



# Nigerian Chemical & Engineering Industry MAGAZINE

A Four-Monthly Publication of Nigerian Society of Chemical Engineers  
(A Division Of Nigerian Society Of Engineers)

November 2021 - February 2022 | Vol. 4 No. 2 Edition



Global  
Perspective  
On Youth  
Productivity

Dr. Jean B. Bakole  
UNIDO Rep to ECOWAS & Regional Director in Nigeria



NSChE 50<sup>TH</sup> Anniversary

Productive  
Engagement Options  
for the Youth In  
Nigeria



Pst. Ituah Ighodalo  
Trinity House Church, Lagos

# YOUTH CONUNDRUM

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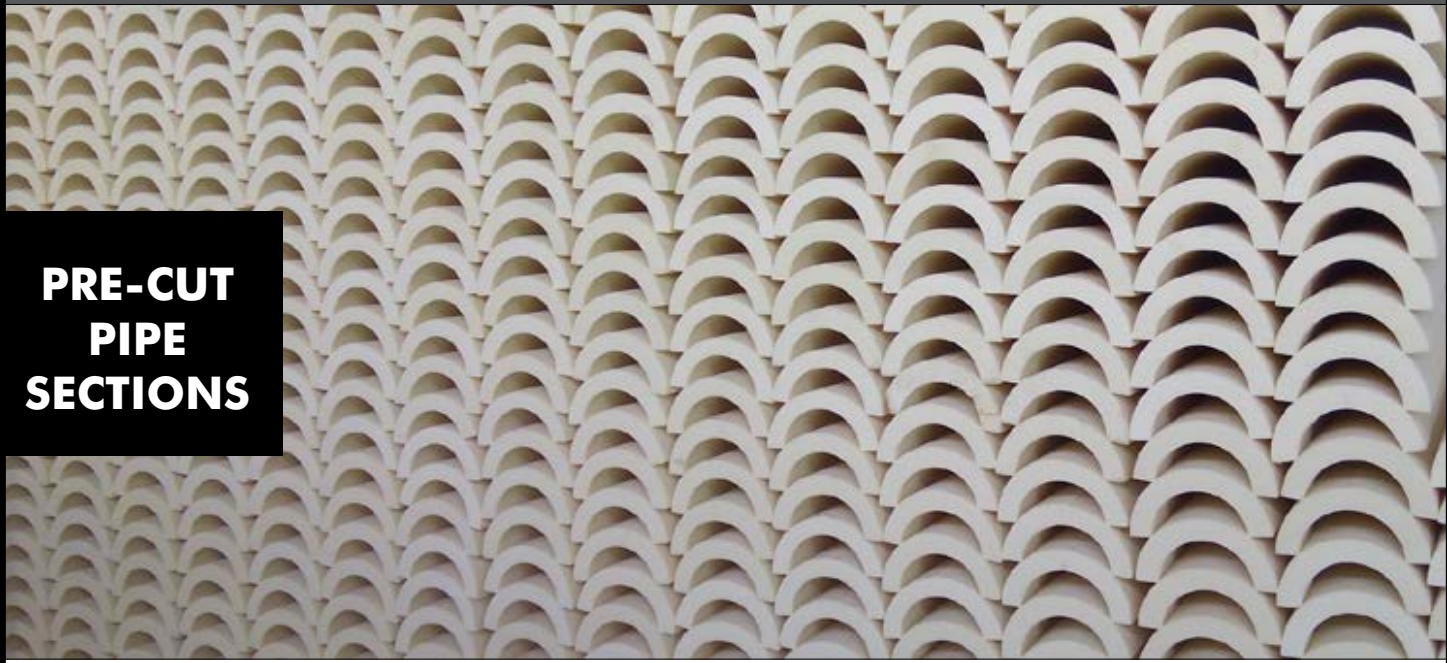
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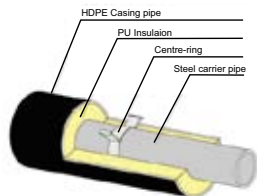
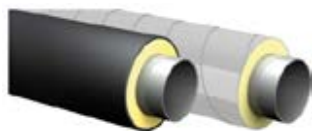


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## NSChE VISION



“To be the Center of excellence for the Chemical Engineering Profession in Africa and the Prime Mover of Industrialization in Nigeria”.



## NSChE MISSION



“To organize the Nigerian Society of Chemical Engineers into a virile professional body capable of promoting the relevance and versatility of the profession, achieving better training and updating of Chemical Engineers through its activities. Fostering of relationships with the academia, research institutes, industries, other professional bodies and government will be the basis for stimulating accelerated industrialization of the country and improving the quality of life of the Nigerian people”.

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The views and opinions expressed in this Magazine do not necessarily reflect those of NSChE.

“Nigerian Chemical and Engineering Industry” Magazine is produced  
 three times a year by SENDINA LIMITED for  
 Nigerian Society of Chemical Engineers.

Producer's Office: Sendina Limited: Plot 22b, Kola Olosan Street, Ofada (Via Mowe), Ogun State,  
 Nigeria. Tel: +234(0)7060545011, 09065913181, 09055181454 Email: sendina7x@gmail.com



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FROM THE

# Editorial SUITE



**L**ife moves on, so is our magazine. This edition has a lot of exciting and educative contents. We urge our readers to pay particular attention to what experts share about youth productivity and by extension the productive engagement of youths. The enormous potential energy of Nigerian youths has to translate to useful kinetic energy in the right direction with conspicuous positive manifestations in the economy. The youths need

elders' support and that time is now. More specific statement on the matter is on the way as you read on.

The Executive Secretary of NSChE, Engr. Samuel Bosoro provides an update on the Society's Secretariat Building Project. Fellows and members' contributions are well appreciated and more contributions are still expected till the project is fully executed and commissioned. The Society's Management deeply appreciates the contributors to this laudable project. It is also of interest for readers to note that NSChE has a sense of fulfillment as a professional body of top ranking having won the first prize in the Nigerian Society of Engineers dynamics competition for the 5th consecutive time in 2021. This is shown in memorable pictures in this edition.

At this juncture, there is need to elaborate on the issue of youths as presented in this edition. In specific terms, youth conundrum in this era has been given some answers in the presentation on "Global Perspective on Youth Productivity" by Dr. Jean B. Bakole, UNIDO Representative to ECOWAS and Regional Director, Nigeria Regional Office. Additional answers on the same subject were given in a paper entitled "Productive Engagement Options for the Youth in Nigeria" by Pastor Ituah Ighodalo, Senior Pastor, Trinity House Church, Lagos. Both presentations



**Engr. Donatus Uweh, MNSChE**  
*(Editor-in-Chief)*

rekindle the hope of a bright future for youths in Nigeria in particular and the world at large. These presentations were made at NSChE's 29th Fellows Conference held at Sheraton Hotel & Towers, Ikeja, Lagos on October 7, 2021. Memorable pictures taken at the event are shown in this edition.

Nigerian Society of Chemical Engineers has come a long way as a professional body. Clocking 50 years is no mean feat. In this

edition, we serve our readers the list of the National Presidents who provided leadership for the Society for the past 50 years as well as their pictures for record. The Gala night pictures to mark the 50th year anniversary are also shown in this edition. To God be the glory. For the record, it should be noted that the 50th Anniversary which was meant to be held in 2020 was actually held in 2021 due to circumstances imposed by COVID-19 pandemic.

The Society's 51st Annual Conference/AGM was held from 10th to 15th November 2021 at the Federal Palace Hotel, Victoria Island, Lagos on the theme, "Chemical Engineering and the Changing World". Our readers are served with a record of the communique issued at the end of the event as well as the pictures taken at the occasion.

To our esteemed readers, we assure you of valuable and exciting information in future editions of our widely distributed magazine. To our sponsors and contributors, we say a **BIG 'THANK YOU'**.

*Enjoy your reading.*

**Engr. Donatus Uweh,**  
*Editor-in-Chief*

# COMPLETION OF THE NATIONAL SECRETARIAT BUILDING, TIME FOR ACTION IS NOW!

Dear Fellows and Members of our Great Society,

We have tried severally in the recent past to raise funds through special levies, pledged donations etc to execute the National Secretariat Building project but the total amount generated as at date was just sufficient to complete partial fencing, gate house and foundation of the building which was achieved in February 2021.

