



Rijksdienst voor Ondernemend Nederland

### Draft

# Nigerian Circular Economy Program (NCEP) Roadmap Framework

For Nigeria's Transition to Green Economy: Linking Circular Economy and Natural Capital for Public Private Partnership (PPP) Investments

African Green Growth & Development Forum (AGDF) & Partners



# Contents

1	Introduction	3
2	The NCEP Theory of Change	3
3	<b>The Nigerian Circular Economy Roadmap (NCERM) Framework</b> 3.1 Phased activities	<b>9</b> 10
	3.2 NCERM framework Strategic Objectives/Pillars	20
4	Conclusion	59

# List of Tables

1	Linking Sectoral Activities to Outcomes	8
2	NCEP Strategy Roadmap Framework (Cross-cutting Issues)	12
3	Governance and Operating Environment objectives of the NCERM	
	Framework	.23
4	Circular Economy & Natural Capital Businesses Opportunities &	
	Finance objectives of the NCERM Framework	.27
5	Circular Economy & Natural Capital Technology & Infrastructure	
	objectives of the NCERM Framework	.36
6	Communication Strategy & Education for Circular Economy/Natural	
	Capital objectives of the NCERM Framework	.43
7	National Natural Capital Strategy (NNCS) objectives of the NCERM	
	Framework	.47
8	MRV for Circular & Natural Capital Strategic Objectives of the	
	NCERM Framework	.54

# List of Figures

1	Theory of Change (ToC) for transiting Nigeria from a linear to a more	
	circular economic model7	'

# 1 Introduction

The Nigerian Circular Economy Program (NCEP) is aimed at developing a circular economy road map that will link the goal of transitioning from a linear economy to a more circular one. The chief output of NCEP is the development of the Nigeria Circular Economy Roadmap (NCERM) which will detail our activities and show the time frame for achieving the transition to a circular economy given the resources available and actual/potential capacity. The NCERM will be a useful tool for communicating plans to stakeholders and tracking progress against the set objectives while describing corresponding actions to achieve circularity by 2050. The features of NCERM will include a National Policy on Circular Economy (NPCE), a National Circular Economy Investment Plan (NCEIP), a Circular Economy Legislative Plan (CELP), and a National Natural Capital Strategy (NNCS). The NCEIP will comprise a Circular Economy Business Plan (CEBP) that will promote Circular Economy Finance, Projects and Technologies (CEPs, CEF, and CETs). As part of the process of achieving this vision, a Scoping Report has been produced which did a broad scoop of the landscape in Nigeria with particular emphasis on a few prioritized sectors of the economy, namely: Agriculture, Forestry and other land Use (AFOLU), Services, Energy and IPPU. Presented in the following pages is a Theory Of Change (ToC) for the NCEP to guide the transition process and a framework to assist in the development of the NCERM.

# 2 The NCEP Theory of Change

A Theory of Change (ToC) of a project describes why change is needed and how it will happen. It involves identifying how the current situation related to an identified problem could change, and how that change can come about through a project (RVO, 2017). The ToC will help in planning and designing interventions, and also monitoring a project. A Theory of Change (ToC) was developed for the NCEP to illustrate the country's strategy to achieving the vision of transiting Nigeria from a linear to a circular economy by 2050. This included a process flow of various components of the roadmap showing their interrelationships, dependencies assumptions and expected outcomes and outputs. The overall objectives are that this program will enhance the nation's natural capital assets through a reduction in the pressure on the environment, it will stimulate innovation, boost economic growth while enhancing livelihoods and wellbeing.

The main components of the ToC are described briefly below:

- a. Problem Statement (Context & Barriers): The current social and environmental context in Nigeria is highlighted here. Nigeria is a signatory to several environmental treaties and recently committed to cut GHG emissions by 50% by the year 2030. However, the emissions still continue unabated because the fact that the current production and consumption patterns are mostly linear. This linear model further puts a strain on the nation's natural capital which has not been clearly accounted for and valued as a part of the nation's GDP. Furthermore, the nation is experiencing rapid urbanization and high population growth leading to an exponential increase in waste generation. There are however elements of circular economic activities mostly within the informal sector that could serve as entry points in developing a NCEP in Nigeria. Nigeria has a high human capacity, especially the youth population, a vibrant private sector and an increasingly attractive business environment. Despite all these strengths, the nation has clearly identified risks such as the limited resources, policy gaps, and the inadequate political will and system continuity that has been the bane of such programs in the past. The problem statement is categorized into the Project Context and The Context outlines the baseline status concerning the Barriers. socio-economic and environmental developments along with current risks and strengths. The identified barriers that could hinder the attainment of the objective include those related to the effectiveness of policies and existing regulations, the volatility of the financial market, current widespread insecurity and safety challenges, and the lack of awareness of green and circular businesses among the stakeholders, just to mention a few.
- b. **Objectives:** In order to achieve this goal of transiting Nigeria to a circular economy, some sectors of the economy have been prioritized for action. The policy context within these priority sectors would be appraised and opportunities within the current legislative/policy and institutional frameworks for the adoption a Circular Economy highlighted. Policy enablers that exist for Public Private Partnerships (PPP) would be analyzed for investments opportunities. The process would also explore the interconnectedness of Circular Economy & Natural Capital with the aim of identifying how Natural Capital Accounting could help in the implementation of a Circular Economy. The current stakeholders/ business clusters working around circular economy concepts would be leveraged during the transitioning process. The prevalent activities and projects linking natural capital and

circular economy within Nigeria's public and private sectors would also be highlighted. There would also be education and awareness creation campaigns on the circular economy across different sectors of the Nigerian society while developing the required manpower and technical expertise required for a national circular economy transition. Processes for wastes and energy efficiency in all priority sectors would be probed and recommendations made. Last but not the least, indicators would be proposed to monitor progress towards circularity.

- c. Implementation (Activities & Outputs): After a proper analysis and understanding of the current status and challenges that will be involved in the transition process, stakeholders have been identified across the different segments of society based on the critical activities that would be required to meet the transition objectives. They include representatives from the government Ministries, Departments and Agencies (MDA's), policy makers, the private sector, international and local organizations and members of the general public, especially those from the informal sector that are currently carrying out activities related to NC and CE. Some of the activities that could be undertaken were enumerated including the expected outputs and outcomes. These processes are a combination of generic activities such as the formation of a national circular economy stakeholders' forum (which is envisaged to have a country-wide coverage and will include members from various sectors and fields), baseline assessments and surveys, Scoping Report and its recommendations, capacity building measures, and specific sector-based activities. The sector-based activities/pathways for the achievement of the identified outputs were further enumerated. These outputs are tangible evidence or short-term results of the progress made as the activities are being implemented and will inform the outcomes of the NCEP. The outputs have been categorized into Knowledge and Innovation materials, Policy and Governance outputs, applications, information, communication and education (IEC) strategy and products, and capacity building outputs.
- d. Evaluation And Reflection (Outcomes): Outcomes are the intangible, strategic, mid to long-term benefits of the activities that will be carried out. Though not seen immediately after an activity, they are reasonably linked to the activities A review of the outputs and outcomes can be carried out to draw out lessons and feed back into the activities as gaps are identified and/or new opportunities arise.

This Theory of Change (ToC) has been designed to highlight the need for a change

in Nigeria's current trajectory of a linear economy, why circularity is desired and the pathway to achieving change through a transition process. The ToC is presented in Figure 1 below.

Figure 1: Theory of Change (ToC) for transiting Nigeria from a linear to a more circular economic model



A further sector-based breakdown of the activities highlighted has been mapped in Table 1 in order to link them to the expected short and long-term goals (outputs and outcomes) as broadly categorized.

Outcomes	Knowledge & Innovation	Applications	Policy & Governance	Capacity building
Sector/Activities IPPU				
Explore sustainable measures for the building	Х	Х	Х	Х
industry such as bamboo, wood, cement				
alternatives, water sachet waste for flooring				
etc.	• /			
Implementation of sustainable waste	Х	Х	Х	Х
management processes in the textile/tabric				
sector.				
Energy	N	N	X	
Undertake energy audits in key sectors of	Х	Х	Х	X
the economy to serve as baseline information				
and subsequently will become part of energy				
Development of operate from	v	v	v	
renewable resources etc.	~	~	~	^
Provision of funding and technical expertise to	Х			Х
enhance national/regional grid infrastructure				
to accommodate distribution of energy				
generated from renewables				
Promotion and incentivization of green	Х		Х	Х
transport initiatives				
Services	• /			
Establishment of waste water treatment	Х	Х	Х	Х
schemes				
Establishment of specialized or 'niche' waste		Х	Х	Х
management businesses e.g., medical waste				
disposal.			X	
Creation and implementation of sector specific			Х	Х
policies such as e-waste, textile, scrap metal				
etc.				
Agriculture	v		v	
notion with a focus on urban areas	Λ		Λ	Λ
Development and implementation of food		v	v	
waste policies		Λ	Λ	Λ
Promotion of Sustainable Food and		x	X	
Agriculture (SFA) practices		~	Λ	
Development of Climate Smart Agricultural	X			
(CSA) Products				~
(001) 1104400				

Table 1: Linking Sectoral Activities to Outcomes.

