des femmes!**

Editorial

By Dr Ines Ngassam



International Women's Rights Day is celebrated every year on **March 8**. In 2025, the chosen theme is "**For all women and girls: rights, equality and empowerment**", a theme that highlights the crucial role of women in all sectors of society. With this year's event, we wanted to pay tribute to the women who, through their knowledge, commitment and perseverance, contribute to the advancement of science, innovation and societal reflection. Scientific and technological progress cannot exist without reflection on its impact on our society. **Intellectual property**, the link between research and industry and entrepreneurship play a key role in preserving innovations, supporting research, economic development and improving living conditions in communities. This is what emerges from the first interview of this **physicist** whose inspiring academic career, which has contributed to the advancement of knowledge. However, access to scientific careers remains unequal, and the action of **this association, which encourages young girls to choose scientific careers**, is an essential driving force in democratizing science and making it a lever for development. The second interview looks back at the **career of one of female Cameroon's leading research figures**, highlighting the role of every woman (daughter, mother, wife...) **in taking responsibility for educating both boys and girls, so as to eradicate inequalities and encourage the expression and use of everyone's talents.**

Energy and environmental challenges are also at the heart of our thinking. The development of sustainable solutions, such as **the production of energy from waste and the use of intelligent, eco-friendly building materials like Green Fusion Block or the use of local additives for fired brick production**, is opening up new prospects. But these innovations cannot mask current crises, such as the **effects of climate change on electricity supply**, or **the difficulties of maintaining solar street lamps in Cameroon**. In addition, it would be interesting to have **insights and experiences of Cameroonian women's study journey in Germany**, with an emphasis on the **question of women's emotional intelligence**, an aspect that remains too often underestimated in **sub-Saharan Africa**, even though it plays a fundamental role in the structuring of societies and businesses.

This year's edition therefore highlights the contributions of women, presenting their work, their commitment and their career paths. Because highlighting their contributions also means working towards a future where equal opportunities and empowerment become a reality. Happy reading and **happy International Women's Rights Day!**

Protéger & Valoriser le Savoir-faire

Propriété intellectuelle

Préalables pour tout.e informaticien.ne entrepreneur.e

Par un jeu question-réponse, l'experte associée au cabinet T&F éclaire sur des points essentiels mais souvent négligés par les ingénieur.es engagé.es dans la création des richesses.

L'informatique est un secteur en constante évolution, très dynamique mais également vulnérable à beaucoup d'égards et notamment, certains risques qu'il convient d'identifier, de maîtriser et de gérer en temps opportun. La propriété intellectuelle (PI) dans ce contexte est appelée à jouer le rôle de bras armée de l'informatique dans certains de ses aspects techniques et sur le plan juridique. En effet l'ingénieur informaticien peut développer dans le domaine de la technique industrielle, un brevet d'invention et/ou une autre création à caractères technique. S'agissant des aspects juridiques, la propriété intellectuelle octroj au créateur, le droit de propriété sur les objets incorporels régulièrement déposés conformément à la loi.

Ainsi, bien utilisée, la PI permet à l'entrepreneur de préserver son avantage concurrentiel sur le marché. En tant qu'ingénieur informaticien, c'est votre responsabilité de vous assurer que vos innovations et créations sont convenablement protégées. Le bon retour sur investissement commande également de vous assurer que les risques en matière de PI sont identifiés et maîtrisés pour une optimisation de l'utilisation votre patrimoine immatériel. Nous avons sélectionné pour vous 15 questions que vous devriez considérer dans votre stratégie:

EST-IL IMPORTANT D'IDENTIFIER MON PATRIMOINE IMMATÉRIEL ?

Il est important de pouvoir identifier son patrimoine immatériel afin de le protéger convenablement, de prendre les décisions appropriées notamment en matière de prévention des risques, d'établir une feuille de route, etc.

MON PORTEFEUILLE DE PROPRIÉTÉ INTELLECTUELLE OPTIMAL ?

Bien utilisé, les actifs incorporels permettent à l'entreprise de rester compétitive sur le marché. Il est donc important de choisir la bonne combinaison d'actifs de propriété intellectuelle permettant à l'entreprise d'atteindre ses objectifs.

LA QUESTION DE LA TITULARITÉ DES DROITS DE PI EST-ELLE RÉGLÉE ?

Dans l'hypothèse où votre création est le fruit d'une œuvre collective ou collaborative, il est important de clarifier, à travers un contrat, la question de la titularité des droits en amont afin d'éviter des contentieux long et coûteux pour votre entreprise.

LA CULTURE PI EST-ELLE SUFFISAMMENT DÉVELOPPÉE AU SEIN DE L'ENTREPRISE ?

Par culture propriété intellectuelle on entend l'ensemble des comportements et pratiques qui contribuent à la protection et à la valorisation des actifs immatériels. Sa mise en place au sein de l'entreprise contribue à préserver son avantage concurrentiel.

LA LIBERTÉ D'EXPLOITATION DE MES INNOVATIONS (BREVET, MARQUE, DMI, ...) A-T-ELLE ÉTÉ VÉRIFIÉE ?

En principe la liberté d'exploitation est une mesure obligatoire pour une innovation brevetable car son évaluation permet de savoir si l'objet brevetable ou breveté peut être légalement exploité par l'entreprise. Cette évaluation vous permet d'éviter de tomber dans le champ de la protection d'un titre appartenant à autrui et de vous retrouver de ce fait contrefacteur sans le vouloir.

LES RESSOURCES, POUR SÉCURISER MES INNOVATIONS, SONT-ELLES BUDGÉTISÉES ET PLANIFIÉES ?

La protection d'un produit informatique peut se faire par divers moyens qui peuvent être complémentaires : la marque, le brevet, le droit d'auteur, le dessin industriel ou le secret d'affaire. Dans la plupart des législations l'ensemble de ces droits seront acquis par enregistrement auprès d'un office de propriété industrielle à l'exception du droit d'auteur qui est acquis du seul fait de la création à condition que la création soit originale et parfois matérialisée.



Armelle FOUA MVONDO
Epse TALA

Experte en Propriété Intellectuelle
Cabinet T&F SCP

Protecting & Enhancing Know-How

AI-JE UTILISÉ LA PROPRIÉTÉ INTELLECTUELLE D'UN TIERS POUR DÉVELOPPER MON PRODUIT?

Il est important d'obtenir l'autorisation du titulaire avant d'utiliser sa propriété intellectuelle pour tout projet innovant. Au cas où vous auriez utilisé une propriété intellectuelle libre de droit, il est également important de connaître les conditions d'utilisation de l'objet car, parfois vous avez l'obligation de le citer comme auteur en contrepartie.

POURQUOI JE DOIS METTRE EN PLACE UNE STRATÉGIE DE DÉFENSE DE MES DROITS DE PI?

Les contentieux dans le domaine informatique sont de plus en plus nombreux du fait de la facilité des copies dans le numérique. Il est donc important non seulement d'identifier les risques potentiels et les actions correctives, mais également de prévoir une stratégie précontentieuse et contentieuse prévoyant un budget pour ne pas être pris de court en cas de litige.

QUELLES SONT LES DISPOSITIONS À PRENDRE POUR ÉVITER LA FUITE D'INFORMATIONS SENSIBLES À TRAVERS LES EMPLOYÉS, LES PARTENAIRES D'AFFAIRES OU LES INVESTISSEURS?

Il convient de garder à l'esprit que vos employés et partenaires ne connaissent pas systématiquement les informations confidentielles. Il est de votre responsabilité d'identifier ces éléments et de rédiger des contrats de confidentialités qui définissent clairement les limites de l'usage de vos informations confidentielles.

LES MESURES SONT-ELLES PRISES POUR ASSURER LA VEILLE CONCURRENTIELLE ET PRÉSERVER L'AVANTAGE STRATÉGIQUE DE L'ENTREPRISE?

Contrairement aux idées reçues, la veille concurrentielle est une des responsabilités de l'entrepreneur et non celle des offices de propriété intellectuelle ou des organismes de gestion du droit d'auteur. Il est important de prendre des mesures appropriées pour détecter au plutôt des usages abusifs et agir dans les brefs délais (consultation de bases de données appropriées, surveillance des marchés, consultation de presses spécialisées etc.).

QUELLE EST L'IMPORTANCE D'IDENTIFIER LES RISQUES EN MATIÈRE DE PROPRIÉTÉ INTELLECTUELLE?

Dans l'exercice de votre activité commerciale, vous pouvez être exposé à diverses catégories de risques notamment les risques juridiques, administratifs ou externes (usage non autorisé de la propriété intellectuelle de tiers, divulgation non autorisée d'informations, non maintien en vi-

gueur des droits de PI etc.). Il est important de pouvoir identifier ces risques, les catégoriser pour mettre en place une stratégie appropriée de leur prévention.

EXISTE-T-IL UNE DÉMARCHE RELATIVE À LA PRÉVENTION DES RISQUES AU SEIN DE L'ENTREPRISE?

Le contentieux concernant la propriété intellectuelle peut être dû à une maladresse des employés (exemple l'utilisation d'un logiciel sous licence en outrepassant les droits cédés). Afin de prévenir de telles situations il est important de former et de sensibiliser le personnel sur les enjeux de la PI en entreprise et les bonnes pratiques à observer.