As at the time that the fund raising started in 2016, the projected cost of the bungalow which was envisioned then was N75m only. However, when the Societal housing need assessment was later done, it was discovered that it will more prudent to build a single storey duplex to accommodate the National Secretariat and all the Subsidiaries. This idea was recommended to Council and it was adopted.

As you are aware, the cost of building materials continues to escalate and we have no control over these price increases but we can take the bull by the horns through our commitment to complete the building now and this is what we are aspiring to do. The current projected cost of completion of the building has escalated to over Two hundred and fifty Million Naira (N250M) and there is no guarantee that it will not increase further if we do not take action now. It is for this reason that the Council at its meeting of 10th July, 2021 approved a two-phase fund raising strategy to initially raise funds from members to raise the building to an appreciable level.

Thereafter, we could then approach Corporate organisations for support to complete the project within a year. We are hoping that with



**Engr. Samuel O. Bosoro, MNSChE**  
(Executive Secretary, NSChE)

your generous donations in cash and kind and by the Grace of God, the building will be completed this year.

In this regard, we passionately plead with Fellows and Members to kindly donate generously towards the completion of the building as follows:

<b>Platinum Donors</b>	<b>N5M – above</b>
<b>Diamond Donors</b>	<b>N2.50 – 4.99M</b>
<b>Gold Donors</b>	<b>N2.00 – 2.49M</b>
<b>Silver Donors</b>	<b>N1.50 – 1.99M</b>
<b>Bronze Donors</b>	<b>N1.00 – 1.49M</b>
<b>Other Donors</b>	<b>Below N1.00M</b>

Kindly complete the attached form to signify your preferred choice and the period of redemption which we also plead should start now and completed within this year as projected. The completed form should be sent back to the National Secretariat through any of the following email address: nsche\_headquarters@yahoo.com, nscheoffice@gmail.com


*You may please pay into the account using form below.*

There is no doubt that this building when completed will be a worthy asset for the Society and a legacy worth bequeathing to the next generation of Chemical Engineers.

Please arise and be counted as one of the compatriots that made it happen.

**Thank you and God Bless**

**Engr. Samuel O. Bosoro, MNSChE**  
(Executive Secretary, NSChE)

 <b>PLEGDED DONATION FORM FOR THE NATIONAL SECRETARIAT BUILDING</b>	
I.....hereby pledge the sum of N.....	
as donation towards completion of the National Secretariat Building Project.	
I shall redeem the pledged amount as follows:	
OPTION 1A -	Make Direct Transfer in full to the Society's Account on.....
OPTION 1B -	Pay in full by Cheque on.....
OPTION 2A -	Pay by installment via Direct Transfer to the Society's Account on the following dates:
OPTION 2B -	Pay by installment using Post-dated Cheques as follows:
<p style="text-align: center;">All payments shall be made into account detailed below and tagged "DONATION TO NATIONAL SECRETARIAT BUILDING PROJECT"</p> <p style="text-align: center;">All payments should clearly identify the donor for record and recognition purposes. May God deeply replenish the sources of the donations.</p>	
<p style="text-align: center;">Name: Nigerian Society of Chemical Engineers Bank: Zenith Bank A/C No: 1011379642</p>	



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# Celebration of Victory by **NIGERIAN SOCIETY OF CHEMICAL ENGINEERS** as Winner of **2021 NSE Group Dynamics COMPETITION** for the **FIFTH** Consecutive time



*The Executive Secretary, Samuel Bosoro and the National President, Engr. Saidu Mohammed, awaiting presentation of awards*



*The National President, Engr Saidu Mohammed, displaying the plaque. To his immediate right is Engr Mrs Margaret Oguntala*



*The National President, Engr Saidu Mohammed and the NSE President, Engr. Babagana Mohammed displaying the trophy while other chemical engineers celebrate*



*The National President, Engr Saidu Mohammed, displaying the N1.0 Million promissory note. To his immediate left and right are the NSE President, Engr Babagana Mohammed and Engr. (Mrs.) Margaret Oguntala respectively while other chemical engineers celebrate.*



*Celebration of victory by chemical engineers having won the 2021 edition of the NSE Group Dynamics Competition for the fifth consecutive time*



# GLOBAL PERSPECTIVE ON YOUTH PRODUCTIVITY

PRESENTATION BY THE UNIDO REGIONAL DIRECTOR AT THE NIGERIAN SOCIETY OF CHEMICAL ENGINEERS FELLOWS' CONFAB HELD AT SHERATON HOTEL AND TOWERS, IKEJA ON OCTOBER 7, 2021.



**Dr. Jean B. Bakole**  
UNIDO Rep to ECOWAS &  
Regional Director, Nigeria

## PROTOCOLS

I want use this opportunity to thank the Nigeria Society of Chemical Engineers for inviting me to its Fellows' Confab. Your Excellencies, ladies and gentlemen, it is my great pleasure to present the topic on "Global Perspective on Youth Productivity" during this auspicious event. The presentation will focus on situational analysis of youth productivity, the global perspective on youth productivity, and UNIDO's approach on promoting youth productivity.

## 1.0 CURRENT SITUATION ON YOUTH POPULATION AND PRODUCTIVITY

According to UNFPA there are approximately 1.3 billion young people (ages 15-24) in the world today, that is more about 18% of the world's population. In Africa, youth are considered to be persons between the ages of 15 and 35. In Nigeria, they are defined as within the ages of 18 to 35. For some school of thoughts, it is defined as the state of mind or mind set of an individual. In general, it is seen as the period between childhood and adulthood. For the sake of this presentation, data provided majorly refers to ages 15-24. However, the challenges and solutions suggested is relevant for young people within the ages of 18-35. This period is characterised by physical strength, changes in physical, social and emotional make-up as well as resourcefulness, to mention but a few.

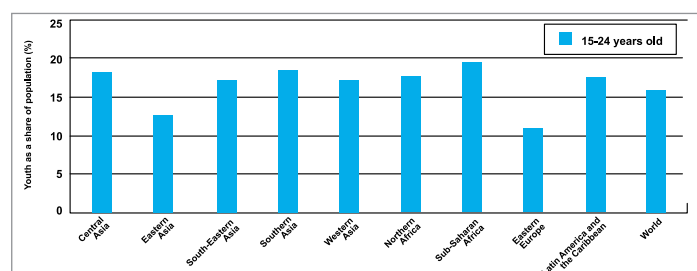


Fig. 1: Share of youth population by region, 2015

It is quite important to highlight that according to projection made in World Youth Report 2017, by 2080 Africa will have the largest number of youths in the world, thereby surpassing Asia (Fig. 1).

### 1.1 WHAT IS PRODUCTIVITY?

Generally, productivity is the amount of output per unit of input such as labour, equipment and capital. It is also defined as efficient use of resources (labour, capital, land materials, energy and information) in the production of various goods and services. In other words, it is the efficient and effective utilisation of goods and services to produce wealth and value. It is however important to note that labour productivity is not productivity-increase in input does not necessary translate to productivity. Thus, productivity involves quality input, process and output.

Youth productivity can thus be defined as efficient, effective and qualitative engagement of youth and all resources available (education-human capital, skills, energy, ideas) to spur structural transformation, contribute to economic growth, social and economic development. Notably, youth empowerment and productivity are important input in development matrix because growth through innovation and factor efficiency is largely a function of human capital development.

Youths' productivity can also be measured in terms of their contribution to the gross domestic product (GDP). That is the ratio of the GDP and the number of youths employed. A youth is considered to be productive if she/he is capable of working within the laws of his/her country and provides her/his basic needs, pays tax and saves towards his/her retirement. The big question to keep in mind is: how do we harness the demographic dividend (and for some countries the youth bulge) for productivity?