**Note: X** signifies the presence of a particular 'Outcome' that will take place as a result of the highlighted Sector's activity while a blank cell signifies the absence of that particular 'Outcome' in that Sector.

It is clear that the key drivers of a circular economy transition spanning across all highlighted sectors are activities that will inevitably result in policy and governance changes/redirection as well as capacity building outputs. Relevant policies and regulations would need to be reviewed building on existing relevant ones and/or new ones developed and implemented, Capacity building is also vital to building the required knowledge base, skills and manpower across different sectors for various aspects of the transition. An annual national summit for NC & CE initiatives and innovation is also proposed to drive knowledge exchanges, reward excellence and further discussions on best practices. In addition, knowledge and innovation Services that will lead to the development of available and accessible modern technologies and solutions, decision support tools & platforms for integrated resource management across sectors, and models for PPP and Investments, will also be important in the transition process. Lastly, an applications process output will follow as they would directly link research to sustainable methods and materials in production to ensure a cyclic flow of resources within the national economy.

# 3 The Nigerian Circular Economy Roadmap (NCERM) Framework

**Vision:** To transition Nigeria from a Linear Economy to a Circular Economy by 2050.

**Mission:** To implement a short, medium- and long-term Circular Economy transition strategy for Nigeria.

The broad Vision of the NCEP is to transition Nigeria from a Linear Economy to a Circular Economy by 2050. The NCERM Framework here presented is an iterative structure that will serve as a guide to facilitate the timely development of the NCERM. Some of the components covered within the framework include the objectives, barriers to the goals, activities to be carried out, stakeholders identified and current capabilities/competencies to deliver these goals. The framework also highlights the deliverables in form of initiatives and feasible projects while identifying key assumptions, which are the necessary conditions that must exist for the desired change to occur. All these have been tabulated in alignment with the 4 prioritized sectors in the Scoping Report: AFOLU, Energy, IPPU and Services. The NCEP Roadmap Framework has been designed to be executed over three different time frames or phases: short-term (2023-2026), mid-term (2027-2030) and long-term (2031-2050).

A Communication Strategy will be developed for the dissemination of information about the project across various sectors of the Nigerian economy along with the following documents and initiatives required for the successful circular economy transition across the short, medium and long terms:

### 3.1 Phased activities

- (a) Short-term (2023-2026): These are effects that can be immediately felt as a result of the planned activities. The activities involved in this phase include:
  - (a) Proper delineation of roles and identification of the coordinating entity.
  - (b) Awareness creation and education.
  - (c) Identification of stakeholders.
  - (d) Synergies for partnership/collaboration.
  - (e) Initiating and harmonizing policies and legislation.
  - (f) Identifying and creating strategies for mobilizing funds for activities.
  - (g) Capacity building initiatives.
  - (h) Baseline assessments and feasibility studies.
  - (i) create and maintain a robust database of Nigeria's circular economy projects and natural capital assets.
  - (j) Transition of members of the informal sector to the formal sector.
  - (k) Development of communication and information management systems.

Paramount to the success of this stage (and indeed all of the stages of the NCEP) is the security and safety of lives and property which must be addressed for the benefits of the transition to be felt nationwide.

- (b) Mid-term (2027-2030): This second phase will leverage the activities carried out in the previous phase. Activities during this phase will include:
  - (a) expanding the network of stakeholders and sector initiatives
  - (b) assessing the development
  - (c) consolidating the new and existing projects

### 3.1 *Phased activities*

- (d) strengthening the legislative framework and their accompanying executing institutions.
- (e) create new relevant legislation based on earlier identified policy gaps
- (f) consolidate both the regulatory institutions and sustainable practices
- (g) develop new indigenous solutions
- (h) developing skilled expertise for capacity building
- (i) development of a database and data acquisition
- (j) continue transitioning of members of the informal sector to the formal sector.
- (k) continue development of communication and information management systems
- (1) continuation of funding and investment sources

This phase will also begin to explore the feasibility of expanding the NCEP to include other sectors of the Nigerian economy apart from those prioritized in the scoping report.

- (c) Long-term Activities (2031-2050): The overall NCEP vision is inclusive and wide-reaching, and the goal of the third phase of the NCEP framework will be to widen the coverage area in the country geographically and sector-wise. This will result in an increase in the number of circular businesses due to the enabling environment created from activities and support in the previous phases. This is in addition to:
  - (a) periodic reviews and assessments of the circularity status of the country.
  - (b) development of sustainable innovative solutions as viable alternatives
  - (c) the use of renewable energy as a replacement for fossil fuels.

Table 2 presents the NCERM framework in form of cross-cutting and sectorial, phased objectives and activities.

S/N	Key	Objectives	Term	Activities	Capabilitie	Major	Projects/Initiatives	Expected
	Challeng					Policies &		Outcomes
	es					Programs		
1	Lack	То	Short-	(a) Undertake	Medium	(a) National	(a) Periodic awareness	a) Enhanced
	of	create an	term	awareness	(M)	Policy on	campaigns by regulatory	understanding
	or	awareness and		campaigns		Circular	institutions such as the relevant	of CE/NC
	Awareness	understanding		by relevant		Economy	agencies in the Ministries of	concepts among
		of CE		stakeholders.		(NPCE).	Environment, Power, Science	different groups of
		across		(b) Development		(b) NCERM	and Technology, Agriculture;	stakeholders
		different		of Scoping Report		Communication	Producer Responsibility	b) Validation of
		sectors		and baseline		strategy	Organizations of the EPR	the Scoping report
		of the		assessments for			program, etc.	c) Uptake of
		Nigerian		visibility.			(b) Visible enforcement of	circular economy
		society		(c) Multi-stage			legislation with incentives and	and natural
				and multi-sector			deterrents by the Federal and	capital-oriented
				consultations.			State Ministries of Environment.	subjects by
				(d) Creation			(c) Presence of relevant	educational
				of a national			circular economy and natural	institutions.
				policy on circular			capital-oriented subjects in	d) Reduced
				economy.			the educational curriculum	pressure on
				(e)Implementation			from primary school to tertiary	Natural Capital in
				of legislation			institutions.	the long term.
				by regulatory				
				institutions.				
				(f) Addition of				
				circular economy				
				and natural				
				capital oriented				
				subjects to the				
				educational				
				curriculum at				
				various levels.				
							Con	ntinued on next page

 Table 2: NCEP Strategy Roadmap Framework (Cross-cutting Issues)

3.1

Phased activities

S/N	Key	Objectives	Term	Activities	Capabilitie	Major	Projects/Initiatives	Expected
	Challenges					Policies &		Outcomes
						Programs		
2	Lack of	To develop	Short-	(a) Undertake	Medium	(a) National	(a) Establishment of training	a) Improved
	adequate	une no guino d	term	training of	(M)	Development	with the Industrial Training	manpower to
	capacity/	required		private sector		(2021 - 2025)	Fund tertiary institutions and	support the
	roquirod	and		will be directly		(b) National	government/private sector skill	h) Increased
	requireu	technical		involved in the		(b) National Circular	acquisition programs	number of jobs
		expertise		activities		Economy	(b) Enforcement of professional	across the different
		required		(b)Carry out		Investment	qualifications and certifications	sectors
		for a		periodic training		Plan	as mandatory requirements for	c) More certified
		national		of government		(NCEIP)	certain roles and contracts like	sustainability
		circular		MDAs		(c) Circular	certifications from the Lagos	practitioners.
		economy				Economy	Business School - Sustainability	d) Improved
		transition				Technologies	Centre.	enforcement of
						(CETs)		legislature
								e) development of
								new and innovative
								businesses and
	<b>D</b>		<u></u>					models
3	Duplication/	lo ensure	Short-	(a) Identify	Low (L) –	(a) NCERM	(a) Periodic workshops and	a) Enhanced
	lack of	synergy	term	stakenolders for		communication	derify releasements relevant	understanding
	the reles of	anu clarity of	to mid	in the relevant		strategy	MDAs og regular inter	rolovant MDA's
	regulatory	operations	torm	legislation			Ministerial undates by the	on their role in
	institutions	among	win	(b) Liaise with			Ministerial updates by the Ministry of Finance on its	the transitioning
	institutions	relevant		relevant MDAs			Climate Mitigation/Adaptation	process
		CE/NC					Decision Support Tool.	b) Better
		regulatory					(b) Communication updates on	coordination
		MDAs.					new processes and developments	among the various
							relevant to MDA activities	relevant MDA's
								c) Regular periodic
								communication
								between relevant
								MDA's.
							Co	ntinued on next page

