



INTRODUCTION TO NET ASSESSMENT STUDIES

A LECTURE DELIVERED

BY

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TO

PARTICIPANTS OF AWCN 10/2026

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TOPIC

INTRODUCTION TO NET ASSESSMENT - NATIONAL DEFENCE COLLEGE NIGERIA FORMAT

LEARNING OBJECTIVES

- ❖ **Concept of Net Assessment**
- ❖ **Brief History of Net Assessment**
- ❖ **Objectives of Net Assessment**
- ❖ **Types of Net Assessment**
- ❖ **Methods Used in Net Assessment**
- ❖ **NDC Format of Net Assessment**



CONCEPT OF NET ASSESSMENT

CONCEPT OF NET ASSESSMENT (CONT)



Source: www.google.com/image



CONCEPT OF NET ASSESSMENT (CONT)

ENGLISH PREMIER LEAGUE WINNER - 2035



Source: www.google.com/image

CONCEPT OF NET ASSESSMENT (CONT)

ENGLISH PREMIER LEAGUE RESULT 2010-2024

Serial	League		
1.	2011/2012	1st	3rd
2.	2013/2014	1st	4th
3.	2017/2018	1st	6th
4.	2018/2019	1st	5th
5.	2020/2021	1st	8th
6.	2021/2022	1st	6th
7.	2022/2023	1st	2nd
8.	2023/2024	1st	2nd

Source: www.google.com/image

CONCEPT OF NET ASSESSMENT (CONT)



**India College of Defence Management
Logo**

DEFINITION OF NET

❖ Consideration of all aspects and perspectives of ours against those of our competitor; relevant and significant to the problem at hand, to give a net outcome of a competitive situation

Source: www.google.com/image

CONCEPT OF NET ASSESSMENT (CONT)



**India College of Defence Management
Logo**

DEFINITION OF ASSESSMENT

❖ A systematic process of analysis, appraisal and review to develop wide and deep knowledge

Source: www.google.com/image

CONCEPT OF NET ASSESSMENT (CONT)



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Logo**

Source: www.google.com/image

DEFINITION OF NET ASSESSMENT

“Net Assessment is a comparative long-term and multidisciplinary analysis of military, technological and economic factors between nations”

CONCEPT OF NET ASSESSMENT (CONT)



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Source: www.google.com/image

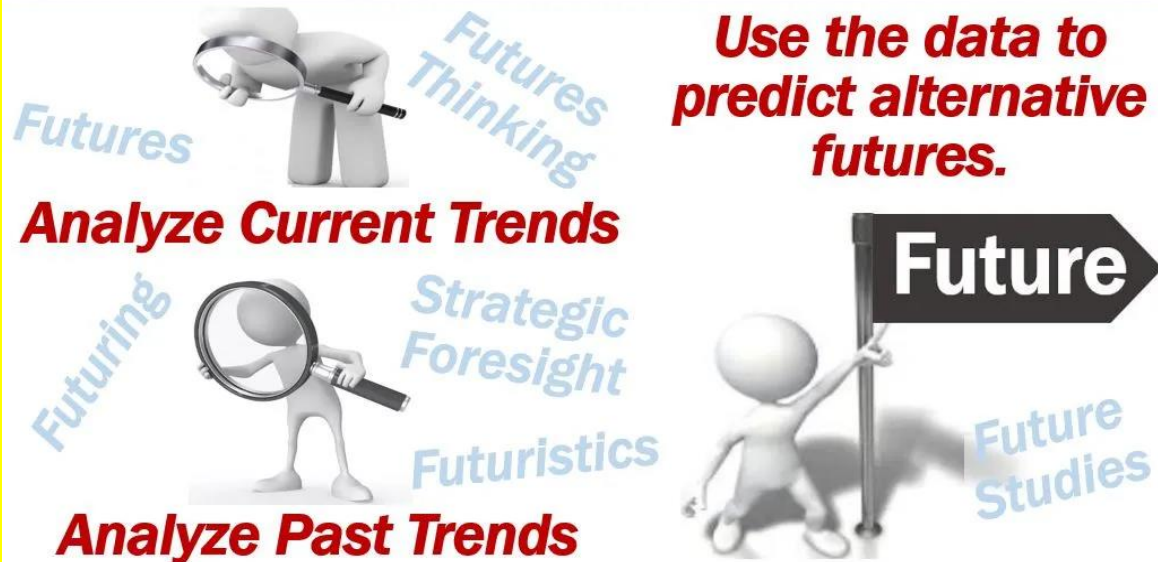
DEFINITION OF NET ASSESSMENT

“Net Assessment helps the top hierarchy to understand the long term security environment and how that compares with the potential opponents and what actions must be considered to improve the situation in the future”

CONCEPT OF NET ASSESSMENT (CONT)

Futurology

Predicting alternative futures by carefully analyzing current and past trends



DEFINITION OF FUTUROLOGY

- ❖ Systematic forecasting of the future
- ❖ Providing possible, probable and desirable future development through analysing past and present trends in the society

Source: www.google.com/image



BRIEF HISTORY OF NET ASSESSMENT

BRIEF HISTORY OF NET ASSESSMENT



Flags of USSR and USA

- ❖ Roots can be traced to the end of World War II which saw the rapid rise of the bipolar world order dominated by US and USSR
- ❖ By the end of 1950s the US Department of Defence was too focused on short-term planning instead of long term evaluation of the emerging competition with the Soviet Block

Source: <https://www.bbc.co.uk/newsround/>

BRIEF HISTORY OF NET ASSESSMENT (CONT)



Andrew Marshall
Net Assessment Strategist

- ❖ In 1960s Andrew Marshall's Team began developing the conceptual framework and analytical tools needed to deal with long term US military planning
- ❖ In 1971, the US President Richard Nixon directed that a Net Assessment Group be formed

Source: www.google.com/image

BRIEF HISTORY OF NET ASSESSMENT (CONT)

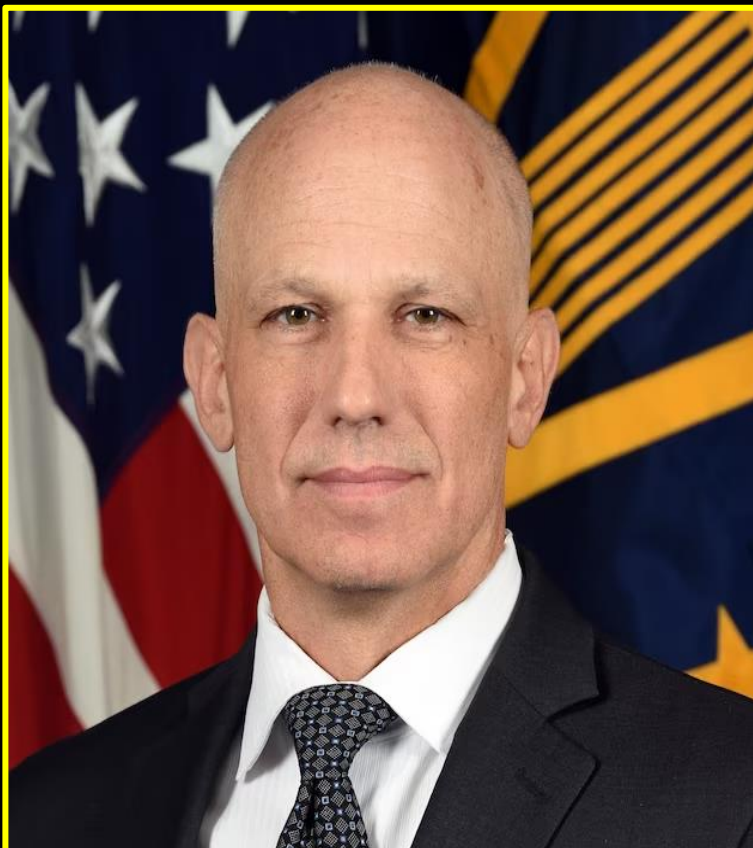


Office of Net Assessment Logo

- ❖ In 1973, Net Assessment Group was transferred to the DoD as the Office of Net Assessment
- ❖ Think Tank Group in the Pentagon
- ❖ Headed by Andrew Marshall from 1973 – 2015

Source: www.google.com/image

BRIEF HISTORY OF NET ASSESSMENT (CONT)



Jim Baker

**Director of the Office of Net
Assessment (2015 – 2025)**

- ❖ **Jim Baker Director of ONA (2015 – 2025)**
- ❖ **Responsible to the Secretary of Defense**
- ❖ **Provides deep, independent long term future thinking on strategies and opportunities that improve the US position in military-economic-political competition**
- ❖ **Provides long term strategic direction for the military through futurology**

Source: www.google.com/image



OBJECTIVES OF NET ASSESSMENT

OBJECTIVES OF NET ASSESSMENT

- Describing long term military developments and trends, including doctrine, strategy, technology, force structure and operations, weapons design and capability
- Identifying emerging or future threats, opportunities and risks in the military competition
- Highlighting, for senior defence managers, trends that may change the long-term balance between the 2 sides



OBJECTIVES OF NET ASSESSMENT (CONT)

- **Identifying the competitive advantages and distinctive competencies of military posture of either of the competing sides**
- **Appraising the strengths and weaknesses of own (or other countries') forces viewed in balance against the competition and the competitive environment, by carrying out SWOT analysis.**
- **Generating long-term strategy points.**



TYPES OF NET ASSESSMENT



TYPES OF NET ASSESSMENT

- ❖ **Overall security environment (strategic Net Assessments – global, regional, national)**
 - ✓ **Global nuclear balance**
- ❖ **Military balances (strategic and operational)**
 - ✓ **Northeast Asian military balance**
- ❖ **Weapons and Force comparisons (operational)**
 - ✓ **NATO-Russia military balance**



TYPES OF NET ASSESSMENT (CONT)