## 1.2 FACTORS UNDERMINING YOUTH PRODUCTIVITY

### 1.2.1 Education

Global efforts towards universal education have led to increase in primary school enrolment and demand for secondary schooling. However, secondary and tertiary enrolment remains low in many developing countries, especially in sub-Saharan Africa and Southern Asia. Inadequate infrastructure, lack of opportunities, affordability and accessibility concerns characterize many educational systems in these regions.

More so, when education is seen from Tomaševski's right-based approach such that it is available (free, with adequate resources, infrastructure, and trained teachers to support its delivery), accessible (regardless of economic status, gender or disability), acceptable (safe, relevant, of good quality) and adaptable (to societal needs) then education is far from being qualitative.

### 1.2.2 Employment

ILO estimate indicates that there are 74 million unemployed young men and women in the world. Globally youth unemployment rate is 13.6%. However, there are considerable regional variations, from under 9% in Northern America and sub-Saharan Africa to 30% in Northern Africa. Unemployment is more prevalent among young women in most subregions. It is critical to underscore that youth unemployment rate is three times higher than adult unemployment rate in spite of improvement in education in the last few years. Particularly, in Africa middle-income countries, the ratio of youth-to adult unemployment is often higher

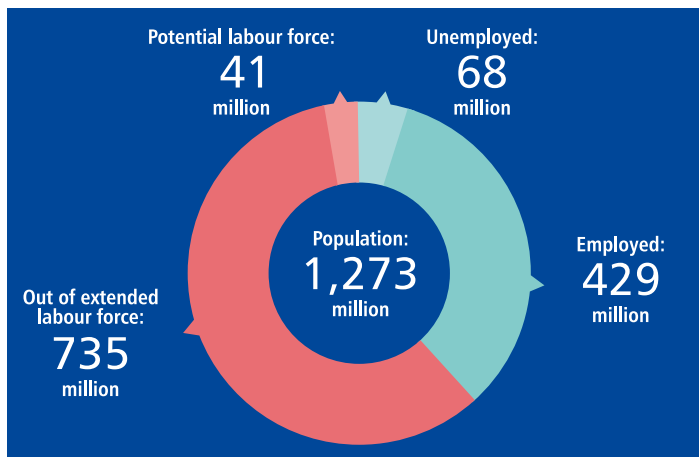


Fig. 2: Global Situation of Employment

than in other parts of the world. Globally, one-fifth of young people currently have NEET status, which means they are neither gaining experience in the labour market, nor receiving an income from work, nor enhancing their education and skills. Clearly, their full potential is not being realized, though many may be contributing to the economy through unpaid work, which is particularly true of young women. All these forms of labour under-utilization in the early stages of a young person's career can lead to a number of scarring effects, including lower employment and earnings prospects decades later.

The vicious circle of poverty, unemployment and low productivity can be broken by increasing productivity. To increase national productivity there has to be optimal use of resources in order to create a better balance between economic, social and political structures in the society. To achieve youth productivity, there has to be an enabling environment for their skills to mature and thrive, create jobs, improve on-job skills and learning within organization as well as match supply with current demand for skills.

Youths are the future of the country not just because they are young but because of the vigour, curiosity, passion, creativity, innovation, and exploration that comes with the youthful age. Thus, it is generally agreed that they have what it takes to promote the productivity of the country, if properly harnessed.

Having seen some of the challenges the youth face, it is clear that youth qualitative education, employment/empowerment are germane in addressing the issue of productivity. In essence, there can be no productivity among the youth without adequate investment in education (human capital development) and empowerment.

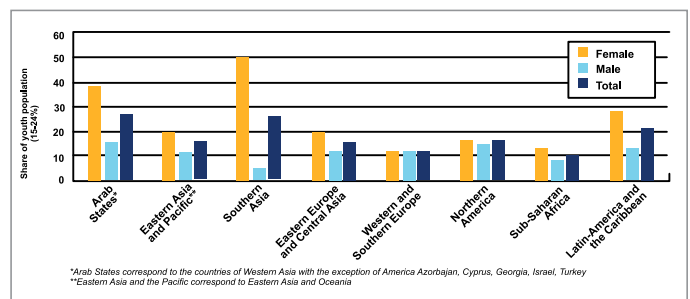


Fig 3: NEET Rate by Region and Sex

Region	Subregion	LFPR 1999			LFPR 2019			Gender gap (male-female).pp	
		Total	Male	Female	Total	Male	Female	1999	2019
World		51.3	62.2	43.7	41.2	49.1	32.8	18.5	16.2
Africa	Northern Africa	35.4	50.5	19.8	27.5	38.2	16.3	30.6	21.9
	Sub-Saharan Africa	53.3	55.6	51.0	48.2	30.5	46.0	4.6	4.5
Americas	Latin America and the Caribbean	54.3	66.7	41.9	48.9	57.9	39.6	24.8	18.3
	Northern America	62.7	65.1	60.3	52.6	53.0	52.1	4.8	0.9
Arab States	Arab States	33.6	53.3	12.8	27.7	45.6	8.3	40.5	37.3
Asia & Pacific	Eastern Asia	67.0	67.3	66.6	45.2	46.5	43.8	0.7	2.7
	South-Eastern Asia and the Pacific	57.6	64.7	50.4	47.4	54.5	39.9	14.3	14.6
	Southern Asia	44.9	65.0	23.1	31.6	47.4	14.2	41.9	33.2
Europe and Central Asia	Northern, Southern and Western Europe	47.9	51.6	44.1	43.8	46.1	41.4	7.5	4.7
	Eastern Europe	41.9	45.9	37.7	32.2	35.9	28.3	8.2	7.3
	Central & Western Asia	46.4	56.2	36.4	43.0	52.6	33.0	19.8	19.7

Table 1: Globally, labour force participation rate among the youth declined by 12% between 1999 and 2019

Table 1 indicates that the situation of employment is dire and this affects the productivity of the youth. More so, the kind of jobs that they are able to access – and the point in time at which they enter the labour market – influences not just their individual career and earning prospects but also the development trajectories of their countries.

## 2.0 GLOBAL PERSPECTIVE ON YOUTH PRODUCTIVITY

In 2004, the members of the African Union gathered in Ouagadougou to discuss the crucial challenges of employment and poverty alleviation in Africa and committed “to empower the poor and the vulnerable, particularly in rural communities and

the urban informal economy, the unemployed and the underemployed by enhancing their capacities through education, skills and vocational training and retraining of labour force, access to financial resources, on particular micro financing, land infrastructure, markets, technology and services in order to meaningfully integrate them into the labour market.”

Young people represent a critical resource that can foster future economic development and structural transformation. An economy’s future structure is determined by today’s investment in human capital and new skills. Skills development is critical for labour market competitiveness in today’s world of work. Obviously, there is a need to maintain a dynamic relationship between education and employment.

Youth employment and economic empowerment are critical foundation for any society. It not only leads to engagement of youth but it has a ripple effect on the communities, countries and the world at large. In all of these, it is important that the youth mobility, equality and dignity in the work place is not relegated to the background. Decent work, employment creation, social protection, rights at work and social dialogue represent integral elements of Sustainable Development Goal, which acknowledges the inherent connection between decent labour market conditions and dignified livelihoods. Work is the foundation on which economic stability and prosperity are built. Putting the skills and talents of young people to productive use contributes to economic prosperity for entire populations and helps to reduce economic inequality and eliminate poverty.

## 2.1 APPROACHES TO IMPROVE

-- Case study: Singapore --

*Under the Skills Future programme, a credit fund has been available since January 2016 to all citizens of Singapore once they reach the age of 25; it provides financial support to help cover the fees of skill-related courses. The scope of the programme has recently been expanded to include various services for students and early- and mid-career employees. A one-stop online portal, MySkillsFuture, provides education, training and career guidance and can be used by pupils at secondary schools and students to gain a clearer idea of their interests, abilities and career ambitions.*

## YOUTH PRODUCTIVITY (EDUCATION, EMPLOYMENT/ EMPOWERMENT):

### 2.1.1 Private sector development and cooperation

Globally, 9 out of 10 jobs are created by the private sector. It is a primary driver of employment creation and economic growth. It is therefore important to invest in a growth-oriented private sector, its supporting business structures, the civil society and ultimately in young women and men, who often drive society’s socio-economic development and innovation.