Table 2 – continued from previous page

3.1 P

Phased activities

S/N	Key	Objectives	Term	Activities	Capabilitie	Major	Projects/Initiatives	Expected	
	Challenges				S	Policies &		Outcomes	P
4	Use of unsustainable practices	(a)To develop a sustainabilit culture in the sector (b)To increase adoption of modern sustainable solutions (c)Transition of informal businesses to the formal sector	Short- term y to mid- term	(a) Increase the adoption of sustainable solutions and practices e.g. waste efficiency processes (c)Increase the amount of skilled personnel (d) Increase enforcement of relevant legislation (e)Facilitate funding pipeline for regulatory MDAs (f) Reduce cost of recycling and recovery infrastructure (g) Reduce resource- intensive operations e.g. energy and water (h) Refusal to use unsustainable raw materials for production and use of biodegradable materials as alternatives	High (H)	(a) National Policy on Climate Change (b) National Energy Policy (c) National Policy on Solid Waste Management (d) National Policy on Circular Economy (NPCE) (e) National Circular Economy Investment Plan (NCEIP) (f) Circular Economy Technologies (CETs)	<ul> <li>(a) Capacity building and training seminars and workshops facilitated by relevant MDAs in each sector in collaboration with State and Federal Ministries of Environment. This can include the sensitization on the operations of initiatives such as Climate Smart Mining, the Environmental Protection, and Rehabilitation Program (EPRP) and Material Recovery Mechanisms which have been initiated by the Federal Ministry of Mines and Steel Development.</li> <li>(b) Transition of members of the informal sector to the formal sector with appropriate incentives and flexible procedures e.g. reduced CAC registration fees and requirements, tax waivers, free guidance and training on sustainable operations and practices etc.</li> <li>(c) Regular waste audit exercises by organisations</li> <li>(d) Incentivisation of recycling and recovery infrastructure such as low import tariffs and waivers.</li> <li>(e) Use of resource-efficient systems instead of resource-intensive processes such as heat recovery systems and installation of recycled water plants in organizations.</li> <li>(f) Establishment of research centers/ partnership with educational institutions to develop resource efficient alternatives.</li> <li>(g) Increased membership registering in the PROs of the PROs of the processes for the environ for the processe for the plants in the PROs of the plants in the PROs of the plants in the PROs of the procestem.</li> </ul>	<ul> <li>a) Reduction</li> <li>in number of</li> <li>unsustainable</li> <li>practices</li> <li>b) increased</li> <li>adoption of</li> <li>sustainable</li> <li>practices</li> <li>among different</li> <li>stakeholders</li> <li>c) increased</li> <li>number of informal</li> <li>businesses that get</li> <li>formalized.</li> <li>d) Better</li> <li>enforcement of</li> <li>legislation by</li> <li>relevant regulatory</li> <li>MDA's</li> <li>e) increased</li> <li>funding secured by</li> <li>regulatory MDA's</li> <li>f) Reduction in</li> <li>cost of recycling</li> <li>g) and recovery</li> <li>infrastructure</li> <li>h) Reduction in</li> <li>resource- intensive</li> <li>operations</li> <li>i) Reduction</li> <li>in crease in use</li> <li>of biodegradable</li> <li>materials</li> <li>l) Increased</li> <li>registration</li> <li>for EPR programs.</li> </ul>	Phased activities 14/59
							Co	ntinued on next page	

3.1 ld 7 ÷.

ChallengesImage: Construction of the cons
Josence         (a)To         Short-         (a)Strengthening         Medium         (a) National         (a) Creation of new natural         a) Enhanced           5         Absence         increase         term         capacities and         (M)         Policy on         Circular         capital/ circular economy         affiliated legislation such as the         for elevant         for elevant         for elevant         for elevant         (M)         Policy on         capital/ circular economy         affiliated legislation such as the         for effective         enforcement         b)         Greaters           framework         regulatory         of relevant         regulatory         of relevant         (b)         Circular         sustanable developed which aims to drive         sprengy between           implementation         neffective         (b)         Adequate         Plan(CELP)         Stakeholders with policymakers         and increased         sprengy between           institutions         regulatory         regulatory         regulatory         regulatory         regulatory         stakeholders with financing         c)         Improved           institutions         reate new         (c)         Increase         funding         funding         funding         o           (b)         To erequat<
5       Absence of relevant legislation and weak regulatory ineffective implementation of existing legislation int       (a) Too increase the box regulatory institutions       Not- term capacities sub-national and sub-national and sub-national and sub-national and sub-national and sub-national and sub-national and sub-national regulatory institutions       Medium (M)       (a) National Policy on Circular       (a) Creation of new natural capacity frilited legislation such as the too stateholders with policy parts and representatives of regulatory institutions       (b) Circular         6       relevant regulatory institutions       of relevant regulatory regulatory       (b) Adequate funding of relevant regulatory       (b) Adequate funding of regulatory       Plan(CELP)       (b) Regular liaisons of stakeholders with financial MDAs and financing institutions       (c) Increase funding, regulatory institutions       (c) Increase funding, regulatory institutions       (d) Inproved geographical coverage area of regulatory institutions         6       Creation of new relevant irends       (e) Creation of new relevant institutions       (e) Creation of new relevant institutions       (finding, regulatory institutions
legislation

Table 2 – continued from previous page

3.1 Phased activities

Table 2 – c	continued	l from previ	ous pag	e				
S/N Key Cha	y allenges	Objectives	Term	Activities	Capabilitie	Major Policies & Programs	Projects/Initiatives	Expected Outcomes
6 Lack adeo funo	k of quate ding	To facilitate the provision of funding for new businesses and expansion of existing businesses.	Short- term to long- term	<ul> <li>(a) Facilitate</li> <li>a pipeline of</li> <li>funding and</li> <li>investments.</li> <li>(b) Facilitate</li> <li>the accessibility</li> <li>of funding by</li> <li>beneficiaries</li> <li>(c) Development</li> <li>of feasibility</li> <li>studies and</li> <li>reports</li> </ul>	High (H)	<ul> <li>(a) Nigeria's Medium Term National Development Plan</li> <li>(MTNDP)</li> <li>(b) National Policy on Circular Economy</li> <li>(NPCE)</li> <li>(c) National Circular Economy</li> <li>(NPCE)</li> <li>(c) National Circular Economy</li> <li>(d) Circular Economy Business Strategy</li> <li>(CEBS)</li> <li>(e) Circular Economy</li> <li>Financial Models</li> <li>(CEF) in priority sectors</li> </ul>	<ul> <li>(a) Capacity building and training seminars and workshops for potential beneficiaries provided by MDAs such as the Ministry of Finance, Environment, Industries on how grants and funds can be acquired and utilized.</li> <li>(b) Increased membership and registration in umbrella organizations such as PROs in the EPR program and other umbrella trade bodies.</li> </ul>	a) Increased funding for Circular economy businesses b) Increased number of circular economy businesses c) Increased membership of businesses in organizations that promote sustainability and EPR.

Table 2 – continued from previous page

S/N	Key	Objectives	Term	Activities	Capabilitie	Major	Projects/Initiatives	Expected
	Challenges					Policies &		Outcomes
						Programs		
7	Absence of data	To create and maintain a robust database of Nigeria's circular economy projects and natural capital assets	Short- term to long- term	(a) Development of communication and information management system that facilitates access by all stakeholders	New (N)	(a) National Policy on Circular Economy (NPCE) (b) Circular Economy Technologies(C (c) Implementation of a Natural Capital Accounting Assessment (NCAA)	<ul> <li>(a) Development of a Circular Economy database and models by the Nigerian Bureau of Statistics (NBS) in collaboration with the Federal Ministry of Environment. An example of a data tool is the NECAL 2050 EeTnse)rgy emission model that will aid the country reduce its carbon emissions.</li> <li>(b) Creation of websites and domains by regulatory MDAs for easy hosting of databases</li> <li>(c) Mandatory reporting exercises whereby reports are periodically sent to regulatory agencies about the current status of initiatives so that records and databases can be</li> </ul>	<ul> <li>a) Enhanced</li> <li>communication</li> <li>and information</li> <li>management</li> <li>system.</li> <li>b) Enhanced</li> <li>data collection</li> <li>and verification</li> <li>system.</li> <li>c) Enhanced</li> <li>data storage and</li> <li>retrieval system.</li> <li>d) Better reporting</li> <li>systems by</li> <li>businesses.</li> </ul>
8	Absence of adequate security and safety	To ensure the safety of stakeholders who undertake CE/NC activities across the country.	Short- term to long- term	<ul> <li>(a) Protection of stakeholders' lives during regulatory and business activities as well as during transit.</li> <li>(b) Safeguard of CE/NC facilities and properties</li> <li>(c) Continuous liaisons with security agencies</li> </ul>	High (H) – High level of change required	<ul> <li>(a) National Security</li> <li>Strategy</li> <li>2019</li> <li>(b) National</li> <li>Policy on</li> <li>Circular</li> <li>Economy</li> <li>(NPCE)</li> <li>(c) Circular</li> <li>Economy</li> <li>Technologies</li> <li>(CETs)</li> </ul>	(a) Development and implementation of Security Plan for various sectors such as the National Security and Waterways Protection Infrastructure (Deep Blue Project) which is a collaboration of the Nigerian Navy, Army, Air Force, Police and Department of State Services to enhance maritime security. The project was initiated by the Federal Ministry of Transportation and Federal Ministry of Defence, and is being overseen by NIMASA.	<ul> <li>a) Enhanced security of lives and safety of properties.</li> <li>b) Improved interface between CE businesses and security agencies.</li> <li>c) Enhanced security infrastructure across all sectors and nationwide.</li> </ul>