PEUT-ON IDENTIFIER LES INFORMATIONS CONFIDENTIELLES AU SEIN DE MON ENTREPRISE?

Une entreprise est créée à partir d'une idée et beaucoup d'informations y sont partagées au quotidien. Il est important de pouvoir catégoriser ces informations afin d'identifier celles qui procurent un avantage concurrentiel à l'entreprise pour une utilisation encadrée. Notez que certaines informations peuvent être protégées par d'autres moyens que le secret d'affaire à l'instar du procédé de fabrication d'un produit qui se protège par le brevet d'invention.

AVEZ-VOUS DÉFINI DES MOYENS DE PROTECTION DES INFORMATIONS CONFIDENTIELLES?

Si vous envisagez protéger vos informations confidentielles par le secret d'affaire, il est important d'en préserver le caractère confidentiel en limitant l'accès à ces informations à un nombre limité de personnes avec lesquelles un accord de confidentialité sera signé.

COMMENT VOTRE PATRIMOINE IMMATÉRIEL CONTRIBUE-T-IL À L'ATTEINTE DES OBJECTIFS GLOBAUX DE VOTRE ENTREPRISE?

Identifier puis acquérir des droits de propriété intellectuelle est une démarche nécessaire pour l'entreprise. Ladite démarche ne prend tout son sens que si elle inclut une feuille de route qui retrace toutes les étapes nécessaires pour tirer parti de ce patrimoine et avoir un bon retour sur l'investissement.

En tant qu'ingénieur informaticien auto-entrepreneur, vous devez utiliser tous les moyens légaux à votre portée pour rester compétitif dans le marché hautement concurrentiel. La propriété intellectuelle à cet égard, plus qu'un outil de défense des droits de PI, permet de prévenir les risques, d'encadrer les projets collaboratifs, de créer des revenus complémentaires ou encore d'étendre vos droits à l'international.

Parcours & Engagement scientifique

Dr Edith DJOUKOUO NGUEYOUNOU Epse DJIAKAK

Parcours d'une physicienne passionnée et inspirante

En droite ligne de son cursus académique, elle est spécialiste de la Matière et du Rayonnement. Une véritable gardienne de la sûreté radiologique et nucléaire, et de Sécurité Nucléaire.



Propos recueillis par
Dr Liliane NGAHANE NANA

À l'occasion de la Journée internationale des droits des femmes, notre magazine met en lumière le parcours exceptionnel du Dr. DJOUKOUO, une femme brillante qui a su conjuguer une passion pour la physique fondamentale avec un engagement profond pour la sûreté et la sécurité radiologique.

Après l'obtention de son Diplôme d'Études Approfondies (DEA) en physique des systèmes complexes obtenu à l'Université de Douala, elle obtiendra plus tard un DEA en physique de la matière et du rayonnement au Centre de Physique Atomique, Moléculaire et Optique Quantique (CEPAMOQ) de l'Université de Douala. Elle poursuivra également ses années de thèse dans le domaine de la physique de la matière et du rayonnement au sein du même centre. Elle défendra sa thèse de Doctorat en 2020 sur le thème de la « localisation à plusieurs corps des atomes ultra froids en présence d'un potentiel de désordre ». Elle évolue aujourd'hui avec brio dans le domaine pointu de la sûreté radio-

logique et nucléaire ainsi que de la sécurité nucléaire.

UN RÔLE CENTRAL DANS LA SÛRETÉ RADIOLOGIQUE ET DE LA SÉCURITÉ NUCLÉAIRE

Dr. DJOUKOUO travaille au sein de l'Autorité de Sûreté Radiologique et de Sécurité Nucléaire (ASRAN) qui est sous la tutelle du Ministère de la Recherche Scientifique et de l'Innovation (MINRESI) du Cameroun. Sa mission est cruciale car elle veille à la protection des populations et de l'environnement contre les risques liés aux rayonnements ionisants et aux matières nucléaires, un travail est varié et stimulant. Concrètement, elle participe à l'élaboration et à la mise en œuvre de réglementations, réalise des inspections d'installations radiologiques en milieu industriels et hospitaliers, évalue les risques, contribue à la préparation et à la gestion des situations d'urgence radiologique et participe à des conférences et ateliers internationaux pour ne citer que ceux-ci.

Scientific career & Commitments

À l'occasion de la journée internationale des droits des femmes, elle lance un message d'espoir et d'encouragement à destination des jeunes filles: «Osez les sciences, osez l'excellence, osez la différence!».

« Chaque jour est différent », explique-t-elle avec enthousiasme. « Nous sommes confrontés à des problématiques complexes qui nécessitent une expertise pointue et une grande rigueur. Mais la satisfaction de contribuer à la sûreté et à la sécurité de tous est immense. » Son expertise en physique de la matière et du rayonnement est un atout inestimable pour comprendre et maîtriser les phénomènes physiques à l'œuvre dans le domaine nucléaire.

UN ENGAGEMENT ASSOCIATIF POUR LA PROMOTION DES SCIENCES ET DES FEMMES

Au-delà de son travail quotidien, elle s'investit activement dans certaines associations. Elle est notamment vice-présidente de « Cameroon Young Generation in Nuclear (CYGN) » et membre de « Women in Nuclear (WIN) Cameroon ». Dans ce cadre, elle participe à des actions de sensibilisation auprès du grand public sur les enjeux de la sûreté nucléaire et de la radioprotection. Elle s'investit également dans la promotion des sciences auprès des jeunes, en particulier des jeunes filles. « Il est essentiel de montrer aux jeunes générations que les sciences sont accessibles à tous, et que les femmes ont toute leur place dans ces domaines », affirme-t-elle avec conviction. Elle peut parfois intervenir dans les écoles et les universités pour partager son expérience et susciter des vocations.

LA RECHERCHE, UNE PASSION TOUJOURS VIVE

Même si son activité principale est désormais orientée vers la sûreté, elle n'a jamais abandonné la recherche. Elle continue de s'intéresser aux avancées de la physique

de la matière et du rayonnement et participe à des projets de recherche appliquée dans le domaine de la dosimétrie et de la détection des rayonnements. En ce moment, son projet porte sur la « Simulation Monte Carlo par modélisation PHITS du calcul de blindage et de la distribution des particules ionisantes dans les salles de radiothérapie utilisant les accélérateurs linéaires ».

Elle publie d'ailleurs régulièrement des articles scientifiques dans des revues spécialisées et participe à des conférences internationales. « La recherche est un moteur pour moi », confie-t-elle. « La recherche me permet de rester à la pointe des connaissances et d'apporter des solutions innovantes aux défis de la sûreté radiologique. »

DES PASSIONS QUI ÉQUILIBRENT LA RIGUEUR SCIENTIFIQUE

Loin de l'image parfois austère du scientifique, elle est une femme aux multiples passions. Elle est passionnée de voyage, de cuisine et de lecture. Elle pratique régulièrement la danse sur step, la natation et la danse de salon. Ces activités lui permettent de se ressourcer et de trouver un équilibre entre la rigueur intellectuelle de son travail et les plaisirs simples de la vie. « Il est important d'avoir des échappatoires », explique-t-elle, car selon elle « Cela permet de prendre du recul et de revenir au travail avec un esprit frais et créatif ».

À l'occasion de la journée internationale des droits des femmes, elle lance un message d'espoir et d'encouragement à destination des jeunes filles: « Osez les sciences, osez l'excellence, osez la différence! ».

Parcours & Engagement scientifique

BRISER LES STÉRÉOTYPES

Ingénieure électrotechnicienne engagée avec Girlsday237

Elle a pour ambition de participer à réduire les écarts entre les femmes et les hommes dans le monde de la recherche. Un parcours particulier.

UNE VOCATION SANS MODÈLE, UN CHEMIN SEMÉ D'EMBÛCHES

Je n'ai jamais eu de personnes dans mon entourage qui soit un modèle dans le domaine technique. Aucun de mes proches n'évoluait dans ce secteur, et pourtant, j'ai toujours su que je devais faire quelque chose de technique, sans trop savoir pourquoi. C'était là toute la difficulté. Mes parents auraient préféré que je fasse médecine, un choix plus classique pour une jeune fille. Il m'a fallu du temps pour que mon entourage familial comprenne ce que je faisais, et encore plus pour qu'il reconnaisse la valeur de mon travail. À l'université, puis plus tard dans le monde professionnel, j'étais la seule femme de mon entourage immédiat. Un mélange de respect et d'étonnement m'entourait, mais cela ne m'a jamais arrêtée. Au contraire, cela m'a donné la force de prouver que les femmes ont toute leur place dans les sciences et technologies.

scientifiques qu'elles ont développées avec leurs écoles. Nous comptons également mettre en ligne des outils pédagogiques pour aider les enseignants à mieux enseigner les STEM aux filles. Ces ressources incluront des guides pratiques, des vidéos interactives et des expériences simples à réaliser en classe, conçues pour stimuler l'intérêt des élèves et démontrer l'accessibilité des sciences.