Durable jobs can be created by developing the private sector and concentrating on the informal and rural sectors, as they have probably the biggest absorption capacities. In doing this, governments will have to identify sectors in which the country has a comparative advantage in global markets or enough domestic consumption and that are able to create sustainable and decent jobs and identify and address gaps and barriers that hinder the specific sector from developing and growing. Agricultural processing and manufacturing are examples of high growth and job creation sectors in Africa.

In addition, cooperation with private sector helps to identify in-demand skills for which educational institutions and employment agency can consider in designing curriculum and providing career support and counselling. In developed countries, public employment services have direct access to employment information and the type of skill sets required and this informs them of existing gaps and jobs in-demand. They can in-turn provide the right career counselling to youth/young people.

### 2.1.3 Entrepreneurship

The development of micro, small and medium enterprises (MSMEs) is a proven and effective mechanism to facilitate economic development and it is within this vital sector that entrepreneurship requires significant support, guidance and investment. These enterprises are crucial to support a bottom -up approach to economic development.

The necessity entrepreneur is self-employment as a result of economic situation and this make up for the large proportion of the informal

sector). There are also opportunity entrepreneurs which are those positioned to take advantage of economic opportunities and push forward frontiers in more dynamic business development. Some school of thoughts such as Schumpeterian vision of economic development, think that the former is not beneficial for economic development. However, both are important but the context should be properly understood when designing programmes for youth. Entrepreneurship and self-employment are therefore a viable alternative for young people when given the right skills and provided with adequate support to establish and develop their own micro or small enterprises. Youth entrepreneurship does not only create employment opportunities for self-employed youth but also for the other young people who they may employ.

Fostering entrepreneurship and developing microenterprises is critical to expanding employment and earning opportunities and to reduce poverty. This has to be done in consideration of sound macro-economic conditions, favourable business environment and policies that can enhance productivity. In doing these, barriers to entrepreneurship such as access to finance, inadequate financial literacy skills, access to stable electricity must be addressed. The right environment and incentives must be also be put in place to facilitate formalisation.

Programmes to support youth must be comprehensive. To start a business, young people do not only need capital, knowledge on how to run a company is also required. Entrepreneurship training provides young people with the skills they need to create and manage a sustainable business that will likely generate jobs. Mentoring and business incubators can be valuable tools to convey these skills. To be efficient, training has to mix technical skills, such as written and oral communication; technical management and organizing skills; business management skills, such as planning, decision making, marketing and accounting; and personal entrepreneurial skills such as self-discipline, risk taking and innovation<sup>10</sup>.

**2.1.4 Investing in Youth Digital/21st Century Skill**

In March 2021, the BBC news featured an article that indicated the number of young people taking Information Technology subjects at General

Certificate of Secondary Education dropped by 40% since 2015 in the United Kingdom. Meanwhile, in the same country, a report by Accenture showed that demand for Artificial Intelligence, cloud and robotics skills is soaring.

The reality is that the impact of the pandemic has accelerated the demand for digital skills. Businesses that thrived (that adapted and were agile) were those that leveraged digital technology.

A study by WB and IFC which considered demand for digital skills in sub-Saharan Africa countries shows that of all the 5 countries surveyed (Cote d'ivoire, Kenya, Nigeria, Mozambique & Rwanda), 57 million jobs will require digital skills by 2030. More interestingly is the fact that only 2 million of these jobs will be in the Information Communication and Technology (ICT) and e-commerce sector (which are currently considered to be main drivers for the demand in digital skills). This underscores the enormous task ahead in skilling, re-skilling and upskilling of today's youth.

ICT skills are crucial for youths to be able to access

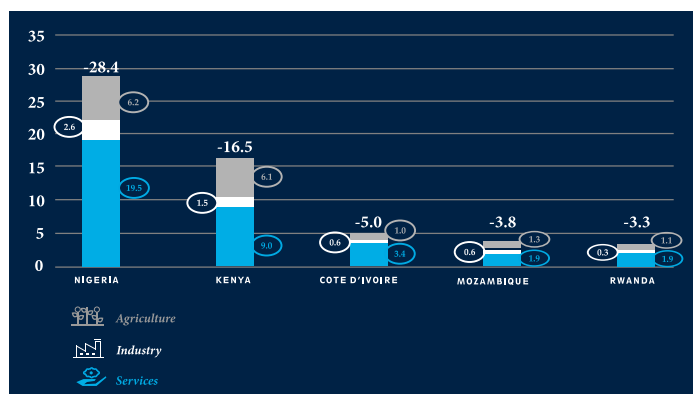


Fig. 4: Demand for jobs (in millions) requiring digital skills by country and sector by 2030 (forecasted)  
 Source: Demand for digital skills in Sub-Saharan Africa, WB, IFC 2021 report

21st century job. Modernization of vocational training is essential for youth to meet the demand of digital economy; this is because most jobs that require vocational training are at the risk of being automated.

In a study<sup>11</sup> of 17 countries (14 European countries, Australia, the Republic of Korea and the United States) from 1993-2007, it was found that although there was no significant relationship between increased















	Foundational Digital Skills		Intermediate Non-ICT Skills		Intermediate ICT Skills		Advanced & highly Specialized Skills	
Sector	Task Types	Examples	Task Types	Examples	Task Types	Examples	Task Types	Examples
 Agriculture	 *Web Research *Mobile Communication	*Farmers using government websites to check crop prices *Farmers using WhatsApp to exchange photos and other informative videos *Farmers using video calls to consult with a veterinarian	 * Use of simple spreadsheets for accounting	* Managers in agricultural businesses using financial software to track income and expenses	n/a	n/a	 *Use of big data analytics * Development of specialized automated equipment	* Data analysts in agricultural companies leveraging big data to analyze yield, chemicals and biomass index for future predictions  * Engineers developing robots to pick fruit
 Industry	 * Online Communication * E-learning	* Workers sharing photos of their work with managers to update them on progress * Workers watching tutorials/videos on how to operate new machinery	 * Use of professional software for business purposes	* White collar workers using software for project management, making presentations and spreadsheets	 *Interaction with robotics equipment	*Engineers using modeling software like AutoCAD	 *Computer programming * Network management * Automation * Digital manufacturing	* Specialists using advanced robotic equipment in manufacturing plants * Engineers running computer simulations for understanding physical process
 Services	 * Web research * Online communication * Online government services * E-banking	* Executives exchanging emails * Small businesses accessing online banking or government tax portals  * Drivers using mobile apps to connect with passengers and reading online maps	 * Use of professional software for business purposes * Digital marketing	* Tourism operators using digital marketing to reach a larger base of clients * Professionals using software to develop analysis and make presentation	 * Use of professional software (coding) * Use of design software	* Small business owners designing websites (frontend/backend) to attract business	 * Computer programming * Cloud computing * Machine learning and AI	* Animators using specialized software to make films *Programmers developing social media sites * Developers using AI to power language learning apps

Table 2: Examples of In-demand digital skills in different sectors

use of industrial robots and total employment levels, there was evidence that robots might be reducing the employment share of low-skilled workers. Thus, it is important to equip youth with the skills required to cope with the various transitions they will experience in the course of their lives to ensure that they have a brighter future at work. According to a survey conducted by ILO12, wider skill sets is required for entry-level jobs (which are mostly filled by youth). Advancement in technology and industrial development offers an opportunity for youth to invest in continuous skill development. The kind of skill required include targeted vocational training programme that provide youth with life skills such as effective communication, negotiation, decision-making and problem solving, leadership, personal finance management and critical thinking.

This underscores the role stakeholders need to play to address the skill demand and supply gap. Institutions of higher learning need to partner with private sector and providers holding content expertise (such as Microsoft, Facebook etc). Academia would have to

adopt these technologies themselves and use it to deliver contents and upskill students.

### 2.1.5 Policy instruments and youth involvement in social dialogue

To create productive jobs for youth, it is important to design and execute appropriate policies to assist young people transition during their careers. This includes school-to-work transition, improved education and counselling regarding job opportunities and challenges arising from technological advances. Knowledge, experience and expertise of young people should be leveraged in the design, implementation and evaluation of such policies. This will provide a holistic approach in improving youth productivity , youth engagement, respecting their rights and understanding their aspirations.