Table 2 – continued from previous page

S/N	Key	Objectives	Term	Activities	Capabilitie	Major	Projects/Initiatives	Expected	
	Challenges	J			-	Policies &		Outcomes	F
						Programs			111
9	Lack of	(a) To	Mediur	-(a) Promote	High (H)	(a) National	(a) Establishment of research	a) increase in	50
	indigenous	develop	term	scientific research		Circular	centers across the country to	research/studies	2
	and	innovative	to	to develop		Economy	develop indigenous solutions	for innovative	2
	sustainable	and in digenesus	long-	innovative		Investment	and alternatives such as the	solutions	1
	alternatives	indigenous	term	indigenous		(NCEID)	by the Federal Ministry of	b) increase	Ś
	conventional	in		altornatives		(INCEIF) (b) National	Science Technology and	of innovativo	11
	unsustainable	sufficient		(b) Development		Policy on	Innovation to promote climate-	and indigenous	ò
	solutions	canacities		of feasibility		Circular	smart agriculture solutions	solutions to replace	
	3010113	that would		studies and		Economy	(b) Development of partnerships	fossil products and	
		replace		reports		(NPCE)	between stakeholders and	services.	
		fossil-fossil		(c) Sensitise the		(c) Circular	tertiary institutions to produce	c) Reduction in	
		products		general public		Economy	feasible solutions and services	importation of	
		and		on the need to		Technologies	relevant for the industry e.g the	goods and services	
		services.		adopt sustainable		(CETs)	Basel Convention Coordinating	d) increased	
		(b) To		practices and			Centre for the African. The	participation	
		reduce the		products			region which is funded by the	of relevant	
		importation		(d) Increased			Federal Government of Nigeria	stakeholders in	
		of goods		stakeholder			and the Basel Convention Trust	the policy making	
		and		participation in			Fund.	process.	
		services		business policy			(c) Increased stakeholder	e) Increased	
		to boost		making processes			participation in policy	production by	
		the local		(e) Increase			making processes such as	local businesses	
		and		incentives for			the stakeholder consultations in	in montrad meadurate	
		anu		local businesses			Waste Bettery Management	and solutions	
		a		to increases			Policy	f) increased	
		a successful		production to			(d) Provision of scholarships	demand for locally	
		CE/NC		substitute the			that drive innovation in various	produced goods	
		transition.		huge demand			sectors of the economy	g) increased	
				for imported			(e) Provision of incentives	number of new CE	
				solutions.			to small and medium scale	businesses	
				(f) Increased			businesses such as free training,	h) expansion and	
				availability and			capacity building programmes,	diversification	
				accessibility of			tax waivers, MSME grants as	of existing CE	
				funds for MSMEs			part of organizations' Corporate	businesses.	
							Social Responsibilities (CSR)	i) increased	
							etc.	availability of eco-	H
							(f) Development of eco-friendly	friendly innovative	Ċ
							innovative solutions such as	solutions.	Ć
							solar PV fish processors which		
							can be scaled up, and resource		
							recoveries.	ntinued on next name	

Table 2 – continued from previous page

3.1 Phased activities

18/59

Continued on next page

Table	Table 2 – continued from previous page									
S/N	Key Challenges	Objectives	Term	Activities	Capabilitie	Major Policies & Programs	Projects/Initiatives	Expected Outcomes		

### KEY:

Short-term: 2023-2026;

Medium-term: 2027-2030;

Long-term: 2031-2050

### **Definition of Capabilities**

Nothing - No change required

Low (L) – Low level of change required

Medium (M) – Medium level of change required

High (H) – High level of change required

New (N) – A new capability.

## 3.2 NCERM framework Strategic Objectives/Pillars

The NCEP Roadmap Framework is structured along certain pillars/strategic objectives which would provide further guidance for the next stages of the project. The strategic objectives identified and proposed are:

- 1. Governance & Operating Environment
- 2. Circular Economy & Natural Capital Businesses Opportunities & Finance
- 3. Circular Economy & Natural Capital Technology & Infrastructure
- 4. Communication Strategy & Education for Circular Economy/Natural Capital
- 5. National Natural Capital Strategy (NNCS)
- 6. MRV for Circular Economy & Natural Capital

In Tables 3 to 7, the NCEP Roadmap Framework has been presented based on the above pillars/strategic objectives and their alignment across the different sectors. This will facilitate the timely and effective development of the NCEP Roadmap.

- a) **Governance and Operating Environment:** The Governance and Operating Environment objectives identify the relevant legislative and regulatory framework changes required for a successful circular economy transition. It is based on this governance framework that regulatory policies, institutions, and processes will become operational. As shown in Table 3, key activities include the creation and implementation of relevant legislation including NCEP strategic documents, and enhancing the capacity of regulatory institutions for implementation.
- b) Circular Economy & Natural Capital Businesses Opportunities & Finance: The Circular Economy & Natural Capital Businesses Opportunities & Finance objectives are aimed at harnessing opportunities related to the creation of businesses and jobs along with providing the required funding. This is to enable the initiation and maintenance of such enterprises which are usually based on various potential and existing value chains over life-cycles and production processes. This section also offers valuable insights into potentially viable enterprises for potential investors and financial institutions. Key activities highlighted in Table 4 include the creation of businesses providing innovative sustainable solutions, training and skills, and processes of attracting potential investments.
- c) Circular Economy and Natural Capital Technology & Infrastructure: The Circular Economy & Natural Capital Technology & Infrastructure objectives identify the necessary technical solutions and support systems needed by stakeholders to embrace changes in the production processes across the economy. This will involve capacity building, acquiring new or upgrading existing equipment, and migrating to more sustainable practices. Information for potential investments in circular economy infrastructure and up-to-date technologies are stated in Table 5.
- d) Communication Strategy & Education For Circular Economy/ Natural Capital: The Communication Strategy & Education for Circular Economy/Natural Capital objectives gives details of the communication channels and activities required to properly disseminate information to relevant stakeholders in a timely and effective manner (Table 6). This is to raise awareness, educate, inform or provide updates on the circular economy transition process across the various sectors of the Nigerian economy and society.
- e) National Natural Capital Strategy (NNCS): The National Natural

Capital Strategy (NNCS) objectives in Table 7 highlights key components related to the sustainable management of Nigeria's naturally occurring assets. These assets include features of the country's bioeconomy, blue economy, and green economy, and it also showcases the impact which material flow processes have on the environment to enable mitigation measures to be developed and executed. Key activities in Table 6 include the implementation of relevant legislation, use of sustainable products and processes, awareness campaigns, and incorporation of renewable energy.

f) MRV For Circular Economy & Natural Capital: The MRV for Circular Economy & Natural Capital strategic objectives (Table 8) shows the key components related to sectors, stakeholders, tools, and processes involved in collecting, analyzing, verifying, and reporting data relevant to enhancing the nation's natural capital and also for driving the growth of a national circular economy. These objectives also include activities related to ecosystem accounting such as the NCAA, stocks/flows of renewable and non-renewable natural resources, and measurement of the nation's circularity and green growth. Procedures and outputs as highlighted in Table 7 include the execution of the relevant legislation which would make MRV tools and assessments a mainstay in processes across various sectors of the economy, as well as the collection and analysis of relevant data for the planning and execution of Nigeria's circular economy transition.

Table 3: Governance and C	perating Environment	objectives of the NCERM Framework
	1 1/	

1       AFOLU       Unsustainable land-use       To promote sustainable land-use       To promote sustainable land-use       Medium term to land-use       Medium term to land-use       Medium term to land-use       Medium term to land-use       A High level social or community mobilization programs. (c)       (a) Circular Economy and Climate Change (CECC)       (a) Rehabilitation of damaged or drylands lands. (b) Pilots on sustainable land management. (c) Development of wildlife conservation and anti-poaching programs. (d) Awareness campaigns on sustainable land use legislation of relevant stakeholders' innovative land-use       (a) Rehabilitation of damaged or drylands lands. (b) Pilots on sustainable land management. (c) Development of wildlife conservation sustainable land use legislation such as ranching policies	S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiatives	Expected outcomes
measures.	1	AFOLU	Unsustainable land-use practices and management which affect land use	To promote sustainable land-use management	Medium term to long term	<ul> <li>(a)</li> <li>Establishment of sustainable land</li> <li>management</li> <li>programs.</li> <li>(b)</li> <li>Multi-level</li> <li>Social or</li> <li>community</li> <li>mobilization</li> <li>programs.</li> <li>(c)</li> <li>Strengthening</li> <li>legislative</li> <li>compliance</li> <li>to existing</li> <li>land use</li> <li>legislation.</li> <li>(d) Adoption</li> <li>of relevant</li> <li>stakeholders'</li> <li>innovative</li> <li>land-use</li> <li>measures.</li> </ul>	A High level of change required	<ul> <li>(a) Circular</li> <li>Economy and</li> <li>Climate Change</li> <li>(CECC)</li> <li>(b) Circular</li> <li>Economy and</li> <li>Natural Resource</li> <li>Management</li> <li>(CENRM)</li> <li>(c) Circular</li> <li>Economy and</li> <li>Natural Capital</li> <li>MRVs</li> <li>(CENCMRVs)</li> <li>(d) Natural</li> <li>Capital Strategy</li> <li>(NCS)</li> <li>(e) Creation of</li> <li>sustainable land</li> <li>use legislation</li> <li>such as ranching</li> <li>policies</li> </ul>	<ul> <li>(a) Rehabilitation of damaged or drylands lands.</li> <li>(b) Pilots on sustainable land management.</li> <li>(c) Development of wildlife conservation and anti-poaching programs.</li> <li>(d) Awareness campaigns on sustainable land use practices across all levels of society.</li> </ul>	<ul> <li>(a) Provision of opportunities and benefits for ecological and socio-economic stability.</li> <li>(b) Creation of innovative options for land-resource users.</li> <li>(c) Ecological processes enhancement due to the use of sustainable land practices.</li> <li>(d) Encourage user-driven best practices.</li> </ul>