Lors de notre première édition, cinq écoles ont participé à notre compétition scientifique. L'année suivante, elles étaient déjà sept, et en 2025, nous accueillerons neuf écoles pour la troisième édition de la compétition qui aura lieu en mars 2025 à Yaoundé. Lors de cet événement, les jeunes filles auront l'opportunité de présenter leurs projets devant un jury composé de professionnels et d'universitaires. Ce sera pour elles l'occasion de défendre leurs idées, de démontrer leurs compétences et surtout, de prendre confiance en elles dans un cadre stimulant et bienveillant.

DE L'EXPÉRIENCE À L'ENGAGEMENT: LA NAISSANCE ET LA MISSION DE GIRLSDAY237

Mon parcours m'a appris une chose essentielle: le manque de représentation féminine dans les STEM (Science, Technology, Engineering, Mathematics) constitue un frein majeur. C'est pour cela que j'ai fondé Girlsday237, une association à but non lucratif qui encourage les jeunes filles, dès l'école primaire, à s'intéresser aux sciences et aux technologies.

Notre mission est simple : ouvrir les portes des STEM aux filles en leur permettant de développer leur curiosité scientifique et technique. Chaque année, nous organisons dans ce but une compétition scientifique à laquelle les jeunes filles peuvent présenter les projets

UNE INITIATIVE POUR PRÉPARER LES TALENTS DE DEMAIN

L'éducation des filles dans les STEM ne concerne pas seulement l'égalité des chances, c'est aussi un enjeu économique et technologique. Les entreprises et institutions scientifiques ont tout intérêt à s'impliquer, car Girlsday237 constitue un vivier de futurs talents. En soutenant notre action, elles s'assurent d'avoir, dans quelques années, des ingénieures, chercheuses et techniciennes formées, prêtes à répondre aux défis de demain.



Par
Huguette MAWA

Ingénieure en électrotechnique

Nous croyons en une éducation inclusive et accessible à toutes. En soutenant Girlsday237, vous contribuez non seulement à l'émancipation des jeunes filles, mais aussi à bâtir un monde plus équilibré et innovant.

Vous pouvez aussi faire un don et nous aider à financer nos activités en cliquant ici : <https://girlsday237.org/faire-un-don/>

Ensemble, nous pouvons changer les règles du jeu et ouvrir de nouvelles perspectives aux jeunes filles. Rejoignez Girlsday237 et participez à cette belle aventure !

Scientific career & Commitments



Aujourd'hui, seulement 28% des chercheurs dans le monde sont des femmes et ce chiffre baisse encore plus dans certains domaines comme l'ingénierie. Pourtant, d'ici 2030, plus de 50 millions d'emplois dans la technologie et l'innovation seront à pourvoir.

PARTICIPER À NOTRE INITIATIVE, C'EST AUSSI RENFORCER L'INNOVATION

Plusieurs études montrent que la diversité des équipes améliore la créativité et la performance des entreprises. En encourageant les filles dès leur plus jeune âge à se tourner vers les STEM, nous contribuons non seulement à réduire l'écart entre les genres, mais aussi à préparer une main-d'œuvre plus qualifiée et diversifiée pour l'avenir.

En soutenant Girlsday237, les entreprises investissent directement dans leur futur en s'assurant que les talents de demain soient formés, motivés et prêts à relever les défis du XXI^e siècle.

UNE VISION POUR L'AVENIR

Notre vision est claire : faire de Girlsday237 un événement national, puis l'étendre à toute la région d'Afrique centrale. Nous voulons donner à chaque jeune fille la possibilité d'explorer les STEM et d'avoir les mêmes opportunités que leurs homologues masculins.

Nous nous inscrivons pleinement dans les Objectifs de Développement Durable (ODD), notamment l'ODD 4, (Education de qualité) et l'ODD 5 (Égalité des sexes).

En démocratisant l'accès aux sciences pour les filles, nous contribuons à un monde plus juste, plus équitable et surtout, plus innovant.

Rejoignez-nous pour un impact durable!

Notre association a besoin de vous! Nous recherchons des partenaires institutionnels, des entreprises dans le domaine des sciences et des technologies ainsi que des universités locales prêts à nous accompagner. Nous avons besoin de bénévoles de tous horizons :

- Organisation d'événements (logistique, animation, gestion des participants)
- Mobilisation des écoles et des jeunes filles
- Recherche de partenaires et de sponsors
- Gestion de nos réseaux sociaux et de notre site internet.



Innovations et Défis Energétiques

TURNING WASTE TO ENERGY

A sustainable solution to reduce the air pollution in Muea

One of such area facing significant air quality challenges is Muea, a peri-urban locality in Buea, Cameroon.

The urban air crisis air pollution has become a growing concern in many urban and peri-urban areas worldwide, posing serious health risks to millions of people. From vehicle emissions to industrial activities and domestic sources like kerosene lamps, the quality of the air we breathe is increasingly compromised. In cities and rapidly expanding settlements, poor air quality is linked to respiratory diseases, heart conditions, and environmental degradation. As researchers work towards solutions, monitoring air quality in heavily populated areas has become essential for understanding the severity of pollution.

One of such area facing significant air quality challenges is Muea, a peri-urban locality in Buea, Cameroon. It is one of the largest markets in Buea, attracting traders, farmers, and consumers from across the region. The market is a key contributor to the local economy, providing fresh products and various goods. Markets generate a significant amount of waste, including food scraps, plastic packaging, biodegradable materials, and other organic residues. Improper disposal of these wastes leads to environmental pollution. Additionally, Muea faces frequent power shortages, making alternative energy solutions essential. The use of traditional lighting sources such as kerosene lamps in households further exacerbates the situation by releasing fine particulate matter (PM) and harmful gases into the air.

Given Muea's role as a major economic zone, understanding its air quality status is critical for ensuring public health and safety. A recent study utilized a solar-powered air quality monitoring system equipped with an environmental sensor node to measure particulate matter (PM1, PM2.5, PM4, PM10), volatile organic compounds (VOCs), nitrogen oxides (NOx), humidity, and temperature [1]. The findings reveal an alarming reality for Muea's residents.

The data showed that PM2.5 levels in Muea reached an average of 20.34 $\mu\text{g}/\text{m}^3$, exceeding the World Health Organization's recommended daily limit of 15 $\mu\text{g}/\text{m}^3$. PM10 levels were also elevated but remained within acceptable limits. Humidity levels in Muea were notably high at 82.96%, fostering conditions for indoor fungi growth, which can further

impact respiratory health.

The study also investigated the impact of traditional lighting sources such as candles and kerosene lamps. The study found that the use of kerosene lamps resulted in dangerously high PM concentrations, far exceeding safe thresholds. The comparison between daytime and nighttime readings showed that while pollution levels slightly decreased at night due to reduced human activity, the continued use of polluting lighting methods maintained hazardous conditions.

The findings from this study highlight the urgent need for interventions to improve air quality in Muea. We should consider the following:

- Promoting Clean Energy Alternatives:** Encouraging the adoption of solar-powered lighting can significantly reduce emissions from kerosene lamps and candles.
- Enhancing Public Awareness:** Educating market vendors and residents on the dangers of air pollution and promoting safer alternatives is crucial.

• Turn market waste to energy

Turning market waste into electricity through pyrolysis presents a sustainable solution to both waste management and energy generation challenges.

The waste-to-energy process begins with collecting and sorting waste to separate biodegradable materials from plastics and other recyclables. Pyrolysis, a thermal decomposition process conducted in the absence of oxygen, is then used to break down plastics and biomass into bio-oil, syngas, and bio-char. Bio-oil can be refined into a fuel alternative like diesel, while syngas can be used directly for electricity generation.

To conclude, this approach will provide a renewable energy source. The technology aligns with several UN Sustainable Development Goals (SDGs), including affordable and clean energy (SDG 7), responsible consumption and production (SDG 12), and climate action (SDG 13). By converting market waste into electricity, communities benefit from improved energy security, and environmental protection.



By
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Epse FONGANG

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Energy and Climate Data

Reference:

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Energy Innovation & Challenges

THE GREEN FUSION BLOCK

A smart & sustainable building material

Made with crushed volcanic rocks and plastic waste, the Green Fusion Block is a game changing alternative to the traditional building materials.

As the construction industry is a major polluter, with cement production responsible for around 8% of the global carbon emission, the search for greener alternatives has gained momentum over the last few years. The Green Fusion Block is an innovative, strong, durable, and environmentally friendly construction material. But what makes it special? Let us discover it!

WHAT IS THE GREEN FUSION BLOCK?

The Green Fusion Block is a revolutionary type of brick developed as an alternative to traditional concrete blocks. Instead of cement, it uses a mix of plastic waste (PET and HDPE) and volcanic igneous rocks. This combination not only reduces construction costs but also helps tackle the growing problem of plastic pollution.

HOW IS IT MADE?

The production process is straightforward and efficient. Here's how it works:

1. Plastics are shredded to make melting easier.
2. Volcanic rocks are crushed into small pieces.
3. The plastics and rocks are mixed and heated in a special pot until the plastic melts.
4. The mixture is poured into moulds and left to cool.
5. Within minutes, the Green Fusion Block is ready!

The percentage of plastic can go from 30 to 50%, thus leading to a sizable usage of plastic waste. Unlike concrete, which takes days to cure, this block hardens in just 10 minutes, making production faster and more efficient.