Rather than rating the success of programmes on narrow measures of educational or employment attainment, it is crucial that institutional, programme and policy evaluations be more firmly grounded in young people’s own accounts of what they value for

their human development and for the sustainable development of their communities and this shared planet.

Young people should have a voice in decision making that affects their future. The human development approach holds that young people should be directly involved in shaping their futures, and in this context, the voice, agency and well-being of youth should inform any strategy for skills development and broader youth development<sup>14</sup>.

### 3.0 UNIDO’S WORK ON YOUTH PRODUCTIVITY

UNIDO’s approach for youth employment addresses country-specific issues through value chain analysis, assisting young (potential) entrepreneurs in creating, formalizing and/or strengthening their businesses and assisting them in acquiring access to finance. The economic activities of these young entrepreneurs

often take place in the agricultural sector and can easily be linked to the manufacturing sector as a means to upgrade their activities.

UNIDO interventions to enhance productive work for youth are twofold: on one hand they enhance self-employment by assisting young aspiring entrepreneurs in setting up their businesses and unleashing their economic potential, while contributing to their economic independence. On the other hand, UNIDO focuses on the development of MSMEs, especially in employment intensive sectors, to create job opportunities for young women and men.

UNIDO interventions in the area of youth employment provide the necessary support to assist youth in becoming actors in the socio-economic development of their societies by enhancing the creation of productive and decent work.

**MACRO LEVEL** – creating an enabling environment:








Providers	Type of Provider	Foundational	Intermediate	Advanced	Highly Specialized
	Higher education institute		✓ (Computer Graphics)	✓ (Advanced Programming)	✓ (Artificial Intelligence)
	Local	✓ (Microsoft Excel)	✓ (Software Testing)	✓ (React, APIs development)	
	Local	✓ (Digital Literacy)	✓ (IT Security)	✓ (Application Development)	✓ (Cloud Computing)
	Global		✓ (Web Development)	✓ (Frameworks, libraries)	✓ (Technical team, leadership)
	Regional	(Email Marketing)	✓ (Pay-per-click-advertising)		
	Global	(MS Office)	✓ (Web Design)	✓ (Application Development)	✓ (Enterprise project, Management)
	Global	✓ (Digital Literacy)	✓ (SEO & Social Media Marketing)	✓ (Big Data)	✓ (Cloud & Virtualization, AI)

Table 3: Chart showing institutions and private sector arrangement to facilitate adoption of digital skills

On the Macro level, UNIDO’s interventions aim at promoting an enabling environment for employment creation for youth through MSME creation and development. In close cooperation with local and national governments, UNIDO provides the necessary analytical and advisory services for the creation of an enabling business-friendly environment.

**MESO LEVEL** – building capacities at institutional level: On the Meso level, UNIDO aims at increasing the quality of services provided by public and private institutions for employment creation for youth through MSME development and creation. By closely cooperating with local business service providers, consultants and financial institutions a sustainable support infrastructure providing the needed assistance to young entrepreneurs and aspiring entrepreneurs is built.

**MICRO LEVEL** – enterprise creation and development: On the enterprise level, UNIDO promotes innovative and growth-oriented youth-led enterprises by providing the necessary technical assistance and facilitating the access to non-financial and financial services. These interventions increase their access to markets and enhance growth potential of MSMEs to create employment opportunities for youth.

**3.1 UNIDO SPECIFIC PROJECTS**

**3.1.1 Entrepreneurship Curriculum program (ECP)**

- The ECP is a cost-effective investment in the development of entrepreneurial capacity of young people. The programme targets both girls and boys in rural and urban areas. It lays the ground for PSD;
- Entrepreneurship is introduced as a subject in secondary schools or technical and vocational schools;
- Through the ECP young people acquire personal qualities such as self-confidence, innovation and creativity, the ability to take initiatives, as well as the willingness to take calculated risks and to collaborate. They learn to save, invest and grow. All these helps to shape their career path as either employees/entrepreneur;

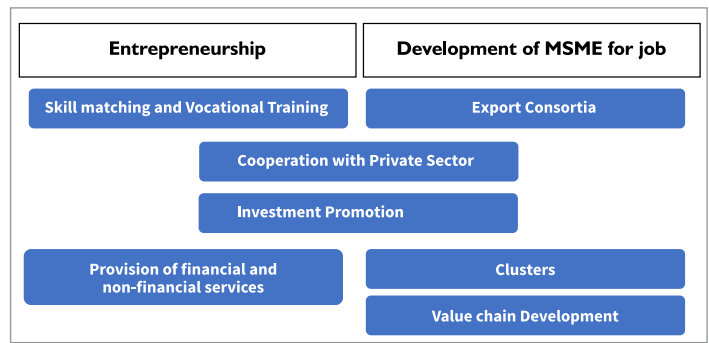


Fig. 5: Chart showing UNIDO’s Interventions to enhance productive work for youth

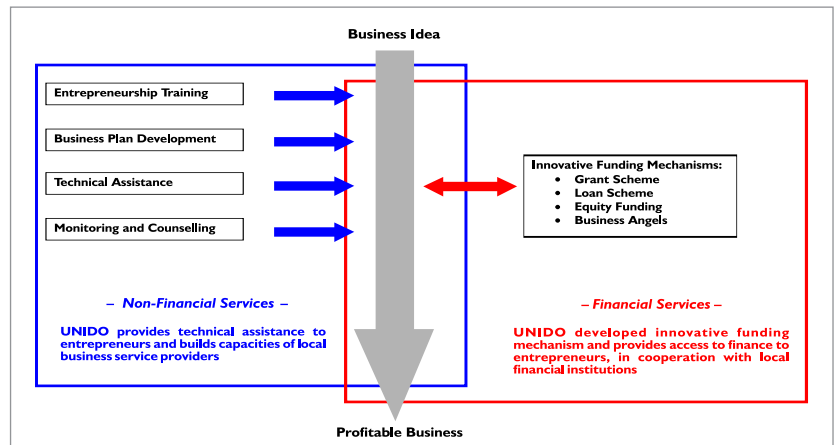


Fig. 6: Entrepreneurship: Typical Example of Provision of Financial and non-financial service

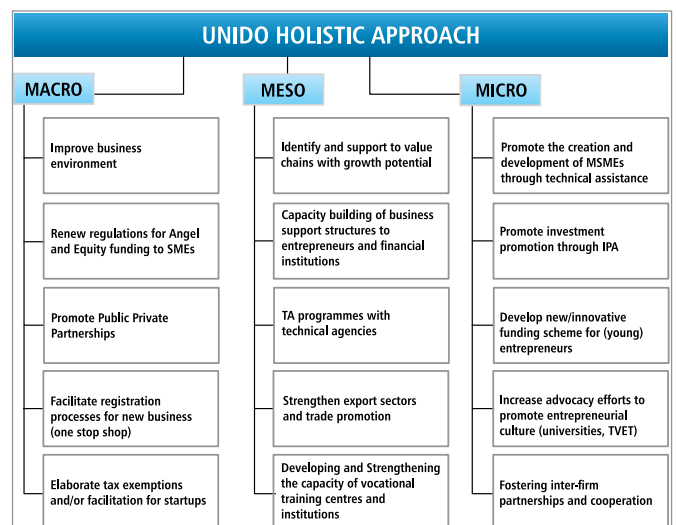


Fig. 7: Development of MSMEs: Chart showing Holistic Approach of supporting MSMEs

- The curriculum is action-oriented: more than 50 per cent of the programme’s time consists of practical research in identifying business opportunities, assessing resources for setting up and steering a business, and learning from successful entrepreneurs in their companies and in the classroom;
- ECP has been implemented in countries like Uganda, Rwanda, Namibia, Mozambique, Cape verde, Angola, Nigeria

**3.1.2 UNIDO HP Learning Initiative for Entrepreneurs (LIFE) Project**





Fig. 8: Voices of some beneficiaries

The UNIDO HP LIFE project is both face-to-face and online learning programme designed for entrepreneurs and small business owners to develop their business and IT skills. The project aims to empower existing and aspiring entrepreneurs with entrepreneurship skills, business identification, enterprise creation, business plan development and access to finance.