❖ Lessons learnt and history evaluations

- ✓ Bi-polar world scenario**

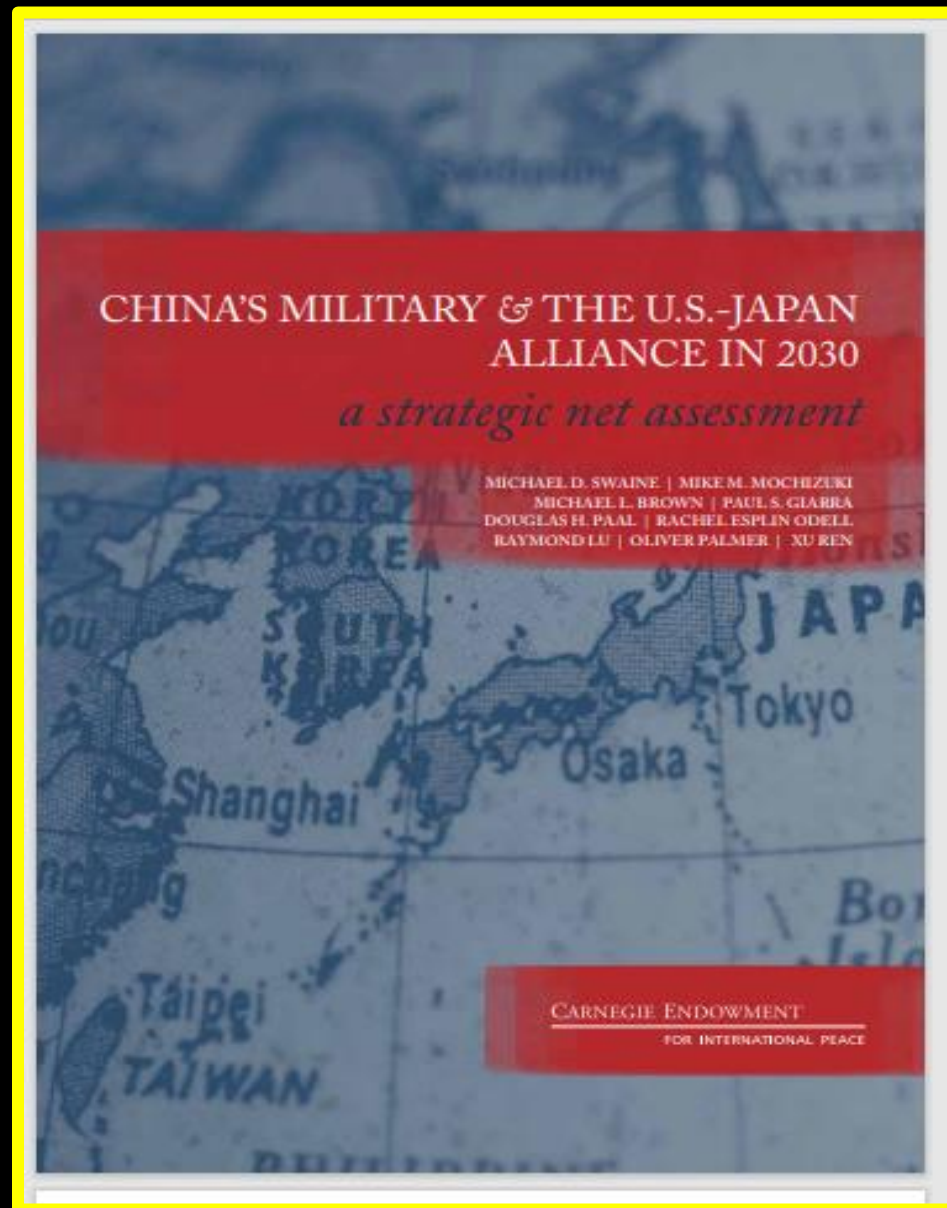
❖ Special assessment topics

- ✓ Defence Transformation and National Security: Strategic Options for Nigeria by 2035**



TYPES OF NET ASSESSMENT (CONT)

- ❖ **Analytical framework of tools**
 - ✓ **Artificial Intelligence and Human Security: Strategic Options for Armed Forces of Nigeria by 2035**
- ❖ **Private assessments**
 - ✓ **Apple Inc global dominance over Samsung corporation**



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METHODS USED IN NET ASSESSMENT



METHODS USED IN NET ASSESSMENT

- **Scenarios**
- **Trend Analysis**
- **Considered Judgement**
- **War Games**

SCENARIO METHOD IN NET ASSESSMENT



Source: www.google.com/image

SCENARIO METHOD IN NET ASSESSMENT (CONT)



MACROECONOMIC PROJECTION RATIONALE

01

GLOBAL ECONOMIC OUTLOOK

- Global economic outlook
- Oil price
- Covid-19

02

DOMESTIC ECONOMIC OUTLOOK

- Oil production
- Capital expenditure
- Policy efficiency

03

ROLE OF PRIVATE INVESTMENT

High-end private investment

Source: www.google.com/image

SCENARIO METHOD IN NET ASSESSMENT (CONT)

THE OUTLOOK



2021-2025: The likely paths ahead of us

01

Worst Case:

This scenario mirrors the path of complete economic and policy recklessness/negligence.

02

Business As Usual:

This scenario assumes we continue with the current path.

03

Best Case:

This scenario marks a complete departure from the BAU-approach to the higher path of vision, commitment and tough policy choices on investment.

Source: www.google.com/image



NDC FORMAT OF NET ASSESSMENT



OUTLINE FRAMEWORK OF NDC NET ASSESSMENT

- **Introduction**
- **Aim**
- **Efforts of the Government/Organisation**
- **Environmental Scan**
- **Scenario Building Process**
- **Plausible Scenarios**
- **Scenario-based Strategies**
- **Conclusion**
- **Recommendation**

INTRODUCTION

- ❖ **Title – Time Bound**
- ❖ **Background – Inverted pyramid NDC format**
- ❖ **Conceptual Definition**
- ❖ **Problem Identification**
- ❖ **Purpose**
- ❖ **Scope – Embedded in Prose**
- ❖ **Delimitation**



INTRODUCTION (CONT)

TOPIC

**DEFENCE TRANSFORMATION AND NATIONAL SECURITY: STRATEGIC
OPTIONS FOR NIGERIA BY 2035**

BACKGROUND

**Global Perspective – The UK MOD Emerging Technology Framework 2019 –
2030**

**Regional Perspective - Egyptian Armed Forces Integrated Defence
Production Plan 2020 - 2030**

INTRODUCTION (CONT)

DELIMITATION

- ❖ From 2012 to July 2022, which covers the period that the FGN made concerted efforts in addressing contemporary threats**
- ❖ Projected up to 2035 to analyse strategic options for defence transformation towards meeting future national security threats**



OUTLINE FRAMEWORK OF NDC NET **ASSESSMENT (CONT)**

AIM

AIM

- ❖ **Clear, concise and unambiguous**
- ❖ **Qualified by the time limitation in the topic**



CRAFTING THE AIM

TOPIC

**DEFENCE TRANSFORMATION AND NATIONAL
SECURITY: STRATEGIC OPTIONS FOR NIGERIA BY 2035**

AIM

To proffer strategic options towards Nigeria's defence transformation for enhanced national security by 2035 with a view to making recommendations



OUTLINE FRAMEWORK OF NDC **NET ASSESSMENT (CONT)**

**EFFORTS OF THE GOVERNMENT/
ORGANISATION**



EFFORTS OF THE GOVERNMENT/ ORGANISATION

- ❖ Adequately discuss the efforts of the government or organisation in relation to the subject matter**
- ❖ Avoid duplicating current efforts in your strategies**



OUTLINE FRAMEWORK OF NDC **NET ASSESSMENT (CONT)**

ENVIRONMENTAL SCAN



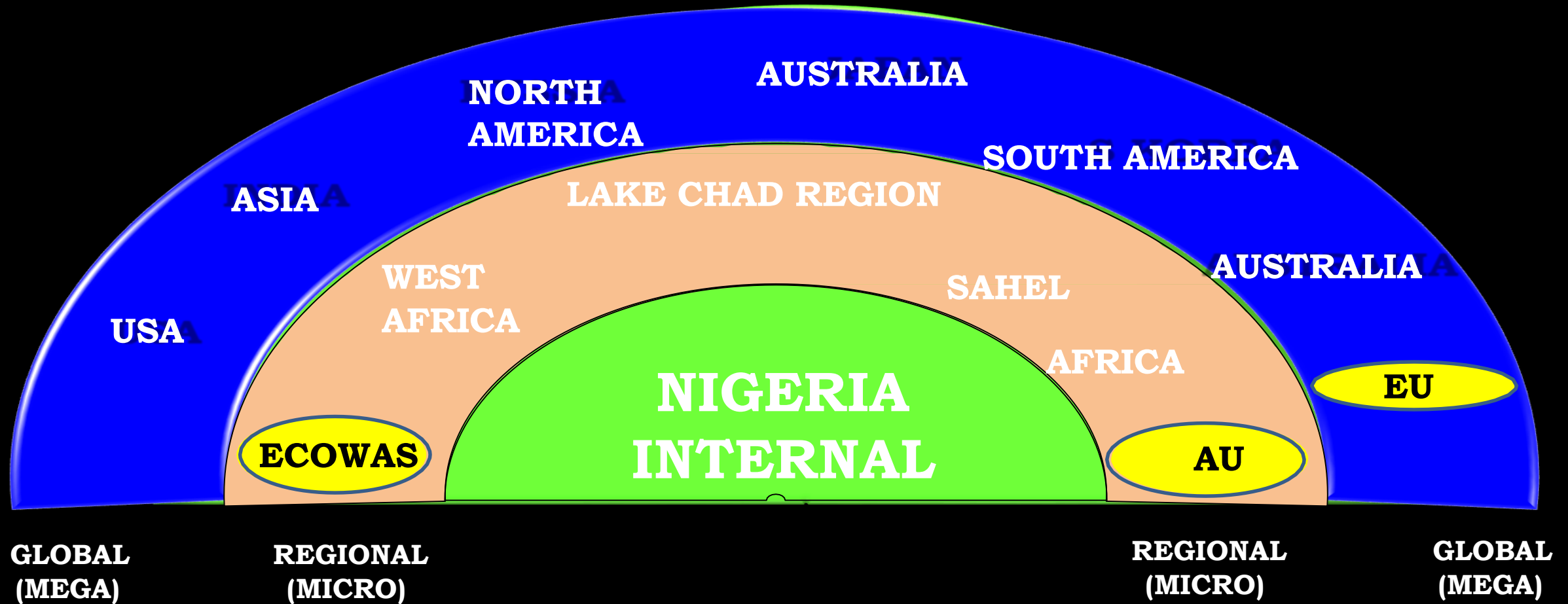
ENVIRONMENTAL SCAN

PURPOSE OF ENVIRONMENTAL SCAN

“The purpose is ultimately to identify key factors that impact existence and long term performance of an organization (national security in case of nation-states) and classify them into strengths and weaknesses; based on their ‘performance’ and ‘importance’ and into opportunities and threats; based on their ‘impact’ and ‘desirability’ or ‘lucrative’ness’.”