Why is it Better Than Cement Blocks?

It is environmentally friendly.

- Uses recycled plastic, reducing waste in landfills.

- Requires no cement, significantly cutting down on carbon emissions.

- Helps clean up plastic pollution while utilizing volcanic rocks that would otherwise go unused. It is strong & durable.

- Has a higher compressive strength than traditional hollow concrete blocks.

- Does not absorb water, making it resistant to rain and humidity.

- Can last over five hundred years, making it one of the most durable building materials available. It is light.

- The use of plastics makes it lighter than traditional bricks, reducing transportation and labour costs.

REAL-WORLD APPLICATIONS

The Green Fusion Block can be used in:

- Houses and buildings as an alternative to concrete blocks.

- Pavements and walkways, thanks to its water resistance.

- Disaster-resistant housing, as it is stronger and less prone to cracking.

With further research, this material could also be adapted for pillars, beams, and structural elements in larger buildings.

A STEP TOWARD A GREENER FUTURE

The Green Fusion Block is more than just a construction material; it's a solution to two major global problems—plastic pollution and cement emissions. By embracing this innovative approach, we can build stronger, more sustainable structures while protecting our environment. Are we ready to change the way we build? The future of construction is here, and it's green. Let us start building smarter today!



By
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University of Buea

Innovations et Défis Energétiques

Cameroon

Effects of the climate crisis on the electricity production and consumption



By
Ange Ingrid DJOMO
University of Buea

According to the World Bank Group, over 600 million people living in sub-Saharan Africa live without electricity, which is the major course of underdevelopment, and this makes Africa the most unelectrified continent in the world.

Cameroon in sub-Saharan Africa has only 71% of its population that have access to electricity. With this being the highest in Central Africa, the consumption of electricity is still low and this low level of supply of electricity in Cameroon is a major course of underdevelopment in the country. With the country's objective to reach 5000 MW of generating capacity by 2035, according to the Energy Sector Development Project in Cameroon, the country's electricity sector is currently facing many crises of which the major course is Climate Change.

"The country's electricity generating capacity is only about 1040 MW which is far less than the objective to be met by 2035".

Despite the efforts that the Cameroon government has put in to build hydroelectric power generation stations, renewable energy sources, thermal and gas generating stations, the country's electricity generating capacity is only about 1040 MW which is far less than the objective to be met by 2035. This makes Cameroon's electricity production well below the demand needed by its growing population, and industrialization.

But something very concerning has been observed lately. Since late December 2024, many people in Cameroon have been without power. Some stays in darkness for over 8 hours, while others stay for weeks without power, and it has been seen

as a routine now. Because, these blackouts follow a rotating schedule issued by ENEO the country's electricity distributor, to stabilize the power grid and protect its equipment due to insufficient amount of power injected into the grid.

Currently, the country faces a production fall of electricity of about 70 MW from the hydroelectric power plants of Edea and Songloulou, the Memvele hydroelectric power plant left from a production of 200MW to 35 MW during the day and can only produce about 100 MW at night and the shutdown of the Natural gas-fired power plant of Kribi reported by the Cameroon Radio Television CRTV. The fall of the electricity production in the hydroelectric power plants is mostly due to the increased in heatwaves caused by climate change, as this causes the waterer in the dams to evaporate thus greatly reducing the production capacity of the power plant. The great fall in the amount of water in the Ntem river greatly affected the electricity generation capacity of the Memve'ele hydropower plant and with these sessions of heat waves that keeps on increasing as we go deeper in the dry season, the Memve'ele hydroelectric power plant output was nearly zero W in some days in January 2025. The river Sanaa which powers several key dams of the country is also greatly affected by climate-induced heat waves causing the water to evaporate. The Sanaga River accounts for about 75% of Cameroon's hydroelectricity potential making its stability very crucial for the electricity sector of the country according to businesses in Cameroon.

Energy Innovation & Challenges

“Since we have been connected to electricity, we have seen an increase in attendance and revenue. People no longer need to go to the district hospital located 20 km from here to have their test and other exams done”. With the world going deeper into the climate crisis, we need to enhance more and more innovative solutions to respond to the ever-increasing climate-induced problems.

This led to a great reduction in the amount of electricity consumption in Cameroon especially because of this, the readability of the Southern Interconnected Grid was greatly reduced making even industries disconnect themselves from the grid and prefer alternative energy resources which most of the time is diesel generators which process black smoke and worsen climate change even more.

Furthermore, the shutdown of the thermal power plants in Kribi and Dibamba due to unsettling deputies that the government owes to the power utility ENEO made the southern interconnected grid of Cameroon that is the grid that covers 7 regions of the country (west, north-west, and south-west, south, littoral, centre regions).

To address this situation, the World Bank Group, EDF (Electricity Development France) and the Cameroonian government outlined and are implementing several measures. The completion of the National hydroelectric power plant currently injecting 420 MW into the southern interconnected grid of Cameroon, thus providing about 30% of the renewable energy mix of the country reported by EDF. Moreover, the Cameroonian government has set and started implementing ambitious visions to expand electricity access in the country as 75% of the rural population of the country still doesn't have access to electricity despite their nearness to the power grid. This has been improved with the help of renewable energy resources like solar from the solar guider in Maroua and Garoua each providing

30 MW to stabilize the northern interconnected grid of Cameroon. Besides hydro and solar, the Cameroonian government is planning to exploit its huge biomass potential in a sustainable way to increase its renewable energy mix and pay off the debts owed by the Cameroonian government to the power utility ENEO for the reopening of the thermal power plants in Kribi which are crucial to managing peak demands on the power grid.

This already helped change the situation of the country as reported by the World Bank Group, “In the early morning, a senior nurse is attending her patients in the very busy medical centre of the village of Batchenga which benefits from being connected to the grid since last October. The village located an hour and a half drive from the capital of Yaoundé, Cameroon, is getting clean and renewable energy from the Nachtigal Hydro Power Plant.

“When the hospital was without electricity, it was not well attended, we could go three days without patients.” says the afore-mentioned senior nurse. “Since we have been connected to electricity, we have seen an increase in attendance and revenue. People no longer need to go to the district hospital located 20 km from here to have their test and other exams done”.

With the world going deeper into the climate crisis, we need to enhance more and more innovative solutions to respond to the ever-increasing climate-induced problems.

Innovations et Défis Energétiques

Cameroon

A maintenance crisis of solar street light

This was seen the sustainable solution to Cameroons energy challenges providing a lighting for roads and public spaces.

Solar street light projects were introduced and executed in some towns in Cameroon. This greatly reduced energy cost, and most importantly improved security. However, many of these lights are now broken and non-functional due to poor maintenance. In some Cameroon towns like Buea, most streets that were well light have now gone back to darkness.

Despite the promising start of the project for the solar street light installation in Cameroon, many streets are in complete darkness at night as many of the solar streetlights have stopped working and due to the lack of regular maintenance, the lighting systems remain nonfunctional posing a great problem in security.

WHAT EFFECT DOES DUST HAVE ON PV MODULES?

In Cameroon, most especially during the dry season there is a lot of dust generated. The main source of these suspended particles is the activity of factories and vehicles that contaminate the city air.

As the mass of dust deposition increases, power output and the efficiency of the module decrease. This is because the settling of particles on surface results in reflection of solar radiation which in turn makes the radiation energy not fully absorbable it can reduce the output of photovoltaic panels by as much as 30 percent in just one month. So regular cleaning is essential for such installations.

Good rain usually is sufficient to take care of the cleaning; however, any debris can be removed from the panels or other components with the help of a damp washcloth or paper.

Some of the main reasons for poor maintenance include:

- **Lack of skilled technicians, just a few technicians are trained to repair solar lighting systems,**
- **The projects were launched without a clear plan for long-term upkeep,**
- **Insufficient budget.**

The failure to maintain solar street-light has resulted in several negative outcomes such as:

- Public safety risks such as dark streets increase crime and road accidents.
- Wasted investments are huge amounts of money spent on purchase and installation and yet the purpose is still not fulfilled as the solar streetlights go bad just after a short period of time leaving the streets in darkness.

HOW CAN CAMEROON IMPROVE SOLAR STREET LIGHT MAINTENANCE?

Cameroon must adopt a sustainable maintenance strategy to remedy this situation. Some potential solutions include:

- Training of local technicians by investing in skill development programs.
- Smart monitoring with the use of modern technology to detect and report malfunctions in real time.
- The government can collaborate with private companies to maintain the lights and clean the panels regularly from dust.

To summarize, the poor maintenance of solar streetlights in Cameroon is a pressing issue that needs to be investigated. Without proper maintenance, these projects become wasted investments leaving communities and streets in complete darkness at night with high security problems. The government should ensure that there is proper after sales service and more train technicians to maintain our solar streetlights and create a sustainable future.

Though the demand for locally produced fired bricks with high refractory properties continue to grow in these developing countries, the multinationals enterprises base in the region directly export their bricks from abroad either from Europe, America or Asia for their kiln furnaces causing by the way a deficit in the economy of these countries.