The project also strengthens the capacity of business support institutions and educational institutions in the field of entrepreneurship training/curricula to enable access to customized qualitative entrepreneurship training. In so doing, the UNIDO HP LIFE courses and related teaching methodology are integrated into the existing entrepreneurship curricula of institutions.

### 3.1.3 Inclusive Development and Entrepreneurship for All (IDEA)

The IDEA approach addresses youth employment challenges in Middle Income Countries and Least Developed Countries through enterprise development. IDEA is a flexible, comprehensive approach within the framework of tools with the broader goal to develop businesses and improve income and employment through productive activities. IDEA strives to combine training, support services, access to technology, access to finance and institutional capacity building.

### 3.1.4 Learning and Knowledge Development Facility (LKDF)

LKDF is a platform that promotes industrial skills development among young people in emerging and developing economies. The LKDF supports the establishment and upgrading of industrial training academies to help meet the labour market's increasing demand for skilled employees, ultimately contributing to Inclusive and Sustainable Industrial Development.

## 4.0 CONCLUSION

Youths represent 18-25% (depending on the age range

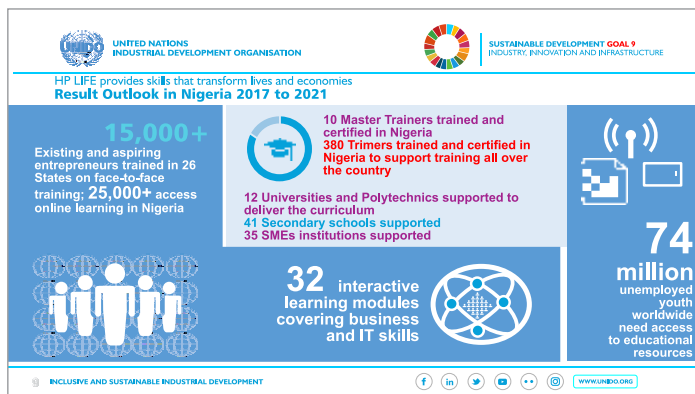


Fig. 9: Overview of HP LIFE implementation in Nigeria

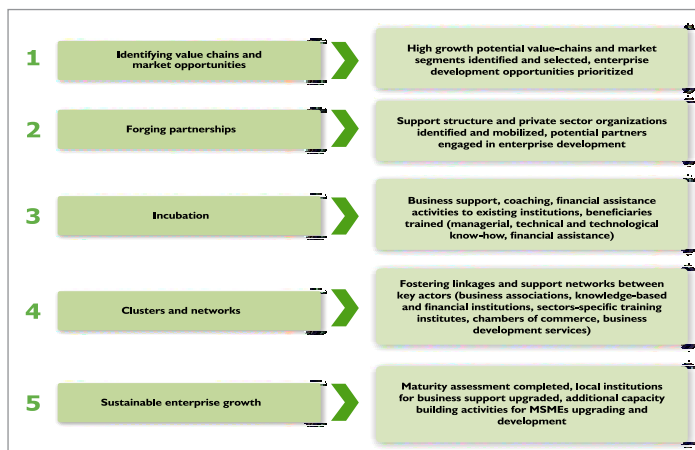


Fig. 10: Five steps of the IDEA Approach

we are referring to) of the world's population, they are the driving force for social-economic development and innovation of our society. Unfortunately, they represent over 40% of the global unemployed labour force. Youth-led development can serve as a catalyst for a new type of development, and transform the future generations by giving them the keys to their own destiny and the means to decide their own futures.

UNIDO remains committed to support productive engagement for the youth. We will also be glad to partner with your institution in addressing some of the challenges inhibiting youth productivity using some of the methodologies highlighted in this presentation.

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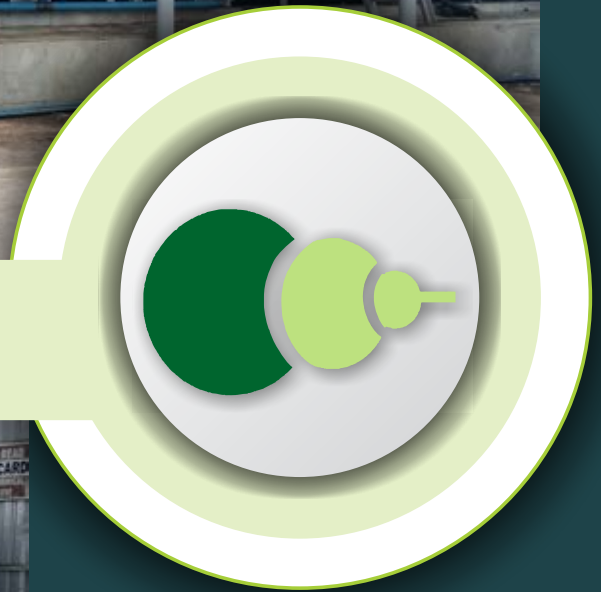
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# PRODUCTIVE ENGAGEMENT OPTIONS FOR THE YOUTH IN NIGERIA



*Pst. Ituah Ighodalo  
Trinity House Church*

## WHO IS A YOUTH?

**Youth** is the time of life when one is young, and often means the time between childhood and adulthood (maturity).

It is also defined as "the appearance, freshness, vigor, spirit, etc., characteristic of one who is young".

**Youth in Nigeria** according to Wikipedia includes citizens of the Federal Republic of Nigeria aged 18–29 years according to the new youth policy (2019). However, the African youth charter recognizes youth as people between 15–35.

Nigeria is the most populous country in Africa with one of the largest populations of youth in the world, comprising 211,400,708 members.

And has a Youth population that is about 70% of it total.

This should imply that it should be a vibrant & energetic, nation with a lot of innovation & diversity.

## Demography of Today's Youth

**Sadly this is not the case as we have the following statistics**

- Unemployed -13.9M
- Out Of School -10.1M
- Underemployed -15.9M
- Nigeria has an estimated 10,193,918 children out school
- The jobless rate in Nigeria rose to 33.3%
- Another 15.9 million worked less than 40 hours a week, making them underemployed.

- Sausage Seller in Traffic
- Yahoo-Yahoo
- Yahoo Plus Geng
- Club Goers
- Night Crawlers
- Substance Abusers
- Lazy
- Full of Sense of entitlement
- School Drop Out
- Rapist
- Cultist
- Canon Fodder for
  1. Boko Haram
  2. Herdsmen
  3. Bandit
  4. Communal Clashes

### Youths & Young Adults in Leadership

This is strange in a country which in the 50's, 60's & 70's was largely led & driven by Youths

• Obafemi Awolowo	45	Premier Western Region
• Aguiyi Ironsi	42	Head of State
• Yakubu Gowon	32	Head of State
• Murtala Mohammed	37	Head of State
• Olusegun Obasanjo	39, 62	Head of State/President
• Muhammadu Buhari	41, 73	Head of State/President
• Adeyinka Adebayo	38	Military Governor
• Akintunde Aduwo	28	Military Governor
• Alfred Diette Spiff	25	Military Governor
• David Jembewon	35	Military Governor
• Dimeji Bankole	37	Speaker House of Rep
• Yahaya Bello	46	Civilian Governor

### Consequently the lack of Youths engagement has led to

- Ignorance
- Disenfranchisement
- Anger (ENDSARS)
- Lack of productivity
- A Depressed Economy

## Why Engage The Youth?

The youths needed to be engaged in a productive way because

- They are the bedrock of Societal Development
- They will outlive the Older generation
- They have the energy to carry out meaningful development
- They are quick to innovate and invent modern ways of doing things  
(The Entertainment Industry, IT, Paystack, Flutterwave e.t.c)
- They can protect and defend the dignity of their society
- They are the one who will strengthen the military power base
- The protection of the territorial integrity of the nation is on their shoulder
- To ensure sustainability of food and agro-allied production
- The future belongs to them -DUBAI

## How To engage The ‘Youth’ in A Productive Way

**The Youth need to be productively engaged & there must be a deliberate, conscious, focused policy & effort to do this:**

1. Education: Every young person in Nigeria must be educated to a level of positive productivity.
2. Proper orientation & Re-Orientation
3. Through Self Discovery- The Youths need to know who they are and what potentials they carry -For a person to realize his or her potentials and fulfill destinies then one needs to discover the real YOU.
4. Proper Up Skilling

5. Provision of Intentional Leadership (Current Leaders need to be intentional in making the today's Youth to be responsible.