3.2

Table 3 – continued from previous page												
S/NKey ChallengesTermActivitiesMajor Policies & ProgramsProjects	s/Initiatives outcomes											
2 Services Absence and ineffective implementation of specific waste sector policies specific policies specific policies specific policies specific policies specific policies institutions for equivalent policies of regulatory institutions for the policies of regulatory institutions for the policies of	(a) Increased compliance of waste legislation nationwide. (b) Increased workshops atory MDAs workshops revenue for government due to transition of existing informal businesses to tonal Waste Management sector with associated reness g MDAs and the EPR on new n and ue to compliance with waste policies leading to effective waste management.											

	Table 3 – continued from previous page											
		Key		Term	Activities		<b>Major Policies</b>		Expected			
S/N	Sectors	Challenges	Objectives	ICIM	Activities	Capabilities	& Programs	<b>Projects/Initiatives</b>	outcomes			
3	Services	Lack of appropriate local solutions for wastewater collection, treatment and reuse	To effectively recycle waste water	Medium term to Long term	<ul> <li>(a) Creation and implementation of waste-water management policies.</li> <li>(b) Increase capacities of regulatory institutions</li> </ul>	Medium level of change required	<ul> <li>(a) National Policy on the Environment</li> <li>(2016)</li> <li>(b) National Policy on Circular Economy(NPCE)</li> <li>(c) Waste water policies</li> <li>(d) Circular Economy Technologies</li> <li>(CET)</li> </ul>	<ul> <li>(a) Refurbishment and upgrade of existing water facilities to recycle waste water</li> <li>(b) Establishment of waste water plants by PPPs.</li> </ul>	(a) Reviews of relevant legislation to protect waterways from pollution. (b) More waste water is made available for domestic, commercial and industrial uses. (c)Environmental enhancement as treated sludge and other waste materials are extracted before being used or released into the environment.			
4	Services	Absence of water catchment protected areas e.g. Marine protected areas	To create water catchment protected areas.	Medium term to Long term	<ul> <li>(a) Creation and implementation of water catchment legislation.</li> <li>(b) Increase capacities of regulatory institutions</li> </ul>	Medium level of change required	<ul> <li>(a) National Policy on the Environment</li> <li>(2016)</li> <li>(b) National Policy on Circular Economy(NPCE)</li> <li>(c) Water catchment legislation</li> </ul>	<ul> <li>(a) Refurbishment of poorly equipped River Basin Authorities</li> <li>(b) Execution of water catchment plans unique to various localities by respective River Basin Authorities.</li> </ul>	(a) Reviews of relevant legislation to address issues related to water catchment. (b) Water catchment plans developed and implemented across the country.			
								Contin	ued on next page G			

	Table 3 – continued from previous page												
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiatives	Expected outcomes				
4	Services	The absence of water catchment protected areas e.g. Marine protected areas.	To create water catchment protected areas.	Medium term to Long term.	<ul> <li>(a) Creation and implementation of water catchment legislation.</li> <li>(b) Increase capacities of regulatory institutions.</li> </ul>	A medium level of change required	<ul> <li>(a) National Policy on the Environment</li> <li>(2016).</li> <li>(b) National Policy on Circular Economy(NPCE).</li> <li>(c) Water catchment legislation.</li> </ul>	<ul> <li>(a) Refurbishment of poorly equipped River Basin Authorities.</li> <li>(b) Execution of water catchment plans unique to various localities by respective River Basin Authorities.</li> </ul>	(a) Reviews of relevant legislation to address issues related to water catchment. (b) Water catchment plans developed and implemented across the country.				

Table 3 – continued from previous page

# Table 4: Circular Economy & Natural Capital Businesses Opportunities & Finance objectives of the<br/>NCERM Framework

S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
1.	AFOLU	Inadequate and ineffective storage and processing facilities	To develop sustainable food processing measures and storage facilities	Medium- term	<ul> <li>(a) Use of modern</li> <li>processing</li> <li>techniques in</li> <li>food processing</li> <li>(b) Provision of</li> <li>power supply for</li> <li>relevant</li> <li>machinery</li> <li>(c) Provision of</li> <li>basic and social</li> <li>amenities at</li> <li>farming and</li> <li>processing sites.</li> <li>(d) Liaise with</li> <li>relevant MDAs</li> <li>on the</li> <li>prioritization of</li> <li>social amenities.</li> <li>(e) Liaise with</li> <li>organizations in</li> <li>various localities</li> <li>to undertake</li> <li>CSR in social</li> <li>amenities and</li> <li>public works.</li> <li>(f) Construct</li> <li>rails, cargo</li> <li>airports and road</li> <li>linking</li> <li>rural-urban areas</li> <li>to ease delivery.</li> </ul>	High level of change required	<ul> <li>(a) National</li> <li>Circular Economy</li> <li>Investment</li> <li>Plan(NCEIP)</li> <li>(b) Creation and</li> <li>implementation of</li> <li>National Policy on</li> <li>Circular Economy</li> <li>(NPCE)</li> <li>(c) Circular</li> <li>Economy</li> <li>Technologies(CETs)</li> </ul>	<ul> <li>(a) Funding programs and low interest loans for farmers and agric middle men.</li> <li>(b) Installation of renewable energy plants and off-grid electrical solutions at relevant sites to provide electrical power for equipment.</li> <li>(c) Creation of agricultural storage businesses like solar PV fish processing facilities.</li> <li>(d) Capacity building workshops on utilizing modern farming technologies.</li> </ul>	(a) Increased shelf life of agricultural products (b) Creation of new food processing businesses and associated jobs (c) Establishment of businesses which provide gried-connected and off-grid electricity (d) Reduced environmental pollution due to reduced agricultural waste as a result of effective storage and processing practices (e) Reduced agricultural product waste.

3.2

Table		4	-		continued		from	previous	page
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
3.	AFOLU	Absence of viable markets for agricultural produce	To identify and harness viable markets inside and outside the country for agricultural produce	Medium- term	<ul> <li>(a) Identify circular</li> <li>industries which require alternative indigenous produce as raw material</li> <li>(b) Increase foreign exchange earnings</li> <li>(c) Development of feasibility studies and reports on the agricultural export market issues and challenges.</li> <li>(d) Encourage stakeholders to join Nigerian circular economy forums such as NCEWG to network and do business.</li> </ul>	Medium level of change required	<ul> <li>(a) National Circular Economy Investment Plan</li> <li>(NCEIP)</li> <li>(b) CE + NC Business Models.</li> <li>(c) Nigerian Export Promotion Council Act.</li> </ul>	<ul> <li>(a) Creation of overseas networks for business purposes.</li> <li>(b) Development of businesses which will serve as middlemen linking suppliers with ready markets.</li> <li>(c) Create Export Development Fund</li> <li>(d) Capacity building on export procedure in Nigeria.</li> <li>(e) Capacity building workshop on product certification export procedure.</li> </ul>	<ul> <li>(a) Creation of new agricultural exportation businesses and jobs along the AFOLU value chain.</li> <li>(b) Increased revenue for government as a result of tax inflow from new businesses.</li> <li>(c) Increased foreign exchange earnings as a result of increased foreign exchange earnings as a result of increased exportation of agricultural products.</li> </ul>
								Co	ontinued on next page