By
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Energy Innovation & Challenges

Cameroon

Alluvial kyanite from the Yaoundé as additive in the production of fired bricks

The production of fired bricks that can resist decomposition when expose to high temperatures, pressures or chemical attacks (wear, sintering corrosion, etc.) and still maintain their strength and shape had always been a huge problematic in developing countries most especially in the sub-sahelian region.

In Cameroon, the most locally produced fired bricks hardly have excellent refractory properties. They are usually fusible bricks use for elevation during construction or for decoration proposes. To obtain resistant fired bricks commonly call refractory bricks, the raw material which is clay has to be a refractory clay from origin or a fusible clay that has been amend with alumina-silicate rich elements.

Scientific progress has proven that alumina-silicate rich elements can be found in natural rocks or crystals (minerals) put in place in specific metamorphic conditions or can be synthesize in a laboratory. The natural alumina-silicate minerals are andalousite, sillimanite, and kyanite, which are three polymorphs of metamorphism giving precise conditions of temperature and pressure.

Since 1956, evidence of kyanite deposits have been reported in the high-grade metamorphic rocks of granulites and amphibolites facies of the Yaounde group (Champetier de Ribes et Aubague, 1956a, 1956b, 1957) of which the reserves were estimated at more than two million tons in the whole Group (Ntep Ngwet et al, 1999). From these reserves only about 50 tons of kyanite minerals were mined and exported to France in 1963. Apart from that, no detailed studies, have been carried out on the characterization and valorization of these minerals. Currently, the only valorization of these minerals is as aggregate in artisanal earth mud concrete for mud brick production by indigenes.

Whereas recent studies have shown that kyanite is used to reinforce the matrices of most porous natural refractory materials with low intrinsic mullite strength, by obtaining a high strength mullite composites, characterized by low sintering shrinkage, elevated temperature ranges of densification, suitable shock resistance and excellent mechanical properties (kamseu et al, 2017; Deutou et al 2016) and thus reducing high cost technological processing and energy consumption encountered by researchers and refractory industrialists (Yang et al, 2015; Sousa et al, 2015).

Geochemical, thermal and sintering

analyses were carried out from the alluvial kyanite of the Yaounde group.

The geochemical result presents the weight percentages of major oxides from two alluvial sites (D1 and D2) of the study area with their PAAS numbers. The most highlighted oxides are Al_2O_3 (41.1-57.8%) and SiO_2 (38.6-47.1%). Fe_2O_3 is quite low (0.99-3.67%) and the other oxides are in trace concentrations. The high content of alumina is as a result of the depletion of primary silicates and the formation of secondary minerals during intense hydrolysis processes such as monosiallization (kaolinite) and alitization (gibbsite). Silica in lesser amounts as compared to alumina is associated to their loss due to heavy drenching, linked to the humid climate and washing by river water. Iron in very poor quantities is also related to the surplus weathering, associated to river flow. Titanium is in traces and the other oxides are completely leached.

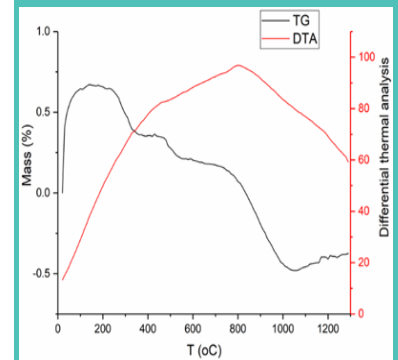
The thermal and sintering result portrays mullitization and recrystallization processes during the decomposition of kyanite. Exposed to heating conditions, kyanite completely transformed into mullite and cristobalite at $<1300^\circ C$. This can be explained by the role of some oxides during heating such as Cr_2O_3 , CaO , TiO_2 , MgO and Fe_2O_3 which tend to influence temperature rates of decomposition processes.

To conclude, it is good to note that three specifications of a mineral are require by refractory companies which are "high alumina content, low iron and alkalies content". The kyanite minerals of the Yaounde Group, have the following specifications: alumina (41.1-57.8%), silica (38.6- 47.1%) and iron (0.99-3.67%) which respond to what is needed by these companies. Also, the thermal and sintering behaviour portrays a complete transformation of kyanite to mullite and silica glass at about at $<1300^\circ C$ which is advantageous characteristic of low energy consumption compared to the standard value ($1450^\circ C$ - $1500^\circ C$) for a complete decomposition of kyanite to mullite. This shows that the alluvial kyanite from the Yaounde group is an excellent additive that should be used for the production of fired bricks.



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Dynamiques Sociales & Emotions

Unlocking the power of emotional intelligence How women in sub-Saharan Africa can conquer self-esteem challenges

*A case study by OWSD-CAM focused
on advocacy and awareness.*



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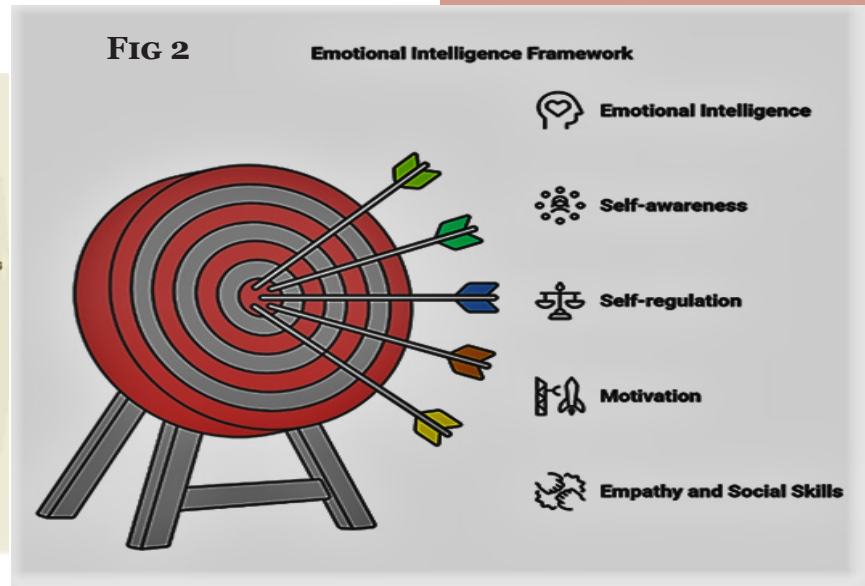
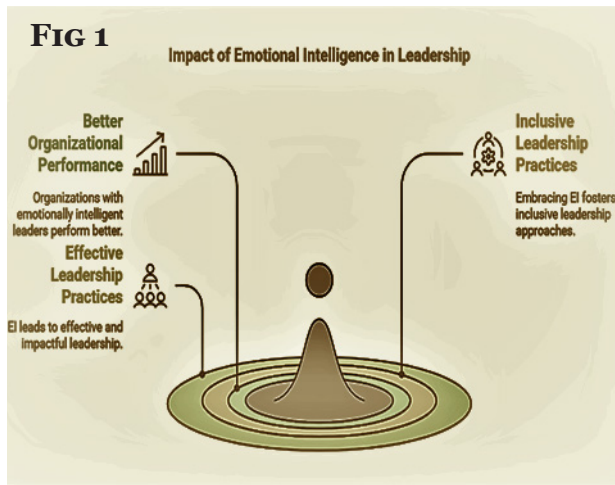
Who has not heard this statement? “Women are too emotional!” Is this a weakness or a strength? The ability to identify, understand, and manage emotions to navigate challenges is a powerful skill recognized by proponents of self-improvement. In recent years, organizational and management studies research has demonstrated a consistent link between emotional intelligence (EI) and effective leadership [1,2]. Effective leadership involves setting a clear vision and fostering an environment of trust and depends on financial access and education [3]. Despite its practical importance, socioeconomic focus remains insufficient, particularly regarding the education of African women. There is a financing gap for women entrepreneurship in sub-Saharan Africa (SSA), which exceeds \$20 billion (African Development Bank). This substantial gap highlights the financial obstacles women entrepreneurs encounter, hindering their ability to obtain the funding to start or expand their businesses. Even though women handle their credit better than men, they still face challenges in securing financing because of systemic biases and a lack of supportive networks. [4]. In Cameroon, despite a supportive context for gender equality and women’s empowerment, disparities persist as systemic issues, hindering inclusive growth. The 2020 Human Development Report shows Cameroon’s Gender Inequality Index at 0.560, ranking 141 out of 162 globally. This challenge stems from national plans and budgets that outline development priorities but fail to integrate gender equality commitments effectively. This statistic vividly illustrates the financial challenges women in sub-Saharan Africa must overcome to achieve their goals. It also highlights the necessity for targeted efforts to bridge this gap and empower women socioeconomically. Recent studies reported that EI is

the advantage of female leadership (Fig. 1). Women generally score higher than men on EI assessments. Still, gender stereotypes can influence how both genders express their emotions [5]. This insight encourages policymakers and educators to promote women’s EI and to tackle self-esteem challenges faced by women in Sub-Saharan Africa to achieve Sustainable Development Goals 3, 4, and 5.