*“Leadership is the capacity to influence others through inspiration generated by a passion motivated by a vision birthed by a conviction produced by a purpose”*

**Myles Munroe**

6. Productive Mentorship
7. Creating the right Policies
8. Critical engagement & Involvement in National Planning and Development
9. Harvesting and Redirecting Positive energy through active participation in sporting activities.
10. Insisting on morality, ethics & creating the right culture

11. Creation of Tech Hub to engage their creativities.
12. Provision of start-up capital for entrepreneurs
13. Creating a conducive environment for business owners
14. Provision of necessary amenities for empowerment and social development such as:
  1. Electricity- stable & constant
  2. Good roads
  3. Access to Portable Water
  4. Good Health System
  5. Good Fiscal System
  6. Reduction in interest on loans & Facilities
  7. Reward for good work
  8. Leadership Development

*Every one is or can be a Leader in one area or another and every person has attributes of Leadership they can develop.*

*Leadership is important because it is the GAME CHANGER in any environment.*

*Lee Kwan Yew.*

A leader is one who takes the hardship of finding a better way of doing things for the common good and then selflessly shares the knowledge with others by guiding them on that path

6 April 2022





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# 29th FELLOWS CONFERENCE

HELD ON THURSDAY, OCTOBER 7, 2021



*The Chairman, Fellows Conference Committee, Engr Adekola Badiru, FNSChE, welcoming fellows to the 2021 conference*



*The National President, Engr. Saidu Mohammed, FNSChE, delivering his welcome address*



*Guest Speaker: Pastor Ituah Ighodalo presenting his paper.*



*The Chairperson of the occasion, Mrs. Toki Mabogunje (President, LCCI), giving her opening remarks.*



*Guest Speaker: Dr. Jean Bakole, ably represented by Dr. (Mrs.) Omolola Odebiyi presenting papers*



*Left: The Deputy National President, Engr. Tony Ogbuigwe, FNSChE, Right: Engr. Ben Akaakar, FNSChE contributing to the discuss during the fellows conference*



*R-L: Engr. Adekola Badiru, FNSChE, Engr Anthony Ogbuigwe, FNSChE, Engr. Saidu Mohammed, FNSChE, Pastor Ituah Ighodalo, Mrs Toki Mabogunje, Dr (Mrs) Omolola Odebiyi, Engr. Samuel Bosoro*

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# NSChE A Story of Wisdom, Strength and Endurance @50

## LIST OF NSChE PAST PRESIDENTS TO DATE

1. Engr. Shobo, Anthony Olufemi, *FNSChE, FNSE* 1969 - 1973
2. Engr (Dr.) Babajide Ademola, (Late), *FNSChE, FNSE* 1974 - 1975
3. Chief (Engr) Adeyemo, D. A. (Late), *FNSChE, FNSE* 1976 - 1981
4. Prof. Sanni, Sikiru Adebayo, *FNSChE, FNSE* 1981 - 1984
5. Dr. Onyia, Ejike Ignatius, *FNSChE, FNSE* 1984 - 1986
6. Prof. Ogunye, Ayodele Francis, *FNSChE, FNSE* 1987 - 1989
7. Engr. Bello, Mohammed Sani, *FNSChE, FNSE* 1990 - 1991
8. Dr. Ajayi-Obe, Okunola (Late), *FNSChE, FNSE* 1992 - 1994
9. Dr. Onyejekwe, Francis Okechukwu, *FNSChE, FNSE* 1995 - 1996
10. Engr. Solanke, Ayokunle Babatunde, *FNSChE* 1997 - 1998
11. Engr. Akpieyi, Joseph Jemine, *FNSChE, FNSE* 1999 - 2000
12. Engr. Soyode, Babajide Akinremi, *FNSChE, FNSE* 2001 - 2002
13. Dr. Anyakora, Nnaemeka Samuel, *FNSChE, FNSE* 2003 - 2004
14. Engr. Sodangi, Sabo I. *FNSChE, FNSE* 2005 - 2006
15. Engr. Ogedegbe Alexander, *FNSChE, FNSE* 2007 - 2008
16. Prof. Olatunji, Francis Oladipo, *FNSChE, FNSE* 2009 - 2010
17. Dr. (Engr.) Erinne, N.J.D, *FNSChE, FNSE* 2011 - 2012
18. Engr. Yar'Adua, Abubakar Lawal, *FNSChE* 2013 - 2014
19. Prof. Wami, Emenike Nyeche, *FNSChE, FNSE* 2015 - 2016
20. Prof. Adefila, Sam S. *FNSChE, FNSE* 2017 - 2018
21. Engr. Anyaoku, Onochie Azubike, *FNSChE* 2019 - 2020



Engr. Shobo



Dr. Babatunde



Engr. Adeyemo



Prof. Sanni



Dr. Onyia



Prof. Ogunye



Engr. Bello



Dr. Ajayi-Obe



Engr. Onyejekwe



Engr. Solanke



Engr. Akpieyi



Engr. Soyode



Dr. Anyakora



Engr. Sodangi



Engr. Ogedegbe



Prof. Olatunji



Dr. Erinne



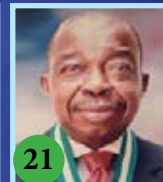
Engr. Yar'adua



Prof. Wami



Prof. Adefila



Engr. Anyaoku



Engr. Awoyinfa and Engr. Solanke co-founded NSChE with Engr Shobo while working at Lever Brothers Nigeria Ltd.



The first meeting of the founding fathers of NSChE was held at African (formerly British) Petroleum House on 12Th March, 1969



The 50th Anniversary Cake



The AIChE President Elect, Dr. Christine Grant delivering her address during the Gala Night held on Friday, November 12, 2021



NSChE President No 1 Engr. Anthony Shobo, FNSChE receiving his award plaque from the National President, Engr Saidu Mohammed, FNSChE



NSChE President No 6, Prof. Ayb Ogunye, FNSChE receiving his award plaque from the National President, Engr. Saidu Mohammed, FNSChE



#12 Engr. Babajide #15 Engr. Alex Ogedegbe #17. Dr John Erinne Soyode  
Receiving Their Award Plaques From The National President, Engr Saidu Mohammed, FNSChE



#19. Prof. Emenike Wami



#20. Prof. Sam Adefila



#21. Engr. Onochie Anyaoku

Receiving their award plaques from the National President, Engr Saidu Mohammed, FNSChE



Cross-Sectional View Of Participants At The Gala Night Held On Friday, November 12, 2021



Cross-sectional view of participants at the Gala Night held on Friday, November 12, 2021

Group photograph of members of the Lagos/Ogun Chapter - the host Chapter for the golden anniversary celebration



**COMMUNIQUE OF THE 51ST ANNUAL CONFERENCE/ANNUAL GENERAL MEETING OF THE NIGERIAN SOCIETY OF CHEMICAL ENGINEERS (A DIVISION OF THE NIGERIAN SOCIETY OF ENGINEERS-NSE)**

**THEME**

**CHEMICAL ENGINEERING AND THE CHANGING WORLD**

**HELD BETWEEN WEDNESDAY 10TH NOVEMBER AND SATURDAY 13TH NOVEMBER, 2021, AT THE FEDERAL PALACE HOTEL AND CASINO, VICTORIAL ISLAND, LAGOS, NIGERIA**

### 1.0 INTRODUCTION

The 51st Annual conference/Annual general meeting (AGM) of the Nigerian Society of Chemical Engineers (NSChE) was hosted by the Lagos/Ogun Chapter. The theme was: CHEMICAL ENGINEERING AND THE CHANGING WORLD. This blended event which featured keynote and plenary speeches, technical sessions, and spouse programmes climaxed into the 50th golden celebration of the society which could not hold due to the pandemic in 2020. The Keynote Speaker was the Vice President of the Federal Republic of Nigeria, Prof. Yemi Osinbajo who was ably represented by Dr. Ogbonanya Onu, an accomplished Chemical Engineer and the Honourable minister for Science, Technology and Innovation, Federal Republic of Nigeria. Other notable dignitaries at the conference include:

- The Governor of Ogun State, Prince Dapo Abiodun ably represented by Engr. Gbenga Dairo, the honourable commissioner for transport, Ogun State
- Engr. Alexander Ogedegbe, who chaired the opening ceremony
- Present and Past Presidents of the Society
- Representative of the President of Coren
- Fellows of the Society and other dignitaries.