NIGERIA: RELEVANT ENVIRONMENT





FACTORS TO BE CONSIDERED IN ENVIRONMENT SCAN

**Important & specific occurrences eg
Ukraine – Russia War, Nuclear capability**

**Group of similar/related events that tend to
move in a direction eg Piracy in Somali Waters**

Events

Trends

Interests

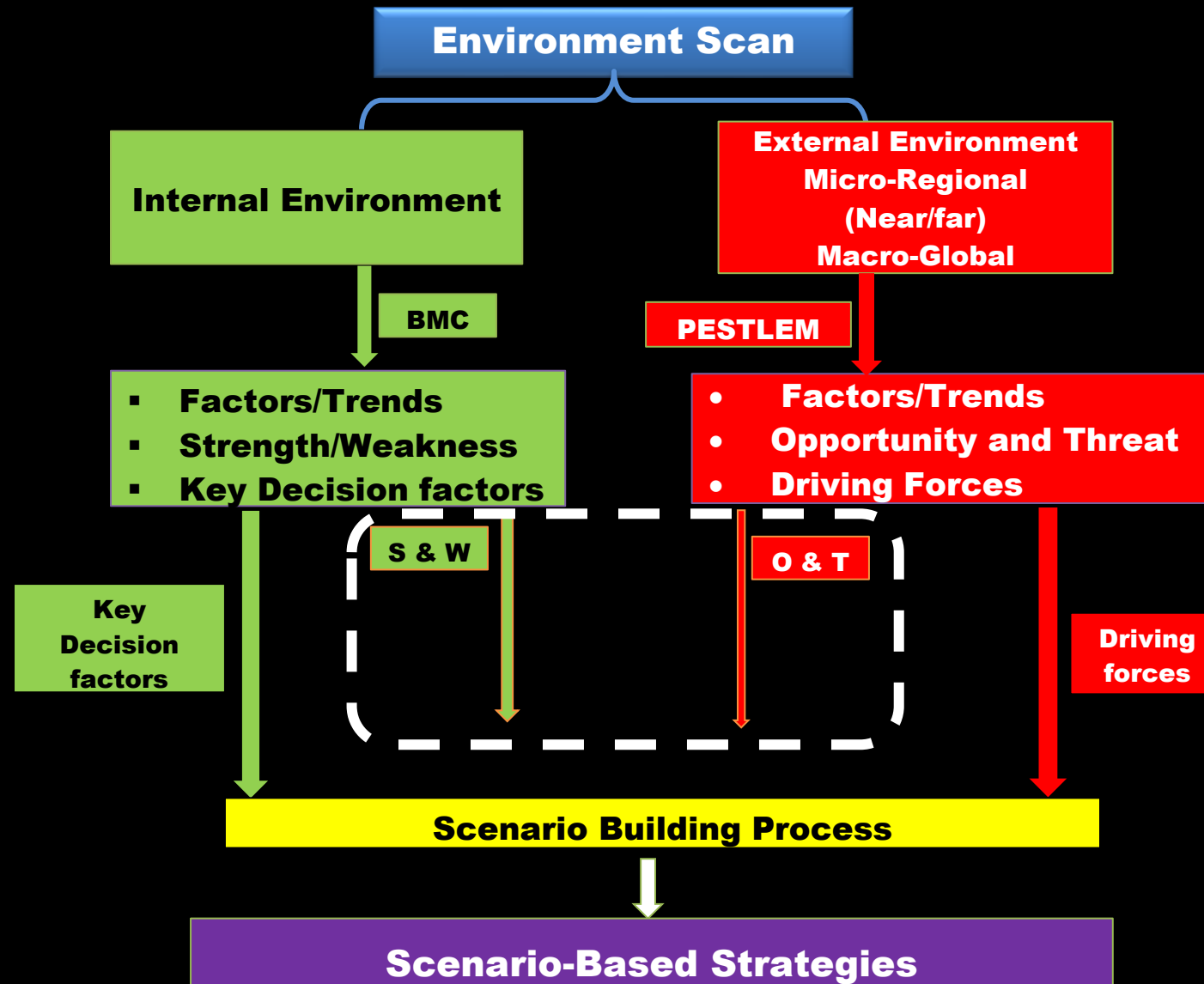
Issues

**Expectations of interested groups in
light of concern for issues eg
separatists agitation in Nigeria**

**Concerns arising in response to events &
trends eg EU Energy Crisis**



ENVIRONMENTAL SCAN





ENVIRONMENTAL SCAN (CONT)

INTERNAL ENVIRONMENT



THE BMC ANALYSIS OF INTERNAL ENVIRONMENT

BASE

- **Given by nature – change slowly**
- **Spatial, Material, Population**

MEANS

- **Man made competencies**
- **Military, Economic, Political**

CAPACITY

- **Social, Moral or Psychological, Political – Capacity for collective action**



INTERNAL ENVIRONMENT SCAN

BASE MEANS CAPACITY ANALYSIS PROFORMA

Serial	Elements of BMC	Description	Factors/Facts/Data	Analysis/Deduction	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1.	Base:	• Given by nature –change slowly • Spatial, Material, Population			
	a. Geo-Spatial Base	(1) Surface & dimensions of territory (2) Location & strategic position (3) Type of frontiers (4) Weather/climate (5) Neighbours			
	b. Geo-Material Base	(1) Arable land (2) Natural resources of energy (3) Raw materials (4) Serious deficiencies			
	c. Geo-Demographic Base	(1) Size & age profile (2) Density (3) Ethnic homogeneity (4) Cultural dimensions			



INTERNAL ENVIRONMENT SCAN (CONT)

BASE MEANS CAPACITY ANALYSIS PROFORMA (CONT)

(a)	(b)	(c)	(d)	(e)	(f)
2.	<u>Means:</u>	• Man made competencies • Military, Economic, Political			
	a. Economic	(1) Economic model (2) Fiscal and monetary policies (3) Industry (4) Agriculture (5) Services			
	b. Military	(1) Size of the armed forces (2) Defence expenditure trends			
	c. Energy	(1) Energy policies / basket (2) Exploitation of energy resources (3) Oil refineries (4) Oil & Gas pipelines (5) Transmission grid (6) Strategic			



INTERNAL ENVIRONMENT SCAN (CONT)

BASE MEANS CAPACITY ANALYSIS PROFORMA (CONT)

(a)	(b)	(c)	(d)	(e)	(f)
	d. Political	(1) Form of government (2) Structure of government (3) Constitution (4) Bureaucracy (5) Judiciary (6) Other power centres			
	e. Technological	(1) Research institutes (2) Funding of research (3) IPR Policies			
	f. Infrastructure	(1) Airlines (2) Roads (3) Railways (4) Ports (5) Internet & communication			
	g. Human Capital	(1) Size and quality of workforce (2) Availability of institutions for work force development			



INTERNAL ENVIRONMENT SCAN (CONT)

BASE MEANS CAPACITY ANALYSIS PROFORMA (CONT)

(a)	(b)	(c)	(d)	(e)	(f)
3.	<u>Capacity:</u>	• Social, Moral or Psychological, Political –Capacity for collective action			
	a. Social	(1) Degree of social integration – religious, ethnic or eco-divide (2) National cohesion (3) Population unity & will behind govt initiatives (4) Social organisations, institutional flexibility, solidarity and social discipline			
	b. Moral or Psychological	(1) Historical perspective of nations (2) National character, strat culture (3) Morale, spirit in face of hardships (4) Inventiveness, flexibility, perseverance and adaptability			
	c. Political	(1) Quality of command/leadership (2) Diplomatic culture (3) Bureaucratic culture (4) Judiciary and law enforcement			



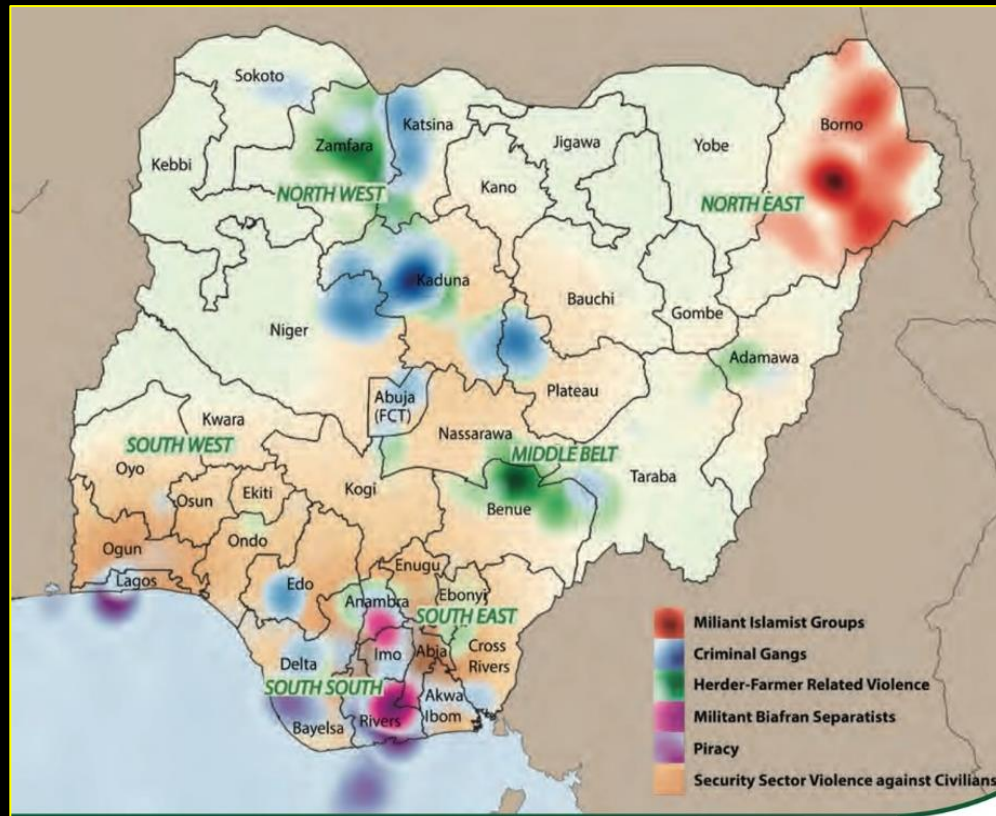
INTERNAL ENVIRONMENT SCAN (CONT)

KEY DECISION FACTORS

“The key decision factors derived from the analysis of strengths and weaknesses are the critical considerations that have a direct influence on the projected future developments in the internal environment.”