EMOTIONAL INTELLIGENCE: DEFINITION AND GENDER-BASED PSYCHOPHYSIOLOGICAL DIFFERENCES

EI encompasses the cognitive and emotional skills necessary for navigating interpersonal relationships and social situations while regulating emotions. It includes abilities such as social cognition, empathy, and understanding the feelings of others. This skill set consists of several essential components (Fig. 2). EI mainly originates from the brain’s limbic system neurotransmitters, which govern feelings, impulses, and drives. Women possess a more developed limbic system than men. Indeed, their larger amygdala (the emotional center) enables them to activate memory and emotion alongside verbal areas more easily. In contrast, men respond to challenging or threatening situations with action. Moreover, the cingulate gyrus is more prominent in women, allowing them to consider more options and recognize errors. [6]. While women possess an inherent capacity for developing high EI, the circumstances and environments in which they live play a crucial role in shaping this potential. Factors such as access to education, social support networks, and cultural expectations could significantly influence women’s EI development.

Social Dynamics & Emotions



EI AND SELF-ESTEEM IN SUB-SAHARAN : CULTURAL EXPECTATION AND SOCIETAL NORMS IMPACTS

Traditional gender roles often dictate that women are responsible for primary household chores, child-rearing, and caregiving duties. Additionally, women may face pressure to marry early, sometimes through arranged marriages, which can limit their opportunities for education and career development. Girls encounter various barriers to education, including cultural biases, financial constraints, and lack of access to schools. Societal expectations often portray women as nurturing, patient, and self-sacrificing while discouraging emotional expression to seek external validation. Challenging these traditional norms or pursuing non-traditional roles can lead to stigma against women [8]. These cultural expectations and societal norms can hinder women's emotional intelligence, reducing their ability to connect and empathize with others. This pressure affects their personal and professional lives, self-esteem, and overall emotional well-being.

Advocacy and awareness: two tools for addressing self-esteem challenges

Various initiatives geared towards empowering women can significantly enhance their educational prospects, skills development, and economic independence. These initiatives often incorporate comprehensive training sessions that cover a wide array of vocational skills, ranging from digital literacy to entrepreneurship, thereby equipping women with the tools necessary to thrive in various sectors. Fostering support networks and mentorship opportunities can provide invaluable guidance and encouragement. Experienced mentors can help women navigate the complexities of societal expectations and pressures, enabling them

to cultivate resilience and self-confidence. OWSD-CAM missions foster this empowerment. Indeed, by encouraging emotional expression and integrating self-care practices, OWSD-CAM encourages women to enhance their emotional regulation and self-awareness. For instance, workshops focusing on emotional intelligence can teach participants effective stress management techniques, conflict resolution skills, and methods to foster positive relationships. These strategies contribute to personal growth and bolster women's ability to handle life's challenges gracefully. Indeed, according to Rose, an OWSD-CAM woman: "OWSD-CAM teaches me self-awareness and self-regulation, allowing me to remain calm and composed in high-pressure situations. I know now how to use my empathy and social skills to build strong relationships with my team members, fostering a collaborative and supportive work environment." Moreover, the organization believes that raising awareness about issues related to gender equality is paramount. By challenging deeply entrenched cultural norms that undermine women's roles in society, these initiatives can help cultivate a more supportive and inclusive environment. Finally, the Organization must focus on crucial advocacy efforts in this context. Indeed, these efforts can lead to strategic policy changes that improve women's rights and broaden their opportunities in various areas, including education, healthcare, and employment. Ultimately, by addressing these multifaceted challenges, society can foster an equitable environment that empowers women in SSA. This will enable women to harness their EI and support them in building robust self-esteem, paving the way for a brighter, more empowered future.

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Dynamiques Sociales & Emotions

Academic Journey Abroad

Insights and Experiences of a Handful of Cameroonian Women in Germany

This document was written based on a survey of a representative cross-section of former female students from the Cameroonian community in Germany who have successfully completed their studies and are now in full-time employment.



Melissa TELONG

Scientific Assistant

Germany is ranked fourth in the world the most popular countries in which students prefer to study abroad, behind the USA, UK and Australia. A number of reasons justify this choice, including the quality of life, the employment opportunities in Germany after graduating, the economic situation and safety of the country. In sub-Saharan Africa and for several years, Cameroon has been the country with the highest number of students in the Germany, especially under the former Chancellor Angela Merkel. Indeed, during winter semester 2023/24, 1.8% of international students were Cameroonian, corresponding to around 6,800 students (DAAD, 2024). Studies carried out in Burkina Faso (Loye, Frenette, & Kobiané, 2020) and in Europe (Smeding, 2012) have shown that men were more likely than women to stay on in STEM (science, technology, engineering and mathematics) subjects. To mark the International Women's Rights Day, this article, based on a survey, looks at the motivations, career paths, challenges and lessons learnt by Cameroonian women who have successfully studied in Germany. The aim is to highlight their experiences and inspire future generations.

1. FEATURES OF THE SURVEY

The survey was carried out in a very private circle of twenty women of Cameroonian origin and/or nationality who have successfully completed their studies in Germany and are active in the working world. This survey is intended to be a preliminary representation of an in-depth survey to come. The profiles correspond to women between the ages of 25 and 50. They studied in federal states scattered from north to south and from east to west of the 'Bundesrepublik Deutschland', among which almost 35% studied in Berlin. Of the women surveyed, 35% had studied in a general university and the rest in an university of applied sciences, also known as a 'Fachhochschule'. The participants fields of study and work cover a vast majority of sectors and are grouped into engineering/technology (50%), business/economics (30%), health/medicine (15%) and social sciences/humanities (5%). 40% have a master's degree and 10% have a doctorate as their highest qualification.

2. MOTIVATION AND ACADEMICS EXPERIENCES

According to (Berka & Marek) and (OECD, 2013) the dropout rate in Europe is 30% and the reasons for this can be rooted in the preliminary students skills, as well as the place and choice of study. The participants gave their reasons for choosing to study in Germany. The survey results show that this cross-section of the Cameroonian female diaspora chose this country for the following reasons: better career perspectives (50%), affordable tuition fees

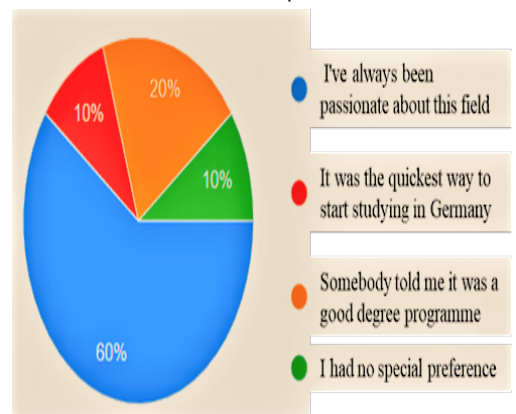
(20%) and a high-quality education system (15%). Some mentioned family reasons and 'life circumstances'. Preliminary data collected by (D'Ippoliti & Flechtner, 2022) show that there are three groups of reasons that influence students' choice of subject in academy. These are individual characteristics like school grades, field specific characteristics like the expected income, and control variables like migration background. Figure 1 highlights the data collected about the motivation behind the field of study choice of the Cameroonian women who took part in the survey.

The vast majority (60%) of the women have always been passionate about the specific field they studied, which made their subject choice easier. 20% of them followed the recommendations of a relative or specialist adviser and 10% admitted having had no special preference in the beginning. The remaining 10% had a slightly more pragmatic approach and set about choosing the course that would enable them to start studying as soon as possible in Germany.

The difficulties encountered by former Cameroonian female students in Germany were due to the language barrier (45%), the cultural differences between Cameroon and Germany (25%), and the lack of role models and mentors (20%). One participant mentioned the difficulty of combining student work with full-time study. Another admitted having felt that her technical and practical skills were below the German average during the first semester.

3. Transition from the academy to the workplace

Many students around the world look forward to, but at the same time dread the end of their studies, because it propels them de facto into the world of full-time work, to which it can be challenging to adapt. This transition is not always easy to manage and can for many graduates be the source of much frustration, loss of confidence and even depression.

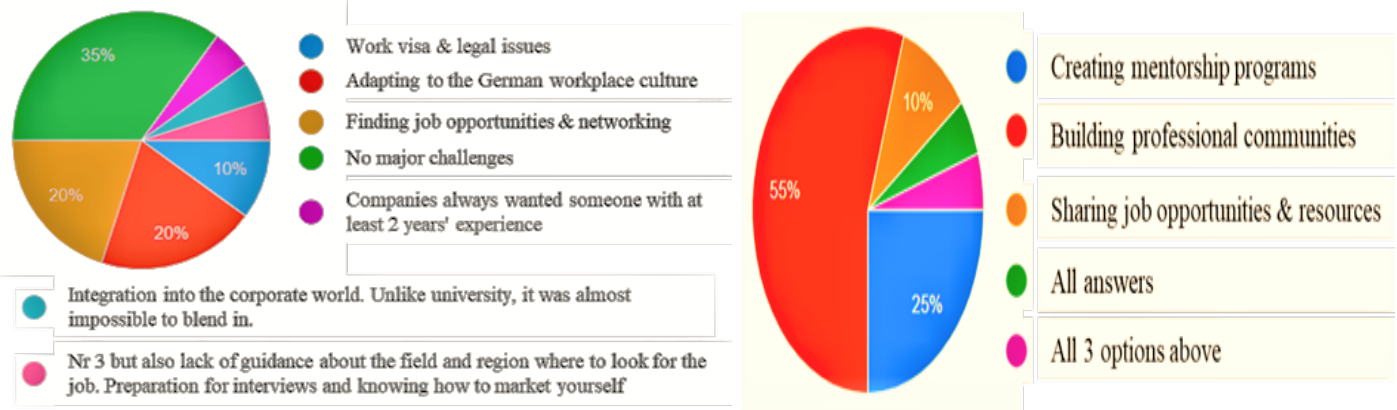


Notes

This survey was intended to be a preliminary representation of a more in-depth survey which will follow, and which will be extended to men and other nationalities. The aim is always to add value to the community, to find ways to reduce the dropout rate and increase the level of satisfaction among international students. Anyone wishing to take part in the next survey is asked to contact me on LinkedIn (<https://www.linkedin.com/in/melissatelong/>).