### 2.0 HIGHLIGHTS OF THE CONFERENCE

#### 2.1 COMMENTS FROM DIGNITARIES

- I. The world is changing as occasioned by the pandemic leading to altered way of life
- II. The Chemical Engineering Profession is cardinal to providing solutions to the world challenges and indeed various of developmental issues facing Nigeria as a nation

- III. The NSChE needs to respond to national issues by partnering with Government at all levels in terms of policy development and implementation
- IV. The NSChE has performed creditably well as a society in the last 51 years and there is the need to reposition herself for the future
- V. The traditional Chemical Engineering education needs to be reviewed to meet current and future challenges

#### 2.2 PLENARY SESSIONS AND PAPER PRESENTATIONS

The various speakers and Presenters, articulated points and then came up with the following submission:

- i. That the world is faced with myriad of challenges which call for multifaceted approach solutions
- ii. That Chemical Engineers have critical role to play in providing solutions to the various challenges facing our world today
- iii. That energy, water, health and other grand challenges requires multidisciplinary approach and that Chemical engineering must take the driver seat
- iv. That Nanotechnology is one of the drivers of sustainable development and that Chemical Engineering must explore the use of nanotechnologies in developing materials for energy and health applications as well as other areas of use
- v. That the NSChE must partner the Government for policy development and implementation to drive local technological development and innovation
- vi. That Chemical Engineers must participate in the business of governance

*“Nigeria’s higher institutions must collaborate with the industry to play their role in developing the curriculum that will provide skilled graduates to respond to the challenges in a changing world.”*

- vii. That the Society must create strategic goals to cater for her young members
- viii. That the Society must develop a new vision and strategic pathways for the next 5 decades
- ix. That innovative chemical engineering education must be embraced through a strong town and gown collaborations
- x. That the water-energy-food and climate change issues provide opportunities for chemical engineers and must rise to the occasion
- xi. That local materials and technologies must be explored to solve national problems
- xii. The use of artificial intelligence and computer tools in solving chemical engineering problems must be embraced in the changing world
- iii. That the Society should be at the forefront of developing alternative economic sectors apart from the Oil and Gas industry. These include, Agriculture in the primary sector of the economy, Manufacturing of consumer goods, health care products etc in the secondary sector and the provision of and power and water in the tertiary sector among others.
- iv. That the future of the society depends on her young members, therefore, deliberate efforts must be made to cater for them through capacity building programmes to bridge their skill gaps. Opportunities must be also be provided for them to acquire necessary technical, managerial and soft skills.

### 3.0 CONCLUSION AND RECOMMENDATIONS

It was concluded and thus recommended:

- i. That NSChE must take the driver seat in providing solutions to national challenges in areas like Energy, Water, Food Security, Health, Climate Change, among others. Chemical Engineers must play the leading and supporting roles in the use of renewable energy, hydrothermal, wind, solar, geothermal and biomass which are all expected to rise. Chemical Engineers must assist in the provision of clean water, facilities for food storage and preservation, drugs and biomedical services and also support activities that ensure significant reduction in greenhouse gas emissions.
- ii. That the Society must forge a new strategic vision for the next few decades to replace the NSChE VISION 2020 which had since expired.
- v. Huge opportunities exist for Nigeria to develop her chemical industry through indigenous technological development and innovation. This is pivotal to the revitalization of the manufacturing industry using locally sourced raw materials. Chemical Engineers must drive these initiatives
- vi. Nigeria’s higher institutions must collaborate with the industry to play their role in developing the curriculum that will provide skilled graduates to respond to the challenges in a changing world. In particular, deliberate efforts must be made to enhance chemical engineering education driven by effective collaboration between academia and the industry. The Outcome Based Education (OBE) approach must be adopted to produce chemical engineering graduates that are fit for purpose.

**Engr. Saidu Aliyu Mohammed**, *FNSChE*  
National President

**Engr. Samuel O. Bosoro**, *MNSChE*  
Executive Secretary



# THE 51ST ANNUAL GENERAL MEETING

HELD AT THE FEDERAL PALACE HOTEL, VICTORIA ISLAND, LAGOS ON FRIDAY, NOVEMBER 12, 2021



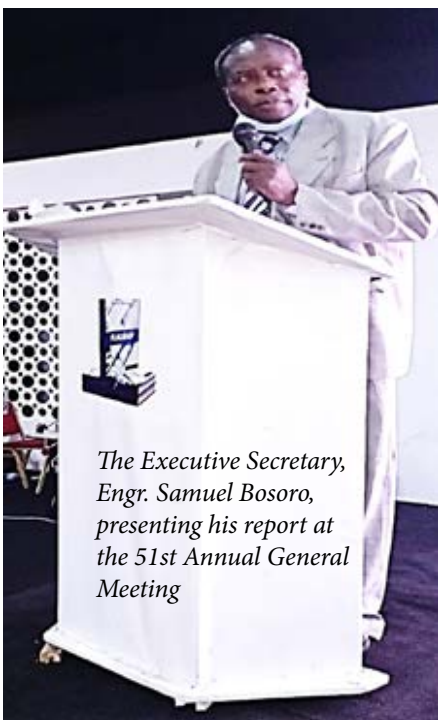
The banner for the 51st International Conference / Annual General Meeting and exhibition held at the Federal Palace Hotel between 10th and 13th November 2021



The National Treasurer, Engr. Anthony Ogheneovo, FNSChE presenting the financial report at the 51st AGM



The National President, Engr. Saidu Mohammed, FNSChE, delivering his address during the Annual General Meeting held at the Federal Palace Hotel, Victoria Island, Lagos on Friday, November 12, 2021 while the other board members listen with rapt attention



The Executive Secretary, Engr. Samuel Bosoro, presenting his report at the 51st Annual General Meeting



Cross-sectional view of participants at the 51st Annual General Meeting



Group photograph of board members taken at the end of the 51st Annual General Meeting. 4th from right, the National President, Engr Saidu Mohammed, **From Right To Left:** Engr Anthony Ogheneovo, Engr Donatus Uweh, Engr. Onochie Anyaoku, Engr Anthony Ogbuigwe, Engr Dr Mrs Grace Akujobi-Emetuche, Engr Ben Akaakar, Engr. Samuel Bosoro



Past Presidents deliberating at the 51st Annual Conference. Sitting from left to right: Dr N. J. D. Erinne, *FNSCHE*, Prof Ayo Ogunye, *Fnsche*, Prof. Emenike Wami, *FNSCHE*, Prof Sam Adefila, *FNSCHE* And Engr. Onochie Anyaoku, *FNSCHE*



Past President, Dr N. J. D. Erinne, *Fnsche*, making his contribution during the 51st Annual General Meeting



Cross-Sectional view of participants at the 51st Annual General Meeting



- ENGINEERED CHEMISTRY
  - DRILLING FLUIDS
  - BLENDING SERVICES
- EQUIPMENT SALES & RENTAL
- LOGISTICS MANAGEMENT
- WAREHOUSING & STORAGE
- OPERATIONS & MAINTENANCE (OSM)
- TRANSPORTATION & MARINE RELATED SERVICES
- COMPLETIONS & PRODUCTION SYSTEMS
- ENGINEERING PROCUREMENT & CONSTRUCTION (EPC)



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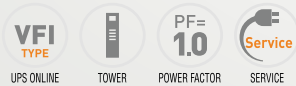


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