Table		4	_		continued		from	previous	page (	S
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes	د
4.	AFOLU	Poor returns on agricultural investments	To make agriculture appealing to relevant stakeholders	Medium- term	<ul> <li>(a) Lower costs</li> <li>of production</li> <li>and processing</li> <li>(b) Increase</li> <li>access of AFOLU</li> <li>businesses to</li> <li>high end markets</li> <li>(c) Research and</li> <li>development of</li> <li>localized</li> <li>solutions</li> <li>(c) Training of</li> <li>new and existing</li> <li>entrepreneurs</li> <li>(e) Provision of</li> <li>adequate funding</li> <li>(f) Increase</li> <li>foreign exchange</li> <li>earnings</li> <li>(g) Development</li> <li>of feasibility</li> <li>studies and</li> <li>reports</li> </ul>	Medium level of Change required	<ul> <li>(a) National</li> <li>Circular Economy</li> <li>Investment</li> <li>Plan(NCEIP)</li> <li>(b) National Policy</li> <li>on Circular</li> <li>Economy (NPCE)</li> <li>(c) CE + NC</li> <li>Business Models</li> <li>(d) Circular</li> <li>Economy</li> <li>Technologies</li> <li>(CETs).</li> <li>(e) Nigerian</li> <li>Export Promotion</li> <li>Council Act.</li> </ul>	<ul> <li>(a) Incentivization of imported farm machinery and equipment</li> <li>(b) Development of indigenous crop and technical solutions</li> <li>(c) Provision of funding schemes by financial institutions</li> <li>(d) Entrepreneurship trainings and capacity building programmes for farmers and business owners.</li> <li>(e) Provision of grants and low interest loans for start-ups and expansions</li> <li>(f) Creation of overseas networks to standardize local products for exportation. An example of such a program is the Domestic Export</li> <li>Warehouse (DEW) established by the Nigeria Export Promotion Council (NEPC). This aims to increase the country's agriculture exports in the international market and it involves processes that facilitate the storage, packaging, labeling and assessment of products to be exported. Similar programs can also collaborate with the Agricultural Produce Sellers Association of Nigeria (APSAN), Nigeria Agricultural Quarantine Services (NAQS), Federal Ministry of Agriculture, NAFDAC, SON etc.</li> <li>(g) Incentivization of imported farm machinery and equipment (h) Development of indigenous crops and technical solutions.</li> </ul>	(a) Creation of new agricultural businesses and jobs along the AFOLU value chain. (b) Increased revenue for government as a result of tax inflow from new businesses. (c) Increased foreign exchange earnings as a result of increased exportation of agricultural products.	NICTON Linux minul Churtania Olivatima/Dillana

Table		4	-		continued		from	previous	page.
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
5.	Services	Absence of waste management services including niche waste management services	<ul> <li>(a) To stimulate the creation of specialized waste management businesses</li> <li>(b) To encourage the establishment of specialized waste management businesses</li> <li>(c) To create awareness on need to sort and process various kinds of waste</li> </ul>	Medium- term to Long- term	<ul> <li>(a) Creation of new waste management businesses nationwide including specialized ones e.g. industrial waste, medical waste etc.</li> <li>(b) Creation of awareness on methodology of sorting and disposing various kinds of waste</li> <li>(c) Development of appropriate technical expertise</li> </ul>	A New Capability Required	<ul> <li>(a) National Policy on Solid Waste Management</li> <li>(b) National Circular Economy Investment Plan</li> <li>(NCEIP)</li> <li>(c) National Policy on Circular Economy (NPCE)</li> <li>(d) CE + NC Business Models</li> <li>(e) Circular Economy Technologies</li> <li>(CETs)</li> </ul>	<ul> <li>(a) Creation of new businesses across the waste management value chain such as the establishment of a N10,000,000 mini-aggregation hub for packaging waste equipped with a baler and weight bridge operated by about 4 staff over a land mass of 0.6 hectares.</li> <li>(b) Creation of waste niche management services e.g. for industrial waste, medical waste, e-waste etc. An example is the Federal Government initiated National Hospital Intervention Scheme which has installed biomedical incinerators at 23 sites across the country though only 10 are currently operational.</li> <li>(c) Resuscitation of National Plastic Recycling plants installed at 26 locations across the country by the Federal Government to be run by State Governments with possible assistance from the private sector.</li> <li>(d) Establishment of waste management PPPs schemes similar to LAWMA-PPP initiatives: the Blue Box program, recycling banks, methane gas capture project at Abule etc.</li> </ul>	(a) New legislation on various niche waste management streams such as the Waste Battery Management Policy, National Healthcare Waste Management Policy etc. (b) Increase in the number of niche waste management businesses like E-Terra technologies which specifically processes e-waste. (c) Creation of new jobs as a result of new waste management businesses. (d) Increased use of modern sustainable technologies by waste materials (e) Improved waste materials. (f) Reduction toxic related diseases and illnesses due to improved waste management practices in the handling of certain niche waste materials. (f) Reduction toxic related diseases and illnesses due to improved waste management procedures. (g) Protection of natural capital such as water bodies, lands and air due to the prevention of the release of harmful and toxic waste materials into the environment. (h) Increased revenue for government as a result of taxation on new businesses.

Table		4	-		continued		from	previous	page ()
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
6.	Services	Lack of appropriate local solutions for wastewater collection, treatment and reuse	Development of recycled waste water solutions	Medium- term to Long- term	<ul> <li>(a) Development</li> <li>of feasibility</li> <li>studies for</li> <li>recycled</li> <li>wastewater</li> <li>schemes</li> <li>(b) Application</li> <li>to relevant</li> <li>institutions for</li> <li>funding and</li> <li>support</li> <li>(c) Capacity</li> <li>building of</li> <li>recycled</li> <li>wastewater</li> <li>Specialists</li> </ul>	Medium level of change required	<ul> <li>(a) National Policy on the Environment</li> <li>(2016)</li> <li>(b)National Circular Economy Investment Plan(NCEIP)</li> <li>(c) National Policy on Circular Economy (NPCE)</li> <li>(d) CE + NC Business Models</li> <li>(e) Circular Economy Technologies</li> <li>(CETs).</li> </ul>	(a) Creation of businesses across the recycled wastewater value chain (b) Creation of capacity building businesses and institutions.	<ul> <li>(a) Keviews of relevant</li> <li>legislation to</li> <li>protect waterways</li> <li>from pollution.</li> <li>(b) Establishment</li> <li>of wastewater</li> <li>treatment</li> <li>facilities all over</li> <li>the country in</li> <li>areas such as</li> <li>abattoirs, farms,</li> <li>breweries, fish</li> <li>processing, etc.</li> <li>(c) More waste</li> <li>water is made</li> <li>available for</li> <li>domestic,</li> <li>commercial and</li> <li>industrial uses.</li> <li>(d) Environmental</li> <li>enhancement as</li> <li>treated sludge and</li> <li>other waste</li> <li>materials are</li> <li>extracted before</li> <li>being used or</li> <li>released into the</li> <li>environment</li> <li>(e) Reduction in</li> <li>water</li> <li>pollution-related</li> <li>ailments due to</li> <li>the effective</li> <li>treated along the</li> <li>wastewater.</li> <li>(f) New jobs and</li> <li>businesses will be</li> <li>created along the</li> <li>waste water value</li> <li>chain such as</li> <li>consultants and</li> <li>trade effluent</li> <li>audit specialists.</li> <li>(g) Increased</li> <li>revenue for</li> <li>government as a</li> <li>result of taxation</li> <li>on new businesses.</li> <li>(h) Improved</li> <li>sanitation services</li> <li>to households.</li> </ul>

Table		4	-		continued		from	previous	page
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
7.	Services	Unsustainable disposal of waste (end of life) tyres in landfills	<ul> <li>(a) To reduce the amount of tyres disposed of at landfills.</li> <li>(b) To use sustainable materials in the production of tyres.</li> </ul>	Medium- term to Long- term	(a) Promotion of the use of public transport, car-pooling) (b) Use of waste tyres in energy recovery schemes (c) Establishment and investment in tyre recovery/recycling facilities		<ul> <li>(a) National Policy on Solid Waste Management</li> <li>(b) CE + NC Business Models</li> <li>(c) Circular Economy Technologies</li> <li>(CETs).</li> </ul>	<ul> <li>(a) Development of innovative</li> <li>wheels/tires to</li> <li>extend useful life.</li> <li>(b) Establishment of</li> <li>waste-tyre energy</li> <li>recovery schemes</li> <li>(c) Establishment of</li> <li>recycling</li> <li>tyre-projects such as</li> <li>schemes which</li> <li>convert rubber from</li> <li>waste tyres to</li> <li>modified asphalt</li> <li>which can be used on</li> <li>road surfaces, and</li> <li>waste tyres into</li> <li>paving bricks and</li> <li>floor tiles which are</li> <li>being produced by</li> <li>Freetown Waste</li> <li>Management Recycle</li> <li>based in Ibadan, Oyo</li> <li>State.</li> </ul>	<ul> <li>(a) Establishment of waste tyre legislation for effective management of waste tyres.</li> <li>(b) Establishment waste tyre processing facilities nationwide</li> <li>(c) Reduced</li> <li>(c)</li></ul>
8.	Energy	Lack of access to freshwater so as to meet up with the demand and supply of water and sanitation services	<ul> <li>(a) To provide</li> <li>freshwater at all times to users</li> <li>whenever it is required</li> <li>(b) To</li> <li>ensure water</li> <li>facilities and</li> <li>networks are</li> <li>economically</li> <li>and</li> <li>technically</li> <li>sustained.</li> </ul>	Medium- term to Long- term	<ul> <li>(a) Increase freshwater production, water treatment and</li> <li>(b) Improve water collection revenue from customers</li> <li>(c) Recycling of wastewater</li> </ul>	Medium level of change required	<ul> <li>(a) National Water Resources Mater Plan (2013)</li> <li>(b) National Water and Sanitization Policy (2000)</li> <li>(c) National Circular Economy Investment Plan(NCEIIP)</li> <li>(d) National Policy on Circular Economy (NPCE)</li> <li>(e) CE + NC Business Models</li> <li>(f) Circular Economy Technologies (CETs)</li> </ul>	(Upgrade existing water treatment plants with retrofitted equipment (b) Establishment new water treatment plants (in water-deficient areas e.g. rural areas) and wastewater recycling facilities.	(a) Increased number of after treatment centers nationwide including upgraded ones (b) Reduced illnesses and ailments associated with polluted water (c) Increased revenue for governments as a result of increased profits of water providers.