Figure 1: Motivation behind the selection of the field of study.

Social Dynamics & Emotions



When asked what the greatest challenges were during this period, our participants cited the following reasons (Figure 2): networking and finding job opportunities (20%), adapting to the German workplace culture (20%) and everything related to work visa and legal issues (10%). Some of the women said that companies in which they applied requested someone with at least two years' experience. The survey also revealed that not only the lack of experience in preparing for job interviews, but also the lack of guidance as to which specific sector and region to look for work in were major challenges. One of the women commented that, compared to university, it was "impossible to blend in" at work.

4. GUIDANCE FOR STUDENTS ASPIRING TO STUDY IN GERMANY

The Cameroonian women taking part in this project were asked what advice they would give to young Cameroonians considering studying in Germany. 40% of them recommend learning German before the arrival in Germany, 20% to build a strong network early and 10% to be prepared for cultural differences. Several other of these great women with more than admiring backgrounds recommend "striving for excellence", "always maintaining self-confidence", "paying the price and working hard", "staying focused", going beyond one's comfort zone and familiarizing oneself with environments and people that push one to improve. It's also important to intentionally integrate and acclimatize to the new environment, this by connecting with local and international students and taking the initiative to reach out to others, even if they don't come to you spontaneously at first. One of them outlined the importance of living one's own experiences despite the opinions and advice of others, because "God has different paths for each of us". She advises future students to "not only work hard, but also pray".

5. OUTLOOK FOR THE FUTURE

45% of respondents said that celebrating International Women's Rights Day is an opportunity for them to encourage and support other women. Asked what changes they would like to see for women in the workplace, they said: more representation in leadership roles (40%), more mentorship and networking programmes (30%), equal pay & better career opportunities (20%). Figure 3 highlights the participants answers to the survey regarding the mutual academic and professional support for Cameroonian women abroad. The desire to build professional communities (55%) and to set up mentorship programs (25%)

are at the top of the list. Followed by the idea to share job opportunities and resources inside these communities (10%). Also, the establishment of solid networks and mentorship programmes can constitute important leverages for the development and expansion of any associative group, both in terms of academic and professional support.

CONCLUSION

This document highlights the results of a preliminary survey of more than twenty Cameroonian women who have studied and completed their university courses in Germany. What emerges is that, even though studying in Germany can be an enriching experience with good job opportunities, the challenges to overcome are not insignificant. Some of the difficulties one can encounter start with the German language barrier for many, as well as the cultural and educational differences. Despite these challenges, and the fact that 65% of them have overstayed their studies compared to the time allocated by the institution in force, the general trend among interviewees remains positive about studying on German territory. 60% of them have never encountered sexual or racial discrimination. Still, 40% of the women admitted to having experienced either sexual or racial or even both discriminations. Most of those questioned (60%) were convinced that studying in Germany had made them more independent and confident. Some said it had enabled them to develop international networks and to be "emotionally stronger". 75% of participants stated that their German degree gave them a considerable professional advantage. The Cameroonian women interviewed would advise younger academicians to focus on values such as self-confidence, hard work, determination, concentration, surpassing oneself and excellence. In terms of future prospects, these handful of Cameroonian women would like to create professional communities, mentoring programmes and platforms for data and information sharing purposes that will benefit the community.

ACKNOWLEDGEMENT

I would like to express my deep gratitude to all the participants who took part in this survey. Thanks also to Dr. Ines Ngassam who contacted me for this beautiful project supported by the VKII (Association of Cameroonian Engineers and Computer Scientists) within the framework of the celebration of the International Women's Rights Day on March 8, 2025.

Figure 2: The biggest challenges when transitioning from student to full time worker.

Figure 3: Improvement suggestions for the mutual support of Cameroonian students and graduates' women in Germany.

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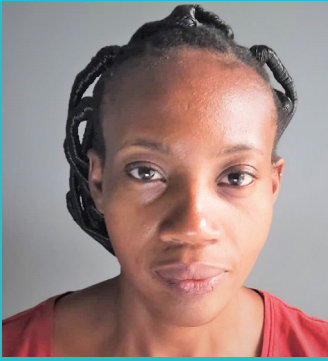
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Interview



Interview by
Ines L. NGASSAM

PhD

PROF. UPHIE CHINJE



For this special number dedicated to the International Women's Day, we had the privilege to meet Professor Uphie Chinje, a major female researcher figure in Cameroon. She has been the director of the MIPROMALO for 18 years and the Vice-Chancellor of the University of Ngaoundéré for 06 years. Professor Chinje has agreed to answer some questions for you.

Interview

Your career is very impressive and inspiring. It is not possible to talk about Cameroonian women in science without mentioning your name. The first question that can be asked is how having to decide to go for scientific studies finished with a PhD in metallurgy? What was your motivation? Did you have any role model?

Prof. Uphie Chinje : I think I will say what pushed me through was the ease with which I found the science subjects. My friends, classmates, female, always felt the sciences would be difficult. But it wasn't like that for me and a few others. So, I got into the sciences. I did for A-levels, well, physics, biology, chemistry, and maths. Then, later, I went to the University of Yaoundé. I took chemistry and ended up in organic chemistry. I mean, I would say my studies went on smoothly, that is why I could even have a "mention bien". I took my first degree that carried me through to do the "maitrise". From then on, I went out of the country to study. But what was the biggest motivation in metallurgy? Well, I will honestly say it was not a course I was very versed with. But my male lecturers (because, unfortunately, there was no female teaching me then) felt with my capacity, with my knowledge, and with the future of the country moving into materials and its independence, they felt I should be able to study metallurgy. So, they were the ones who guided me in that direction. So, if there were any models, they were not female models. Maybe they were male, they were not doing it anyway, but they felt it was the subject that I could do. So, that's what led me into doing metallurgy, and it went as far as I could go.

You are also well known because you spent almost two decades as the director of MIPROMALO, position that you left in 2017 with your appointment by the Head of State to be the new Vice-Chancellor of the University of Ngaoundéré until 2023. For each of these two positions, what do you consider as your greatest achievement?

My greatest achievement in MIPOMALO was making Cameroonians believe that they can use their own natural resources to produce materials for their use. So, that was what I felt I brought in strongly into the Nation, that fact of import substitution of instead of importing cement, we can even produce cement. It was not like limited to any specific material, but specifically that we are rich in resources. We demonstrated that through research and through the real production of some of these materials in diverse fields, including even the production of building of equipment, you know, to be able to build homes. And of course, I was very happy. Moreover, I think one of my biggest achievements is the circular, which the Prime Minister signed on the use of building materials in replacing imported materials. I think that was something big. And with that, it got into the text of materials. I mean, there is some list of materials, which we use, which is approved by the government, the Ministry of Commerce. We succeeded in putting different aspects of local materials into that MERCURIAL for us to be able to use and put our construction and local materials. For the University of Ngaoundéré, if I could remember what the key thing which the Minister of Higher Education, the message he gave me after my appointment, which, I think thanks to him, because I don't know how I was appointed. You know, I heard one day on the radio that I have been appointed as the Rector of the University of Ngaoundéré. And I think the key concern for him was entrepreneurship. I mean, he felt with what he saw me doing at MIPROMALO that universities were supposed to do, see how universities could use



Prof. UPHIE CHINJE et Ines L. NGASSAM, PhD au sortir de leur riche entretien.

their knowledge to be able to transform the things that they know, using basically their knowledge, their know-how and the resources which we have in Cameroon. So, I mean, I think one of the key things which I know are inculcated into the minds of university lecturers is, you know, entrepreneurship, getting the students to be able to produce their own things. And I know, like ENSAI, they had to, I mean, got through, grateful that we had a project funded by the French Corporation for the students to be able to do 25, I mean, they were chosen 25 patents. Of course, the university funded 10 more of these patents. And these patents were supposed to transform their, I mean, to be able to carry their knowledge right through to production. Another big project that we put in place, which was greatly appreciated by the Minister in charge of the economy, is the University of Ngaoundéré Industrial Pool.

What was this project all about? It was to be able to use the competencies of all the 10 schools in the University of Ngaoundéré for us to be able to produce our own things. And this project was to start with the land which we had, I mean, the University of Ngaoundéré sits on 1,400 square metres of land. We had to plant, while planting, whatever you needed. If it's the roads to go there, then the school in charge of building roads, that is civil engineering, was supposed to build the roads. If you needed equipment, the structures that have been producing equipment were supposed to produce equipment. If you needed electricity, the structures that have been working on solar energy or renewable energy or whatever energy had to do that.