INTERNAL ENVIRONMENT SCAN (CONT)

GEO-SPATIAL



Map of Nigeria Showing Regional Spread of Insecurity

❖ Nigeria has vast landmass with ungoverned spaces and porous borders requiring security coverage

❖ Criminals and illicit arms infiltrate through the porous borders and fuel insecurity in the country

❖ Insecurity incidents recorded

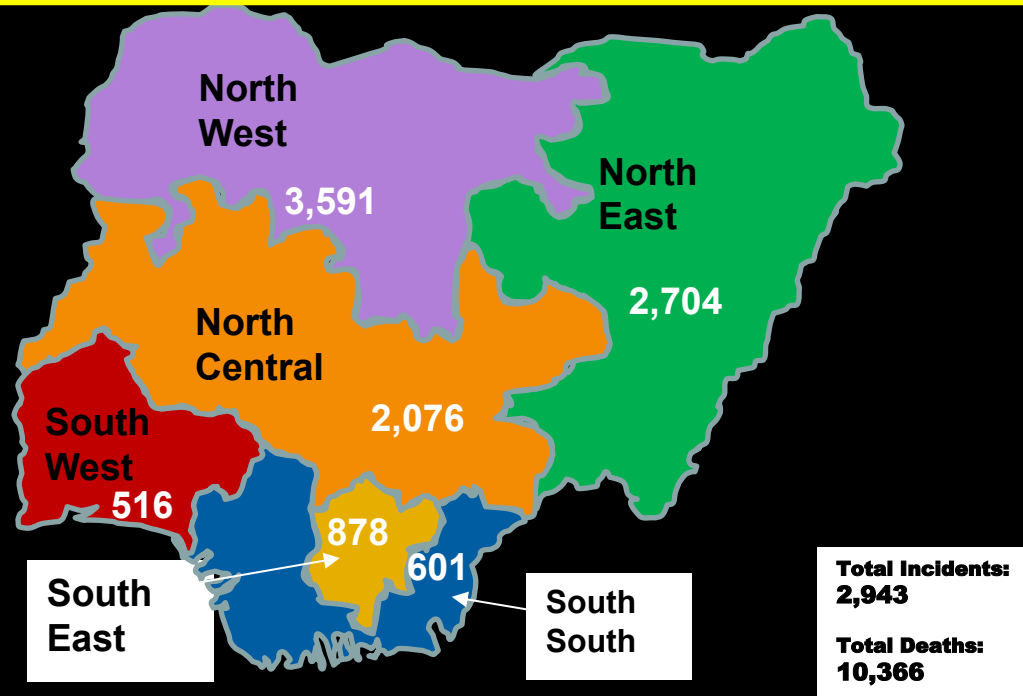
✓ 2017	-	441
✓ 2018	-	405
✓ 2019	-	590
✓ 2020	-	649

Source: Nigerian House of Representatives, 2021

Source: Eons Intelligence, 2022

INTERNAL ENVIRONMENT SCAN (CONT)

GEO-SPATIAL (CONT)



Map of Nigeria Showing Statistics of Deaths Due to Insecurity in 2021

❖ Deaths recorded due to insecurity

✓ 2017	-	4,633
✓ 2018	-	6,565
✓ 2019	-	8,340
✓ 2020	-	9,649
✓ 2021	-	10,366

❖ The trend might continue, thus undermining national security in the future, unless the AFN is repositioned to effectively curb the threats

Insecurity is a KDF necessitating defence transformation for enhanced national security in Nigeria by 2035

INTERNAL ENVIRONMENT SCAN (CONT)

POLITICAL



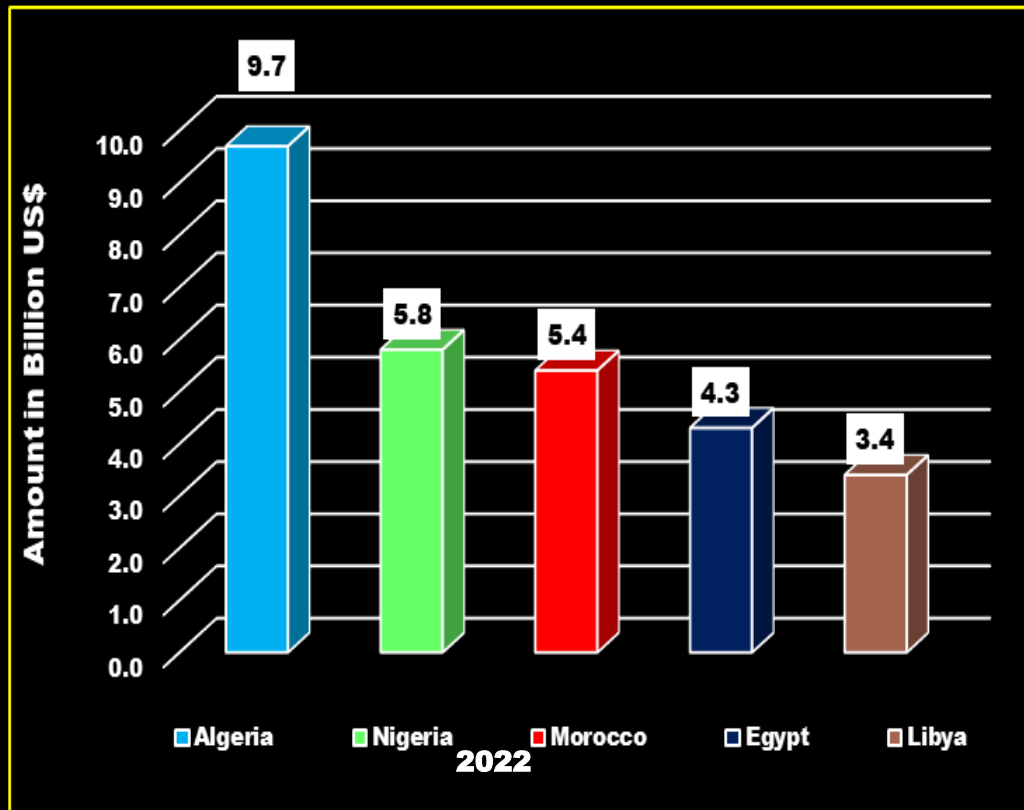
Nigeria Defence Budget 2017 - 2022

- ❖ FGN approved US\$1 billion extra budgetary funding for procurement of military equipment in 2018 and 2021
- ❖ Defence budget increased from N330 billion in 2017 to N1.20 trillion in 2022
- ❖ Nigeria's defence budget percentage to GDP was 0.62 per cent while that of Algeria and South Africa were 6.7 and 1.1 per cent respectively in 2020

Source: DHQ, 2022

INTERNAL ENVIRONMENT SCAN (CONT)

POLITICAL (CONT)



Comparative Defence Expenditure of 5 AU Member Countries

Source: Statista, 2022

❖ Nigeria ranked second out of 55 AU member countries in defence expenditure in 2022

❖ Comparatively, Nigeria's defence budget percentage to GDP in Africa is low. Nonetheless, its defence expenditure ranking is high which reflects strong political will by the FGN in driving defence transformation

Political Will is a KDF towards defence transformation and enhanced national security in Nigeria by 2035



INTERNAL ENVIRONMENT SCAN (CONT)

Summary of Key Decision Factors from Internal Environmental Scan

Serial	Key Decision Factors	Remarks
(a)	(b)	(c)
1.	Political Will	
2.	Adequate Funding	
3.	Defence Research and Development Capability	
4.	Defence Production Capability	
5.	Growing Economy	
6.	Organisational Structure of MOD	
7.	Defence Space Technology	
8.	Emerging Technologies	
9.	Insecurity in Nigeria	

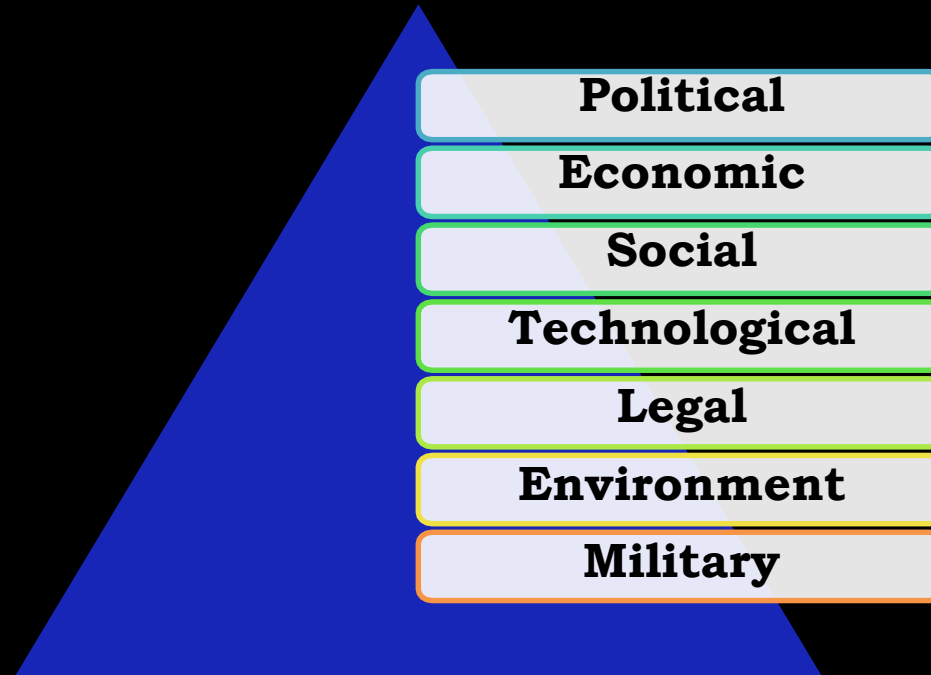


ENVIRONMENTAL SCAN (CONT)

EXTERNAL ENVIRONMENT



PESTLEM ANALYSIS OF EXTERNAL ENVIRONMENT



Scan each factor in the external environment with respect to your nation to identify the factors which are relevant to your nation