Table		4	-		continued		from	previous	page 🔾
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
9.	Energy	Lack of energy efficiency measures and practices in various sectors of the economy	To increase the energy efficiency applications and practices across the Nigerian economy	Short- term	<ul> <li>(a) Creation of awareness on the positive aspects of energy efficiency.</li> <li>(b) Reduction of the cost of energy efficient equipment</li> <li>(c) Encourage energy efficient businesses</li> <li>(d) Training of skilled workers required to install and maintain renewable systems</li> <li>(e) Incentivization of importation and manufacture of energy efficiency systems</li> <li>(f) Awareness campaigns on the benefits of energy efficiency.</li> </ul>	Medium level of change required	<ul> <li>(a) National Energy Transition Plan 2022</li> <li>(b) National Policy on Climate Change</li> <li>(c) National Renewable Energy and Energy Efficiency Policy</li> <li>(d) National Policy on Circular Economy (NPCE)</li> <li>(e) National Circular Economy Investment Plan(NCEIP)</li> <li>(f) CE + NC Business Models</li> <li>(g) NCERM Circular Economy and Climate Change(CECC)</li> <li>(h) Circular Economy Technologies</li> <li>(CET)</li> </ul>	<ul> <li>(a) Awareness         campaigns on benefits         of energy efficiency         undertaken by         regulatory agencies         (b) Trainings and         capacity building         programs on energy         efficient practices by         umbrella         organizations of         energy businesses like         the Renewable         Energy and Energy         Efficiency         Associations-Alliance         (c) Funding schemes         for start-ups and         businesses involved in         the provision of         energy efficiency         services and products         such as the         Sustainable Energy         Fund for Africa         managed by AfDB,         and the \$70million         fund provided by         Agence Francaise de         Developpement         (AFD) for renewable         energy and efficient         energy is projects.         (d) Increased         adoption of energy         efficiency measures         and equipment at oil         and gas facilities such         as solar and electric         boilers, heat pumps,         hydrogen furnaces,         vapour recovery units         etc.         Co     </li> </ul>	(a) Increased use of energy efficient solutions in production processes (b) Provision of subsidies for energy efficient equipment (c) Creation of new MSMEs along the energy efficiency value chain (d) Creation of new jobs associated with the new businesses created (e) Increased revenue for government as a result of taxation on new businesses (f) Reduced use of energy resources for power consumption thereby making more energy available for under-serviced areas.

Table		4	-		continued		from	previous	page 🗘
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
10.	Energy	Slow adoption of renewable and cleaner energy resources	To incorporate renewable energy applications and increase their adoption in various parts of the Nigerian economy.	Medium- term to Long- term	<ul> <li>(a) Creation of awareness on the positive aspects of the socio-economic and environmental impacts of renewable energy solutions.</li> <li>(b) Reduction of the cost of renewable energy equipment and infrastructures with low interest loans and energy affiliated grants from financial institutions.</li> <li>(c) Upgrade of the current grid infrastructure to incorporate power generated from renewable technologies</li> <li>(d) Enforcement of relevant environmental legislation</li> <li>(e) Investments and incentives on cleaner energy technologies/ infrastructure such as clean cook stoves to increase uptake,</li> </ul>	High level of change required	<ul> <li>(a) National Energy Policy</li> <li>(b) National Energy Transition Plan 2022</li> <li>(c) National Policy on Climate Change</li> <li>(d) National Renewable Energy and Energy</li> <li>Efficiency Policy</li> <li>(e) National Policy</li> <li>(on Circular Economy (NPCE)</li> <li>(f) NCERM</li> <li>Circular Economy</li> <li>and Climate</li> <li>Change (CECC)</li> <li>(g) National</li> <li>Circular Economy</li> <li>Investment Plan</li> <li>(NCEIP)</li> <li>(h) CE + NC</li> <li>Business Models</li> <li>(i) Circular</li> <li>Economy</li> <li>Technologies</li> <li>(CET)</li> </ul>	<ul> <li>(a) incentivization of imported and locally manufactured is systems using low import tariffs, waivers etc.</li> <li>(b) Training of skilled workers required to install and maintain renewable systems.</li> <li>(c) Funding programs such as the Sustainable Energy Fund for Africa managed by AfDB, and the \$70million fund provided by Agence Francaise de Developpement</li> <li>(AFD) for renewable energy and efficient energy projects. This is for the upgrade of existing power systems such as the regional and national grid infrastructure and development of new ones such as smart grids, data management systems, storage systems etc,</li> <li>(d) Development of subsidized green initiatives to promote clean cooking, electric transportation .</li> <li>(e) Creation of businesses supplying renewable energy, infrastructure and gadgets.</li> <li>(f) Establishment of low carbon transport and gas businesses involved in the sales and maintenance of gas (LPG), infrastructure and network systems for electricity generation and domestic use which would harness opportunities presented by the National Gas Expansion project and Nigerian Gas Commercialization program initiated by the Ministry of Petroleum Resources.</li> </ul>	(a) Increased renewable energy providers nationwide. (b) Creation of new MSMEs along the renewable energy value chain (c) Creation of new jobs associated with the new businesses created (d) Increased revenue for government as a result of taxation on new businesses (e) Reduced environmental pollution due to reduced use fossil fuels.

Table		4	-		continued		from	previous	page
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
11.	Energy	Large capital required for low carbon transport infrastructure	To proffer feasible solutions to access funding for low carbon infrastructure	Mid- term to long- term	<ul> <li>(a) Creation of cost-effective supply chain of electric and natural gas vehicles</li> <li>(b) Source for low interest credit facilities to finance schemes</li> </ul>	Medium level of change required	a) National Transportation Policy (b) National Energy Transition Plan 2022 (c) National Policy on Circular Economy (NPCE)	<ul> <li>(a) Funding programs from financial institutions to fund low carbon transport schemes</li> <li>(b) Supply chains of electric vehicles and natural gas vehicles.</li> </ul>	(a) Increased access and of uptake of funding by transport businesses to transition to low carbon transport. (b) Increased participation and contributions by international donors in support of low carbon transport schemes (c) Reduced environmental pollution as a result of reduced fossil fuels from the transport sector.
12.	IPPU	Unfavourable business environment due to lack of social amenities, high costs of formal sector participation, bureaucracy etc.	<ul> <li>(a) To make Nigeria more business- friendly</li> <li>(b) To reduce the cost of establishing sustainable business and industries</li> </ul>	Medium term to Long term	<ul> <li>(a) Provision of social amenities such as electricity, water supply, good road network, security etc.</li> <li>(b) Reduction of bureaucratic processes for informal sector</li> <li>(c) Introduction of incentives such as tax waivers, low interest loans etc.</li> <li>(d) Reduction of lending rates for sustainable businesses</li> </ul>	Medium level of change required	<ul> <li>(a) National Policy</li> <li>on Circular</li> <li>Economy (NPCE)</li> <li>(b) National</li> <li>Circular Economy</li> <li>Investment Plan</li> <li>(NCEIP)</li> <li>(c) CE + NC</li> <li>Business Models</li> </ul>	<ul> <li>(a) Increased funding by government for capital projects and social amenities</li> <li>(b) Incentive programs for encouraging informal to formal sector transition</li> <li>(c) Review of government processes to reduce delays.</li> </ul>	(a) Increased provision social amenities (b) Increased number of MSMEs due to improved business friendly climate (c) Creation of new jobs as a result of creation of new businesses (d) Increased government revenue due to tax inflow from new businesses.