In effect, this project was supposed to transform the university. Instead of us having research laboratory, we now had to have that industrial laboratory. So, it was transforming knowledge into industrial laboratory, which meant it was this other aspect of industrialization, which for example, by the time I left the University of Ngaoundéré, the text of the university had now been transformed into an entrepreneurial university, which means universities should be able to do their own things. And I so far see that not fully being implemented, but that is how it's supposed to be. And with this, it's supposed to be in great partnership with the civil society. On that project, we had already had some municipalities that were really offering over 200 hectares of land for that project to be implemented by the university students.

And with that, you create jobs, you give them possibility of understanding how to move into the society and these projects will eventually be replicated at large scale. So, I think that was one of the strong things which I left from the University of Ngaoundéré.

Interview

Interview PROF. UPHIE CHINJE

This interview is made in the framework of the International Women's Day (IWD) that will be held as every year on the 8th of March. What is the significance of this day for you?

It's a day we all know for women to reflect on their achievements. For the governments, those who lead the women, the non-governmental institutions, the international donors and whatever, it's for them to reflect on the position of women. I think one of the best International Women's Day that I participated in was in Tanzania in 2005. There, you had all the international organizations, the World Bank, the president of that country, all major institutions, and the banks. All came out to be able to evaluate and to make promises of what they will do to improve the life of women. So, to me, International Women's Day is not a day just to celebrate, it's a day of reflection and I'm happy that in Cameroon at least they give not one day but a week for diverse reflection, for women to be able to share whatever they have with their peers. I mean discussions, I see gifts being given to, I mean there's a lot of philanthropy within that period, you know, which I mean it always makes it, you know, see what the woman would look as a woman.

reflection and this is sort of a theme where they should be able to be dealing with figures. I know the talk of Beijing say 30% but we should go beyond that. If women contribute 50-51% of the population, then their contribution should be 50-51%. Hence, quite often I tell my women folk that "you cannot abandon certain disciplines. If you abandon certain disciplines, then it means you're getting the male to dominate."

So, the women must pull themselves out, they must see that they too can be in every aspect. We have seen the best female leaders in the world as presidents, as prime ministers, as queens and whatever, you know, and they have done very, very well. So, it's for the women too to be able to know that their participation must be total. We must contribute given the talents and I am convinced God has given talents to every woman as He has given to every man, to every girl as He has given to boys. So, we, even the women, we must encourage our girl children to be open up. For sure, we know we have sex differences but that does not permit us not to be able to evolve equally in the society.

So, I think it's a time to encourage women to go into politics. For example, if you go to a newsstand, you hardly see female girls standing there. So how do they know about what is happening? How do you know about current events? How do you know about who is where and whatever is happening? So we have to be in diverse aspects in the sciences as well as in the non-scientific disciplines to be able to make our presence felt. And of course, politically to lead because we are not a leader, you will not be able to move things in your own direction. So the accelerating action as the theme for this year, you know, should actually make us reflect and reflect better.

What always comes out, as challenge is the fact that women are expected to be a good wife and good mum while following a great professional carrier. What is point view regarding this? How have you managed to find a balance between these three tasks?

Well, I am one of those who feel that the male should be able to contribute as well as the woman. I don't want, I don't like a home where you say "oh, the task of a woman". Yes, for sure, if the child is to take breast milk, it's only the woman that can give the breast milk. But the culture of the house, the male and the female, the husband and the wife should be able to help. For instance, my daughter is married. Each time I go there, I mean, I appreciate my son-in-law; he would be the one taking care of the child. He would be the one to make sure he feeds the child. Both are involved. That is where that balance should start.



Prof. UPHIE CHINJE with women in Ngaoundéré

The theme of the IWD 'Accelerate Action' with a focus on speeding up women's equality. Over your years of activity, have you experienced some challenges due to your gender? Maybe you have some stories?

It is a very good theme, a theme for



Interview

Prof. UPHIE CHINJE during a Board Meeting at the University of Ngaoundéré

And we women should be able to educate a boy child that there is no attribution that is only for women. We need to do that contribution to be able to bring the home or bring the future of a girl child to what we want. So, we must avoid that aspect. I mean, if a child is sick, the husband can take the child to hospital as well as the girl. And I'm very happy. Recently, I was in Canada and my son was telling me how there are some days where the man is, because there was a day, I think I saw almost all the baby trolley being pushed by male. When I said, oh, I think Wednesday or whatever day was largely for the men. We should move towards such balance where there's no housework or no upbringing that is devoted only to women. It should be both. Moreover, we should bring up a boy's child to understand that that is how it is supposed to be.

Now, in Cameroonian context, what is the situation of women? Especially the access to study or career in STEMs fields?

Well, the good thing in Cameroon is there is no school that is reserved especially just for women or for men. Most schools are coeducational. For sure, we might have some unisex schools, but access to education is the same. Therefore, the opportunities are the same. That is why our call on the girl child to understand that the gift, you should watch out with the gift that you've been given. We are not saying girls should force themselves into the

science, technology, engineering, mathematics disciplines. No, but we come into this world with natural gifts. Quite often, maybe it is more tilt to encourage us in a certain discipline. So, for all the girls who are good in any of these sciences, it should be encouraged. And I'm very happy because I have seen so many structures trying to encourage the girl child in the STEM. Just recently, I had to, I had to do a short video to encourage this program by the university women to encourage young girls in the STEM disciplines. So, they should be able to carry it on and not only move when you say science, engineering, and they go to the medical field or to the nursery or whatever.

I did engineering, metallurgy, I did the sciences, I was good in maths, I was good in chemistry, and that gave me the possibility to move on. I think the girl children, you know, should be encouraged if they have the talents. And I remember I told you that, I was even encouraged by my lecturers who were essentially male.

So let us be able to develop our talents, let us be free to be able to develop our talents. And in Cameroon, it's coming up, you know, we have more and more girls in ICT, more and more in, I mean, in many of the science, technology, and engineering disciplines, we should be encouraged. I know the percentage for some of the engineering schools are still very low, but it's us parents that should be able to push them up.

Interview PROF. UPHIE CHINJE



Prof. UPHIE CHINJE
at the Lamidat of Ngaoundéré,
invited by the Lamido

What is your view on the gender equity/equality in general and specifically in Cameroon?

Well, we still have a long way to go for gender equality. But as I said, we, the women, we must, we have to push, we have to make sure we are seen, we have to make sure the talents that we have are expressed. We should be able to communicate, we should be able to come out, you should be able to, I mean, in your class, take up your hand, answer the questions, challenge it, if you're doing your master's or your PhD or whatever, you should be able to convince the lecturers that you are capable of doing it. You know, the equality, we should not fold our arms and equality will come.

Of course, we know the politicians, the government is more tilted, I mean, positions are more in favour of men, it's improving gradually. If you go to a parliament, it is moving up to over 30%, the Senate is about 20%, ministers

maybe 10%. I mean, the government needs to encourage that as well.

Apart from that, we, the women, we, the young girls, we, the mothers, we must encourage a girl child, we have to give them the possibility at home to look equal. If you are giving the attribution X to, even if it is washing of dishes, to the girl child, the boy child should have his own days for doing that. With that, at that level, we are educating them co-educationally, and they will grow up and tomorrow, the boy child will be able to respect and carry on more of the attributions, which will gradually give the quality we are aspiring for.

Can you give some advice to women, especially the young ones?

Yes, that is just what I was saying; young women, we are the mothers, we bring up the children, let us educate our young children, as they are young. Let the boy child and the girl child see themselves as equal, for sure their sexes are different, but they should see the attributions that they are doing to be the same. Do not start discrediting, or giving more attributions to the girl child, or say, no, the girl child, you wash the dishes while the boy child go out to play football, or vice versa, no discrimination at that level. Treat them as equals based on their age, and we will see that they will evolve. And the Cameroon of tomorrow will be a better Cameroon where the girl's position will be much felt, and the equality we are aspiring will be there, which will give more opportunities to the girls, and prevent them from going to the wayward side of prostitution, and many other things which they do. Therefore, I think the lot depends on us, the women.

We cannot finish this interview to present you our best wishes for this year 2025. What is your expectation for this year?

This is 2025, and especially in Cameroon, it is a year of a lot of hope, of changes, you know, it is a year where we are going to have big political consultations, and whatever, for a better future. We pray that the country moves forward, like every other country. The world is in some dynamism, we should be able to use the new tools, ICT, artificial intelligence, machine knowledge. Things are changing, and we, even the leaders, we, the teachers, should be able to accompany the Nation, accompany the girls, to a prosperous future for a structurally transformed Africa skilled to be used by us. We should develop skills that we should use to be able to develop the Africa we want to see.

Thank you, Prof., for the time you took to answer our questions.



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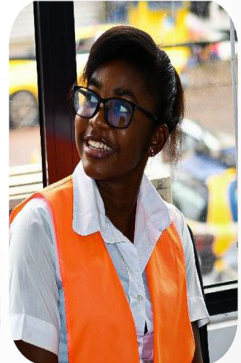
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