EXTERNAL ENVIRONMENT SCAN

PESTLE-M ANALYSIS PROFORMA: RELEVANT GLOBAL ENVIRONMENT

Serial	Elements of PESTLE-M	Description	Factors/Facts/ Data	Analysis/ Deduction	Remarks
(a)	(b)	(c)	(d)	(e)	(f)
1.	Political	a. Type of Government b. Trends in IR c. Relations with other nations in the region d. Issues with own Nation e. Other Geopolitical Drivers			
2.	Economy	a. Macroeconomic Indicators b. GDP c. Balance of Trade d. Government Expenditures e. Government Debt Levels f. Dependence on Aid g. Ease of doing Business			
3.	Social	a. Demographic pattern b. Social Cohesion c. Ethnic Structures d. Literacy e. HDI f. Internal Disturbances g. Cultural & Class Tensions			
4.	Technology	a. Level of Technology b. Access to Modern Technology from abroad c. R&D Capacity & Capability d. Military –Industrial Infrastructure			



EXTERNAL ENVIRONMENT SCAN (CONT)

PESTLE-M ANALYSIS PROFORMA: RELEVANT GLOBAL ENVIRONMENT

(a)	(b)	(c)	(d)	(e)	(f)
5.	Legal	a. Position on International Law issues b. United Nations Convention on the Law of the Sea c. Arms Trade d. Missile Technology Control Regime e. Non-Proliferation Treaty			
6.	Environment	a. Environmental Issues effecting security b. Extreme Climate Events c. Natural Resources availability & Deficiencies d. Oil & Gas Dependencies			
7.	Military	a. Capacity & Capability of Armed Forces b. Civil –Mil Relations c. Military Alliances d. Military Eqpt dependencies e. Military Bases in Region			



EXTERNAL ENVIRONMENT SCAN (CONT)

DRIVING FORCES

“The driving forces are identified from the opportunities and threats and derived from analysis They are the critical considerations that have a direct influence on the projected future developments in the external environment.”

EXTERNAL ENVIRONMENT SCAN (CONT)

ECONOMY



Flag OF European Union

Source: <https://european-union.europa>.



Flag of Russia

Source: <https://www.britannica.com>

- ❖ **Europe relies largely on Russia for energy supply**
- ❖ **40 per cent of the gas in Europe amounting to US\$108 billion was imported from Russia in 2021. This reduced to 26 per cent as at June 2022**
- ❖ **Russia-Ukraine War threatens gas supply to Europe**
- ❖ **Europe is cutting down 90 per cent of oil and 66 per cent of gas imports from Russia by the end of 2022**
- ❖ **Conflict has generated a global energy deficit and shift in European energy policy**

EXTERNAL ENVIRONMENT SCAN (CONT)

ECONOMY (CONT)



Signing of MoU on Nigeria – Algeria Gas Pipeline Project



Signing of MoU on Nigeria – Morocco Gas Pipeline Project

- ❖ **Nigeria produces over 3 million cubic feet of natural gas annually**
- ❖ **European External Strategy targets Nigeria and 3 other countries to bridge energy deficit**
- ❖ **The proposed Trans-Saharan Gas Pipeline and Nigeria - Morocco Gas Pipeline projects offer opportunities for Nigeria gas supply into Europe**
- ❖ **Although there is effort at diversifying, global energy deficit presents an opportunity to boost the economy of Nigeria towards defence transformation**

Global energy deficit is a driving force for defence transformation and national security in Nigeria by 2035

Source: <https://euagenda.eu>

EXTERNAL ENVIRONMENT SCAN (CONT)

MILITARY



Picture Showing Signing of Nigeria-Türkiye Agreement

Source: <https://www.channelstv.com>



Picture Showing HMoD Signing Defence Agreement with Russia

Source: <https://punchng.com>

❖ **Several countries have defence agreement with Nigeria**

✓ **Türkiye – Nigeria Military Training Agreement signed April 2018**

✓ **China – Nigeria protocol on China Provision of Gratis Military Assistance signed December 2020**

✓ **Russia – Nigeria Military Technical Cooperation Agreement signed August 2021**

❖ **These agreements among others provide opportunities to boost defence transformation in Nigeria**

Defence agreement is a driving force in Nigeria's defence transformation for enhanced national security by 2035



EXTERNAL ENVIRONMENT SCAN (CONT)

Summary of Driving Forces from External Environmental Scan

Serial	Driving Forces	Remarks
(a)	(b)	(c)
1.	Insecurity in the Sahel Region	
2.	Defence Agreement	
3.	Global Energy Deficit	
4.	Collaboration on Defence Satellite Technology	
5.	Emerging Technologies	
6.	Overdependence on Foreign Technology	
7.	Climate Change	



OUTLINE FRAMEWORK OF NDC **NET ASSESSMENT (CONT)**

SCENARIO BUILDING PROCESS

SCENARIO BUILDING PROCESS

- ❖ **Ranking of Key Decision Factors and Driving Forces**
- ❖ **Generation of Impact – Uncertainty Matrix**
- ❖ **Identification of Critical Drivers**
- ❖ **Scenario Generation Matrix**



SCENARIO BUILDING PROCESS (CONT)

RANKING OF KEY DECISION FACTORS AND DRIVING FORCES

RANKING OF KEY DECISION FACTORS **AND DRIVING FORCES**

❖ **Key Decision Factors and Driving Forces Identified in the Environment Scan are prioritized and ranked either Low, Medium or High**

❖ **Ranking criteria:**

✓ **Strength of impact and degree of uncertainty of the Key Decision Factor on the end state**

✓ **Strength of impact and degree of uncertainty of the Driving Forces on the end state**

STRENGTH OF IMPACT AND DEGREE OF UNCERTAINTY



**High Strength of Impact and
Low Degree of Uncertainty**



**Low Strength of Impact and Low
Degree of Uncertainty**



**High Strength of Impact and High
Degree of Uncertainty**



SCENARIO BUILDING PROCESS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035 (CONT)

RANKING OF KEY DECISION FACTORS

Serial	Key Decision Factors	Impact	Uncertainty
(a)	(b)	(c)	(d)
1.	Political Will	HIGH	HIGH
2.	Adequate Funding	HIGH	HIGH
3.	Defence R&D Capability	HIGH	HIGH
4.	Defence Production Capability	HIGH	HIGH
5.	Growing Economy	HIGH	HIGH
6.	Organisational Structure of MOD	HIGH	HIGH
7.	Defence Space Technology	HIGH	HIGH
8.	Emerging Technologies	HIGH	HIGH
9.	Insecurity in Nigeria	HIGH	HIGH



SCENARIO BUILDING PROCESS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035 (CONT)

RANKING OF DRIVING FORCES

Serial	Driving Forces	Impact	Uncertainty
(a)	(b)	(c)	(d)
1.	Insecurity in the Sahel Region	HIGH	HIGH
2.	Defence Agreement	HIGH	HIGH
3.	Global Energy Deficit	HIGH	HIGH
4.	Collaboration on Defence Satellite Technology	HIGH	HIGH
5.	Emerging Technologies	HIGH	HIGH
6.	Overdependence on Foreign Technology	HIGH	HIGH
7.	Climate Change	HIGH	HIGH



RANKING OF KEY DECISION FACTORS AND DRIVING FORCES (CONT)

PANDEMICS AND NATIONAL SECURITY: IMPLICATIONS FOR THE NIGERIAN ARMY BY THE YEAR 2030

Ser	Key Decision Factor			Driving Force		
	Factor	Impact	Uncertainty	Force	Impact	Uncertainty
(a)	(b)	(c)	(d)	(e)	(f)	(g)
1.	Border Management	High	Medium	External Collaborations	High	High
2.	NA Health Infrastructure	High	High	Global Economic Meltdown	High	High
3.	Public Health Specialists	High	High	External Funding	High	High
4.	4IR Technologies	High	High	Technology Transfer	High	Medium
5.	Leadership	High	Medium	Illegal Migration	Medium	Medium
6.	Research and Development	High	High	Climate Change	High	Low
7.	Budgetary Constraint	High	High	Multinational Pandemic Response Plan	Medium	High
8.	Manpower Constraint	Medium	Low	Oil Price	High	High



SCENARIO BUILDING PROCESS (CONT)

GENERATION OF IMPACT – UNCERTAINTY MATRIX



GENERATION OF IMPACT – UNCERTAINTY MATRIX

❖ Quadrant 1 – KDFs and DFs are classified as Drivers of the scenarios used in scenario building

I M P A C T	HIGH	HIGH IMPACT/ LOW UNCERTAINTY	HIGH IMPACT/ MEDIUM UNCERTAINTY	HIGH IMPACT/ HIGH UNCERTAINTY 1
	MEDIUM	MEDIUM IMPACT/ LOW UNCERTAINTY	MEDIUM IMPACT/ MEDIUM UNCERTAINTY	MEDIUM IMPACT/ HIGH UNCERTAINTY
	LOW	LOW IMPACT/ LOW UNCERTAINTY	LOW IMPACT/ MEDIUM UNCERTAINTY	LOW IMPACT/ HIGH UNCERTAINTY
		LOW	MEDIUM	HIGH
UNCERTAINTY				



GENERATION OF IMPACT – UNCERTAINTY MATRIX (CONT)

❖ **Quadrant 2 – KDFs and DFs will impact outcomes and can be near-accurately forecasted**

I M P A C T	HIGH	HIGH IMPACT/ LOW UNCERTAINTY 2	HIGH IMPACT/ MEDIUM UNCERTAINTY	HIGH IMPACT/ HIGH UNCERTAINTY 1
	MEDIUM	MEDIUM IMPACT/ LOW UNCERTAINTY	MEDIUM IMPACT/ MEDIUM UNCERTAINTY	MEDIUM IMPACT/ HIGH UNCERTAINTY
	LOW	LOW IMPACT/ LOW UNCERTAINTY	LOW IMPACT/ MEDIUM UNCERTAINTY	LOW IMPACT/ HIGH UNCERTAINTY
		LOW	MEDIUM	HIGH
UNCERTAINTY				



GENERATION OF IMPACT – UNCERTAINTY MATRIX (CONT)

❖ **Quadrant 3 – KDFs and DFs have little or no impact on future outcomes and could be ignored**

I M P A C T	HIGH	HIGH IMPACT/ LOW UNCERTAINTY 2	HIGH IMPACT/ MEDIUM UNCERTAINTY	HIGH IMPACT/ HIGH UNCERTAINTY 1
	MEDIUM	MEDIUM IMPACT/ LOW UNCERTAINTY	MEDIUM IMPACT/ MEDIUM UNCERTAINTY	MEDIUM IMPACT/ HIGH UNCERTAINTY
	LOW	LOW IMPACT/ LOW UNCERTAINTY 3	LOW IMPACT/ MEDIUM UNCERTAINTY	LOW IMPACT/ HIGH UNCERTAINTY
		LOW	MEDIUM	HIGH
UNCERTAINTY				



GENERATION OF IMPACT – UNCERTAINTY MATRIX (CONT)

❖ **Quadrant 4 – KDFs and DFs have minimal impact on future outcomes and could also be ignored**

I M P A C T	HIGH	HIGH IMPACT/ LOW UNCERTAINTY 2	HIGH IMPACT/ MEDIUM UNCERTAINTY	HIGH IMPACT/ HIGH UNCERTAINTY 1
	MEDIUM	MEDIUM IMPACT/ LOW UNCERTAINTY	MEDIUM IMPACT/ MEDIUM UNCERTAINTY	MEDIUM IMPACT/ HIGH UNCERTAINTY
	LOW	LOW IMPACT/ LOW UNCERTAINTY 3	LOW IMPACT/ MEDIUM UNCERTAINTY	LOW IMPACT/ HIGH UNCERTAINTY 4
		LOW	MEDIUM	HIGH
UNCERTAINTY				



GENERATION OF IMPACT – UNCERTAINTY MATRIX (CONT)

IMPACT



HIGH	❖ Climate Change ❖ Manpower Constraint	❖ Technology Transfer ❖ Leadership ❖ Border Management	❖ NA Health Infrastructure ❖ Budgetary Constraint ❖ Public Health Specialists ❖ R&D ❖ Global Economic Meltdown ❖ External Collaborations ❖ External Funding
MEDIUM		Illegal Migration	❖ Multinational Pandemic Response Plan
LOW			
	LOW	MEDIUM	HIGH

UNCERTAINTY



- Key Decision Factors



- Driving Forces



SCENARIO BUILDING PROCESS (CONT)

IDENTIFICATION OF CRITICAL DRIVERS

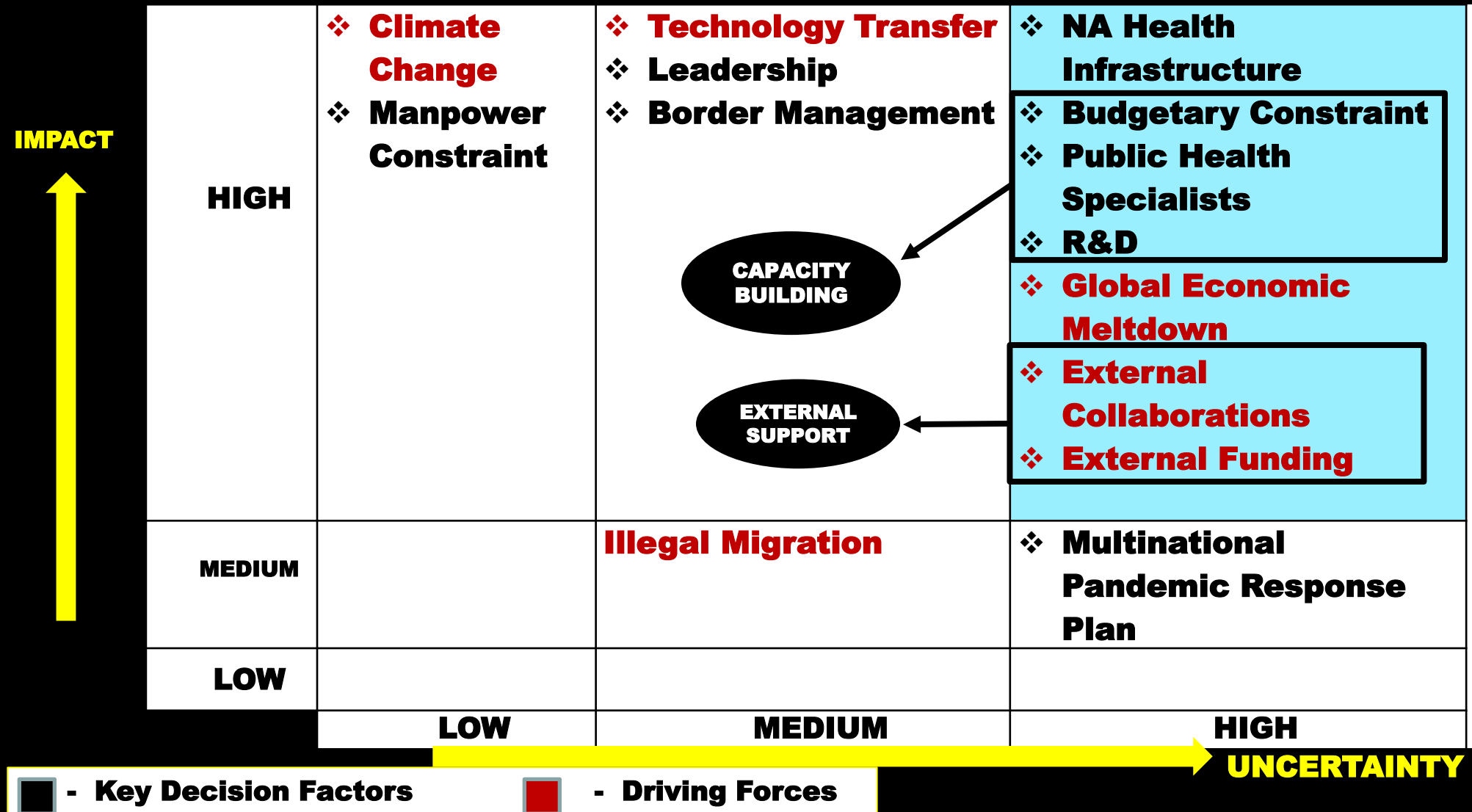
IDENTIFICATION OF CRITICAL DRIVERS

❖ Identify 2 different critical drivers to form the axes along which eventual scenarios will diverge. The 2 methods used in NDC are as follows:

- ✓ Aggregation of a group of KDFs along a common domain to form Critical Driver 1 and aggregation of a group of DFs to form Critical Driver 2**
- ✓ Aggregation of a combination of KDFs and DFs along 2 domains to form 2 Critical Drivers**



IDENTIFICATION OF CRITICAL DRIVERS (CONT)





SCENARIO BUILDING PROCESS (CONT)

SCENARIO GENERATION MATRIX

TYPES OF SCENARIO BUILDING

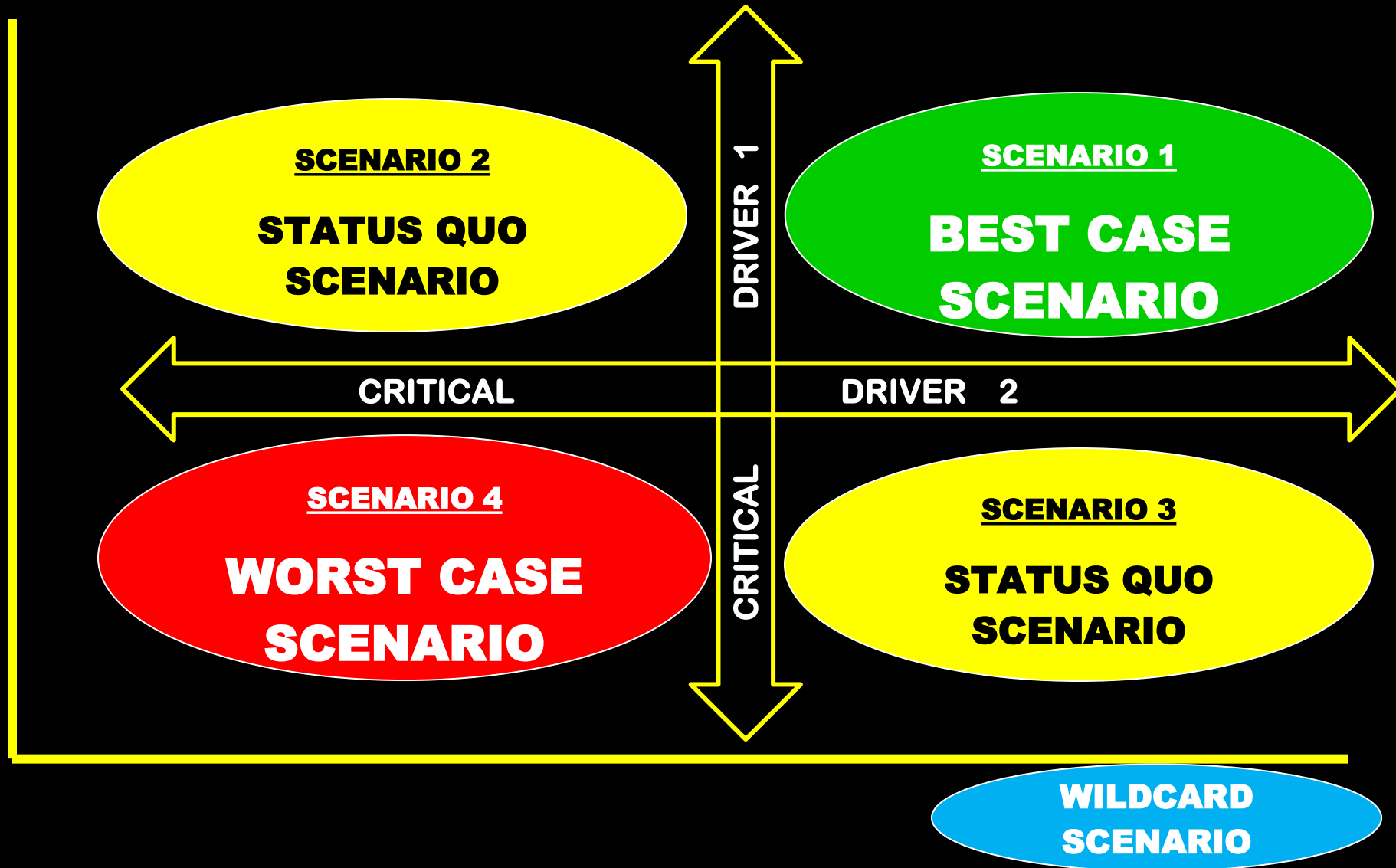
❖ **Future Backward** In this form of Scenario Building, several significant futures are selected and attempts are then made to discover the paths that lead to them

❖ **Future Forward** The Future Forward approach is based on an analysis of present forces and their likely evolution into several sets of plausible futures are projected

SCENARIO GENERATION MATRIX

- ❖ **The NDC adopts the 4 Quadrants Matrix or the 2 x 2 Scenario Generation Matrix**
- ❖ **Adopts 3 distinct scenarios as follows:**
 - ✓ **Best case scenario (positive and positive)**
 - ✓ **Status quo scenario (negative and positive or positive and negative)**
 - ✓ **Worst case scenario (negative and negative)**
- ❖ **However, a fourth scenario which is a Wildcard (extreme positive or negative) could be developed if deemed necessary**

2 x 2 SCENARIO GENERATION MATRIX

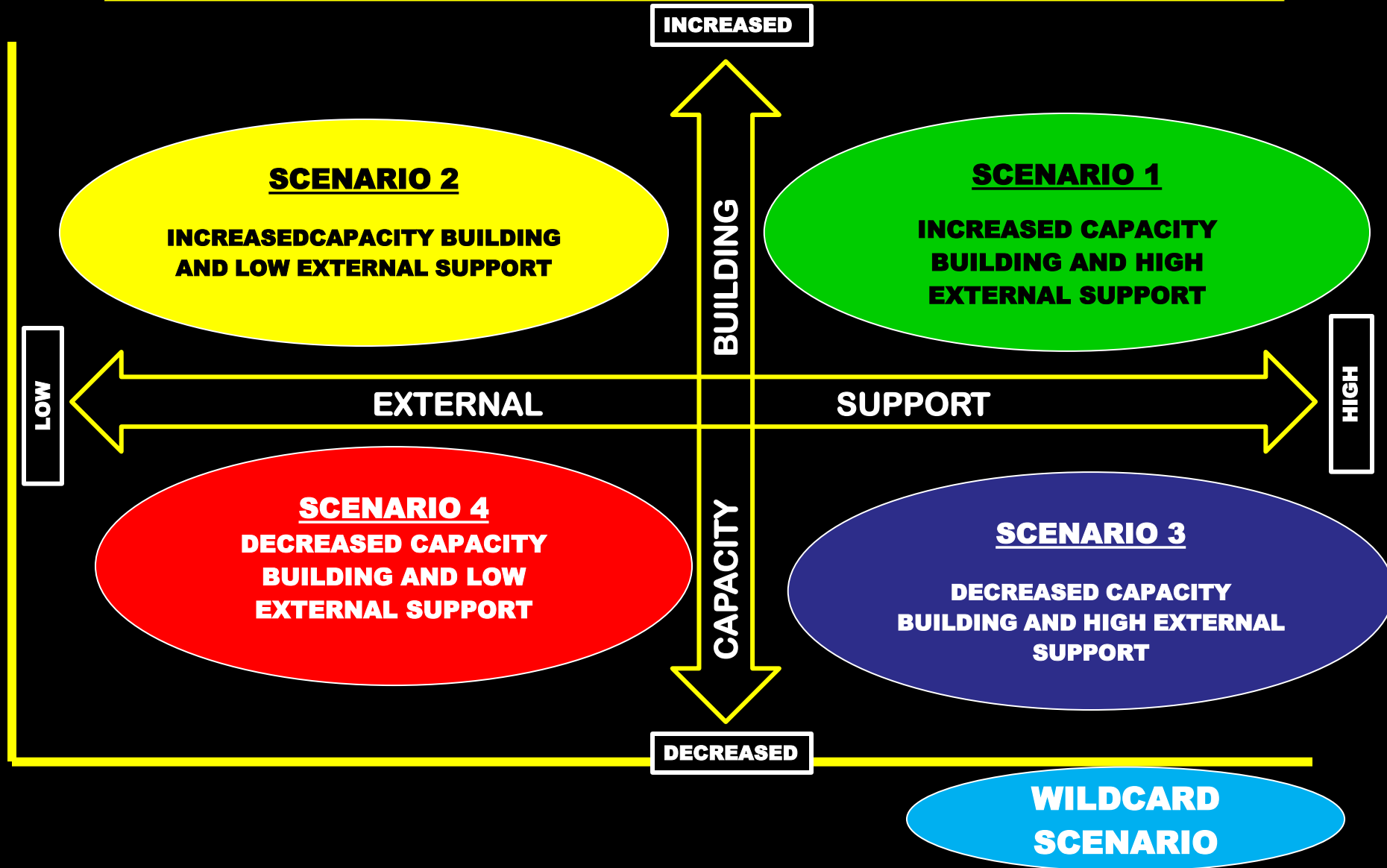


WILD CARD SCENARIO



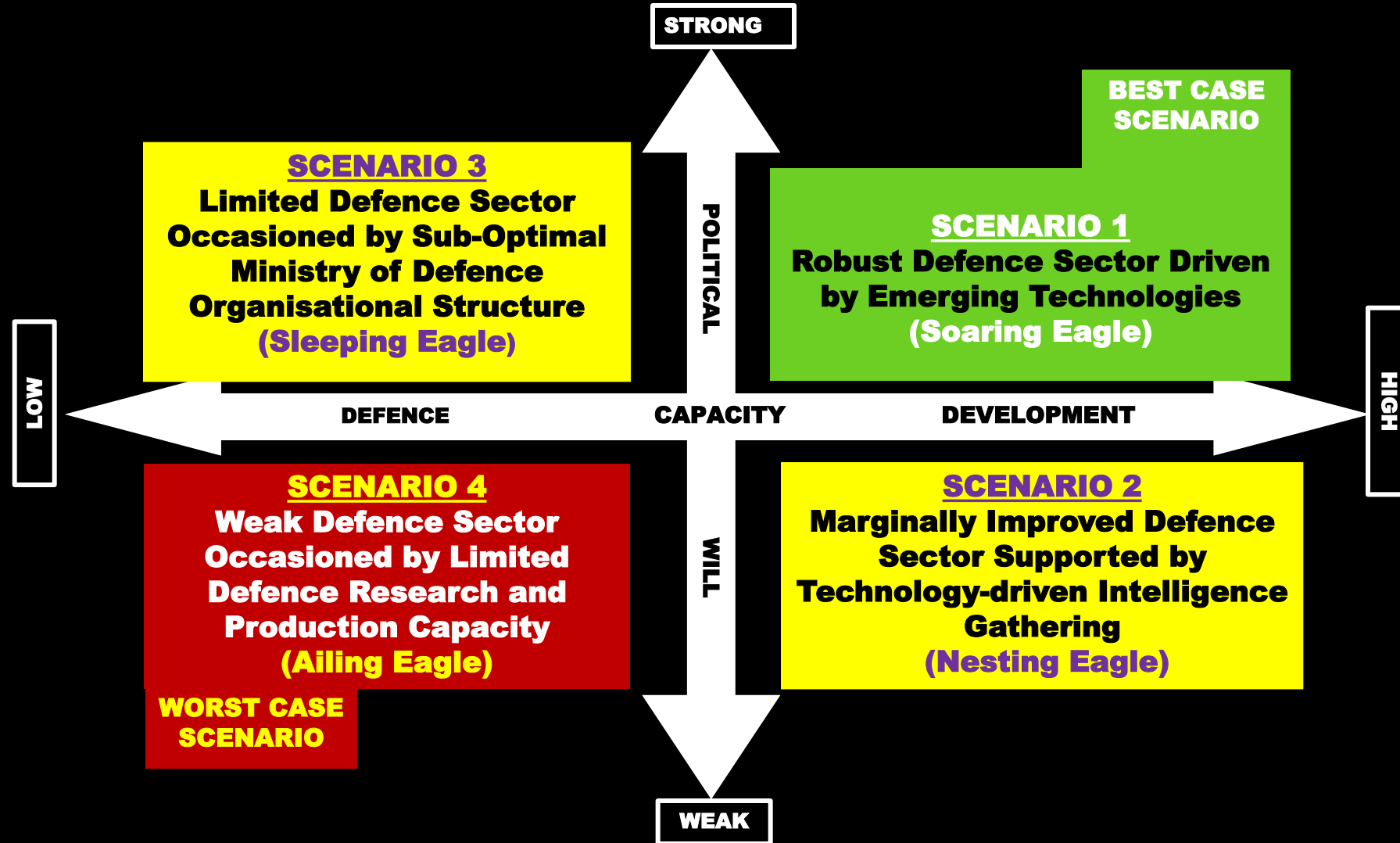


2 x 2 SCENARIO GENERATION MATRIX





SCENARIO GENERATION MATRIX FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035





SCENARIO BUILDING PROCESS (CONT)

PLAUSIBLE SCENARIOS

SCENARIO WRITING

- ❖ Plausibility: The selected scenario must be realistic and probable**
- ❖ Differentiation: The scenario must be structurally different and not simple variations**

SCENARIO WRITING (CONT)

❖ Highly Descriptive Title: Choose a memorable name for each scenario which should portray the essential logic describing it

- ✓ Soaring Eagle – Best Case Scenario**
- ✓ Nesting Eagle – Status Quo Scenario**
- ✓ Ailing Eagle – Worst Case Scenario**

SCENARIO WRITING (CONT)

❖ **End State:** The state of affairs that is the final outcome of the scenario, in the specified time dimension

❖ **Desirability:** The desirability, or otherwise, of the scenario happening

SCENARIO WRITING (CONT)

❖ **Description of Scenario:** In describing scenarios, the following points are to be noted:

- ✓ **Narratives should be interesting, readable, compelling, logical and plausible**
- ✓ **Identify the events, trends, attitudes and influences in various time dimensions that are pivotal in shaping the future described**
- ✓ **These may also be referred to as early and late indicators**

SCENARIO WRITING (CONT)

❖ Description of Scenario (Cont)

- ✓ The scenario should take cognizance of the interplay of the high impact, high uncertainty KDFs and DFs**
- ✓ Scenario must include the essential pre-conditions for the scenario to emerge**
- ✓ Scenario should be written in line with the aim**



SCENARIO WRITING (CONT)

Likelihood: The likelihood or unlikelihood of the scenario occurring with justifications



PLAUSIBLE SCENARIOS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035

SCENARIO 1

**Robust Defence Sector Driven by Emerging
Technologies
(Soaring Eagle)**

SCENARIO 1 - ROBUST DEFENCE SECTOR DRIVEN BY EMERGING TECHNOLOGIES

Soaring Eagle



- ❖ **The economy of Nigeria is projected to continue its growth leveraging political will amidst global energy deficit amongst other economic drivers to adequately fund defence sector and combat insecurity**
- ❖ **Defence agreements might be exploited to improve indigenous defence production, R&D and space technology, while integrating emerging technologies into future weapons and systems of the AFN under an optimally organised MoD**
- ❖ **Defence sector would be technology driven and fully able to conduct 5GW in addressing current and future threats while preparing to embrace the 6GW by 2035**

Source: <https://www.nicepng.com>



PLAUSIBLE SCENARIOS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035 (CONT)

Description

**A defence sector that is robust
in its posture and driven by
emerging technologies**

End State

**Nigeria is a regional military
power in the employment of
emerging technologies
by 2035**

Scenario 1

**Robust defence sector driven
by emerging technologies**

Likelihood

Least likely

Desirability

Most desirable



PLAUSIBLE SCENARIOS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035 (CONT)

SCENARIO 2

**Marginally Improved Defence Sector Supported by
Technology-driven Intelligence Gathering
(Nesting Eagle)**

SCENARIO 2 - MARGINALLY IMPROVED DEFENCE SECTOR SUPPORTED BY TECHNOLOGY-DRIVEN INTELLIGENCE GATHERING

Nesting Eagle



- ❖ It is projected that insecurity in the Sahel might continue to affect Nigeria due to spread of violent extremism, illicit flow of weapons, porous borders and negative effects of climate change
- ❖ However, political will and an opportunity to leverage a global energy deficit among other efforts would stimulate the economy providing adequate funding for deployment of enabling infrastructure for intelligence gathering within the same period
- ❖ Employment of emerging technologies might not be prioritised due to competing demand for resources
- ❖ Intelligence gathering capability of the AFN through space efforts would increase but other critical integrated areas of defence transformation would be sub-optimal causing Nigeria to still grapple with 4GW by 2035

Source: <https://unsplash.com>



PLAUSIBLE SCENARIOS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035 (CONT)

Description

Nigeria has a defence sector that has improved marginally leveraging space technology to enhance intelligence gathering

End State

A slightly improved defence sector with increased intelligence gathering capability by 2035

Scenario 2

Marginally Improved defence sector supported by technology-driven intelligence gathering

Likelihood

Likely

Desirability

Undesirable



PLAUSIBLE SCENARIOS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035 (CONT)

SCENARIO 3

**Limited Defence Sector Occasioned by
Sub-Optimal Ministry of Defence
Organisational Structure
(Sleeping Eagle)**

SCENARIO 3 – LIMITED DEFENCE SECTOR OCCASIONED BY SUB-OPTIMAL MINISTRY OF DEFENCE ORGANISATIONAL STRUCTURE

Sleeping Eagle



- ❖ Insecurity in the Sahel region is projected to continue, with porous borders creating corridors for movements of terrorists and illicit arms into Nigeria exacerbated by the negative effects of climate change
- ❖ This would likely result in short-medium term procurement of foreign military hardware through adequate funding to combat threats. However, the ability of the defence sector to effectively employ a joint approach to address contemporary threats in the long term could likely be undermined by a sub-optimal organisational structure of MoD which might largely remain unchanged
- ❖ The MoD might struggle to drive critical areas of defence transformation such as research and production, space and cyber needed for the AFN to fully embrace 5GW by 2035

Source: <https://www.pinterest.com>



PLAUSIBLE SCENARIOS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035 (CONT)

Description

Nigeria has a defence sector that is limited in capacity to carry out its constitutional roles due to sub-optimal MoD organisational structure

End State

A limited defence sector with sub-optimal MoD organisational structure by 2035

Scenario 3

Limited defence sector occasioned by sub-optimal MoD organisational structure

Likelihood

Likely

Desirability

Undesirable



PLAUSIBLE SCENARIOS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035 (CONT)

SCENARIO 4

**Weak Defence Sector Occasioned by Limited Defence
Research and Production Capacity
(Ailing Eagle)**

SCENARIO 4 - WEAK DEFENCE SECTOR OCCASIONED BY LIMITED DEFENCE RESEARCH AND PRODUCTION CAPACITY

Ailing Eagle



- ❖ It is projected that insecurity in the Sahel will continue to affect Nigeria due to spread of terrorism, proliferation of small arms and light weapons, porous borders and negative effects of climate change
- ❖ More military hardware would be required by the AFN leading to increased foreign procurement of armaments through adequate funding. This would lead to less resources available to catalyse indigenous defence research and production as well as employment of emerging technologies
- ❖ There would still be marginal improvement in space-based intelligence gathering. However, other critical integrated areas of defence sector would be sub-optimal due to competing demands for resources
- ❖ It is envisaged that the defence sector would struggle to keep up with the 4GW by 2035

Source: <http://www.whitewolfpack.com>



PLAUSIBLE SCENARIOS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035 (CONT)

Description

Nigeria has a defence sector with limited ability to meet contemporary threats due to over-dependence on foreign countries for military hardware

End State

A weak defence sector with limited defence research and production capacity by 2035

Scenario 4

**Weak Defence Sector Occasioned
by Limited Defence Research and
Production Capacity**

Likelihood

Most Likely

Desirability

Least desirable



OUTLINE FRAMEWORK OF NDC **NET ASSESSMENT (CONT)**

SCENARIO-BASED STRATEGIES

SCENARIO-BASED STRATEGIES

❖ **Scenario-based strategies are to:**

- ✓ **Be proposed for each of the scenarios described**
- ✓ **Capture the Ends, Ways and Means**
- ✓ **Pass the Suitability, Acceptability, Feasibility and Ethics and Values Test**

SCENARIO-BASED STRATEGIES

❖ **Scenario-based strategies are to:**

- ✓ **Exploit Strengths**
- ✓ **Reduce Weaknesses**
- ✓ **Exploit Opportunities**
- ✓ **Defeat or Deter Threats**



PLAUSIBLE SCENARIOS FOR DEFENCE TRANSFORMATION AND NATIONAL SECURITY IN NIGERIA BY 2035 (CONT)

EMPLOYMENT OF EMERGING TECHNOLOGIES IN THE DEFENCE SECTOR

SCENARIO 1

Robust Defence Sector Driven by Emerging Technologies

ENDS

To transform Nigeria into a regional military power with a defence sector capable of effectively utilising offensive and defensive emerging technologies for enhanced national security

WAYS

FGN could consider adopting a proposed emerging technologies framework 2023 – 2035 for the defence sector. The MoD in collaboration with the Ministries of Science Technology and Innovation as well as Communication and Digital Economy could facilitate the deployment of enabling infrastructure and development of capacity for indigenous defence technology solutions

MEANS

Funding could be initially sourced from special intervention from the FGN and subsequently from budgetary allocations of the MoD. Strategy could be initiated by the Third Quarter of 2023 and emerging technologies fully employed by 2035

OUTLINE OF THE PROPOSED EMERGING TECHNOLOGIES FRAMEWORK FOR THE DEFENCE SECTOR 2023 – 2035



PROPOSED EMERGING TECHNOLOGIES FRAMEWORK
FOR THE DEFENCE SECTOR 2023 – 2035



BY

PARTICIPANTS OF COURSE 30
NATIONAL DEFENCE COLLEGE
NIGERIA

AUGUST 2022

Short - Term (0-5 Years)

- ❖ **MoD to collaborate with FMoST&I and FMoC&DE for an integrated strategic approach to employing emerging technologies**
- ❖ **Procurement of off-the-shelf emerging technology solutions**
- ❖ **Harness private sector ingenuity for defence innovation initiatives**
- ❖ **Establishment of a Defence Cyber Command (DCC)**
- ❖ **Formulation of a defence science technology and innovations strategy**
- ❖ **Encourage academia research in critical emerging technologies with military applications**
- ❖ **Strategic partnership with selected countries on emerging technologies**



OUTLINE OF THE PROPOSED EMERGING TECHNOLOGIES FRAMEWORK FOR THE DEFENCE SECTOR 2023 – 2035 (CONT)

Medium Term (5-10 Years)

- ❖ **Capacity building for the AFN in emerging technologies**
- ❖ **Establishment of a Defence Information Systems Network**
- ❖ **Formulation of a National Cyber Defence Plan**
- ❖ **Review of the National Cybersecurity Policy and Strategy 2021**
- ❖ **Increased partnership with professional bodies for exploiting emerging technologies**

Long-Term (Above 10 Years)

- ❖ **Investment in indigenous capacity development for emerging technologies in defence**
- ❖ **Production and deployment of enabling infrastructure for emerging technologies**
- ❖ **Development of indigenous defence technology solutions**
- ❖ **Establishment of Defence Centre of Excellence on Artificial Intelligence and Robotics**

SCENARIO-BASED STRATEGIES

❖ SAFE Test:

- ✓ Suitability: What is the level of harmony between strategy and objective?**
- ✓ Acceptability: Is the strategy agreeable to stakeholders?**
- ✓ Feasibility: Are there means to execute the strategy?**
- ✓ Ethics and Values: Is the strategy legal or ethical or value laden?**



OUTLINE FRAMEWORK OF NDC **NET ASSESSMENT (CONT)**

CONCLUSION



CONCLUSION

The conclusion gives a summary of major deductions



OUTLINE FRAMEWORK OF NDC **NET ASSESSMENT (CONT)**

RECOMMENDATIONS

RECOMMENDATIONS

S - Specific

M - Measurable

A - Achievable

R - Realistic

T - Time-bound

Who, What and When

LEARNING OBJECTIVES ACHIEVED?

- ❖ **Concept of Net Assessment**
- ❖ **Brief History of Net Assessment**
- ❖ **Objectives of Net Assessment**
- ❖ **Types of Net Assessment**
- ❖ **Methods Used in Net Assessment**
- ❖ **NDC Format of Net Assessment**



CONCLUSION



FURTHER READINGS

National Defence College of Nigeria Manual of Research and Strategic Writing, Pages 48 to 54

India College of Defence Managements India (2019). Senior Defence Management Course. Vol.1. Pages 87 to 160



**THANK YOU FOR YOUR
RAPT ATTENTION**



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INTERACTIVE SESSION