### Table 5: Circular Economy & Natural Capital Technology & Infrastructure objectives of the NCERM Framework

S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
1.	AFOLU	Continuous use of outdated unsustainable techniques and practices in the AFOLU sector	To incorporate modern and sustainable technologies and practices into AFOLU activities and processes	Medium- term	<ul> <li>(a) Use of modern applications across the AFOLU ecosystem</li> <li>(b) Use of modern processing techniques in food processing and storage</li> <li>(c)Provision of adequate power supply necessary for relevant machinery</li> <li>(d) Provision of basic and social amenities at farming and processing sites.</li> </ul>	High (H)	<ul> <li>(a) National Agricultural Technology &amp; Innovation Plan (NATIP)</li> <li>2021-2024</li> <li>(b) National Drought and Desertification Policy</li> <li>(c) Nigeria Climate Change Policy and Response Strategy</li> <li>(d) National Forestry Action Plan,</li> <li>(e) National Biodiversity</li> <li>Strategy and Action Plan</li> <li>(multiple National Resources</li> <li>Conservation Action Plan</li> <li>(g) National</li> <li>(g) National</li> <li>(g) National</li> <li>(g) National</li> <li>(h) Creation and implementation of National Policy on Circular Economy</li> <li>(NPCE)</li> <li>(i) Circular Economy</li> <li>Technologies</li> <li>(CETs)</li> </ul>	<ul> <li>(a) Funding programs and low interest loans for farmers and agric middlemen.</li> <li>(b) Installation of renewable energy plants and off-grid electrical solutions to compliment electricity from grid at relevant sites. (c) Liaisons with relevant MDAs and public utilities organizations on the provision of social amenities to be used with relevant technologies.</li> <li>(d) Liaise with organizations in various localities to undertake CSR in social amenities and public works.</li> <li>(e) Capacity building trainings and workshops to enlighten stakeholders on moderm sustainable practices and trends in the AFOLU sector.</li> </ul>	<ul> <li>(a) Increase in the number of successful funding applications made to donor organizations and financial institutions</li> <li>(b) Increased adoption of modern techniques and applications in the AFOLU ecosystem</li> <li>(c) Increase in the number of off-grid energy applications and associated businesses</li> <li>(d) Increased job creation as a result of the use of modern processes, associated trainers and technicians, energy providers and specialists.</li> <li>(e) Conservation of natural capital resources such as water resources, lands and air due to the adoption of sustainable land use practices.</li> </ul>

S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
2.	Services	Absence of appropriate technologies for niche waste management services	(a) To stimulate the creation and growth of specialized waste management solutions	Medium- term to Long- term	<ul> <li>(a) Creation of new legislation to cater for various niche waste management streams</li> <li>(b) Incorporation of new waste management processes for specialized waste such as industrial waste, medical waste, medical waste etc.</li> <li>(c) Creation of awareness on methodology of sorting and disposing various kinds of waste</li> <li>(d) Development of appropriate technical expertise</li> <li>(e) Funding of research and development for certain kinds of waste e.g. grants, scholarships</li> </ul>	A New capability required	<ul> <li>(a) National Policy on Solid Waste Management</li> <li>(b) New legislation on waste materials such as medical waste, waste batteries etc.</li> <li>(c)National Circular Economy Investment Plan(NCEIP)</li> <li>(d) National Policy on Circular Economy(NPCE)</li> <li>(e) CE + NC Business Models</li> <li>(f) Circular Economy Technologies</li> <li>(CETs)</li> </ul>	<ul> <li>(a) Creation of niche waste management businesses and consultancies which can be used in waste management programs such as the Environmental Protection &amp; Rehabilitation Program for mining sites.</li> <li>(b) Capacity building and skills acquisition programs on specific wastes by regulatory agencies such as NESREA, Department of Pollution Control in FME.</li> <li>(c) Solutions developed by research facilities and higher educational institutions</li> <li>(d) Partnerships between the private sector, government MDAs and foreign organizations to acquire technical solutions on waste management processes for certain specific waste</li> </ul>	<ul> <li>(a) New legislation on various niche waste management streams such as the Waste Battery Management Policy, National Healthcare Waste Management Policy etc.</li> <li>(b) Increase in the number of niche waste management businesses like Geocycle Nigeria which specifically processes industrial, biomass, tires and municipal waste.</li> <li>(c) Creation of new jobs as a result of new waste management businesses.</li> <li>(d) Increased use of modern sustainable technologies by waste management businesses to process in the handling of certain niche waste materials.</li> <li>(e) Improved waste management practices in the handling of certain niche waste materials.</li> <li>(f) Reduction toxic related diseases and illnesses due to improved waste management procedures.</li> <li>(g) Protection of natural capital such as water bodies, lands and air due to the prevention of the release of harmful and toxic waste materials into the environment.</li> <li>(h) Increased revenue for government as a result of taxation on new businesses</li> </ul>

Table 5 – continued from previous page

S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
3.	Services	Lack of appropriate technologies for wastewater collection, treatment and reuse	Development of recycled waste water solutions	Medium- term to Long- term	<ul> <li>(a)</li> <li>Development of feasibility</li> <li>studies for</li> <li>recycled</li> <li>wastewater</li> <li>schemes in</li> <li>addition to</li> <li>highlighting</li> <li>socio-economic</li> <li>and</li> <li>environmental</li> <li>benefits such as</li> <li>reduction in</li> <li>water bills and</li> <li>costs of</li> <li>disposing</li> <li>water.</li> <li>(b) Application</li> <li>to relevant</li> <li>institutions for</li> <li>funding and</li> <li>support</li> <li>(c) Capacity</li> <li>building of</li> <li>recycled waste</li> <li>water</li> <li>specialists</li> <li>(d) Review</li> <li>existing</li> <li>legislation of</li> <li>protect</li> <li>water ways from</li> <li>pollution</li> <li>(e) Incorporation</li> <li>of relevant</li> <li>technologies</li> <li>and chemicals</li> <li>to process</li> <li>waste water.</li> </ul>	Medium level of change required	<ul> <li>(a) Water</li> <li>Resources Act 1993 and Water</li> <li>Resources</li> <li>(Amendment) Act 2016</li> <li>(b) National Water</li> <li>Supply and</li> <li>Sanitation Policy</li> <li>(NWSSP) of 2000</li> <li>(c) National Policy</li> <li>(nWSSP) of 2000</li> <li>(c) National Policy</li> <li>(d) National Policy</li> <li>(d) National Water</li> <li>Resources Master</li> <li>Plan (NWRMA)</li> <li>(e) National Water</li> <li>Plan (NVEIP)</li> <li>(f) National Policy</li> <li>(n Circular Economy</li> <li>Investment</li> <li>Plan(NCEIP)</li> <li>(f) National Policy</li> <li>(g) CE + NC</li> <li>Business Models</li> <li>(h) Circular</li> <li>Economy</li> <li>Technologies</li> <li>(CETs)</li> </ul>	(a) Creation of recycled waste water businesses (b) Creation of training businesses and institutions (c) Partnerships with international organizations for technical and financial support	<ul> <li>(a) Reviews of relevant legislation to protect waterways from pollution.</li> <li>(b) Establishment of waste water treatment facilities all over the country in areas such as abattoirs, farms, breweries, fish processing, etc.</li> <li>(c) More waste water is made available for domestic, commercial and industrial uses.</li> <li>(d) Environmental enhancement as treated sludge and other waste materials are extracted before being used or released into the environment</li> <li>(e) Reduction in water pollution-related ailments due to the effective treatment of waste water.</li> <li>(f) New jobs and businesses will be created along the waste water value chain such as consultants and trade effluent audit specialists.</li> <li>(g) Increased revenue for government as a result of taxation on new businesses</li> </ul>

					Table 5 – contin	ued from previo	us page		
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
4.	Energy	Non- adoption and lack of energy efficiency technologies and their adoption	To increase the use of energy efficient in the Nigerian economy	Short- term	<ul> <li>(a) Awareness</li> <li>(ampaigns on the benefits of energy</li> <li>efficiency.</li> <li>(b) Reduction in the costs of energy efficient solutions and equipment by developing</li> <li>efficient heating and power solutions.</li> <li>(c) Encourage the</li> <li>establishment of new energy</li> <li>efficiency</li> <li>consultancy</li> <li>businesses.</li> <li>(d) Training of skilled workers</li> <li>required to</li> <li>install and maintain</li> <li>renewable</li> <li>systems.</li> <li>(e)Incentivization of importation</li> <li>and</li> <li>manufacture of energy</li> <li>efficiency</li> <li>systems</li> </ul>	Medium level of change required	<ul> <li>(a) National Energy Transition Plan 2022</li> <li>(b) National Policy on Climate Change</li> <li>(c) National Policy</li> <li>(d) National Policy</li> <li>(d) National Policy</li> <li>(d) National Policy</li> <li>(e) National Circular</li> <li>Economy (NPCE)</li> <li>(e) National</li> <li>(circular Economy Investment Plan</li> <li>(NCEIP)</li> <li>(f) CE + NC</li> <li>Business Models</li> <li>(g) NCERM</li> <li>Circular Economy and Climate</li> <li>Change (CECC)</li> <li>(h) Circular</li> <li>Economy</li> <li>Technologies</li> <li>(CET)</li> </ul>	<ul> <li>(a) Development of technical solutions</li> <li>by research centers and educational institutions</li> <li>(b) Establishment of energy efficiency consultancy</li> <li>businesses, equipment suppliers and franchises.</li> </ul>	<ul> <li>(a) Increased use of energy efficient solutions in production processes</li> <li>(b) Provision of subsidies for energy efficient equipment</li> <li>(c) Creation of new MSMEs along the energy efficiency value chain</li> <li>(d) Creation of new jobs associated with the new businesses created</li> <li>(e) Increased revenue for government as a result of taxation on new businesses</li> <li>(f) Reduced use of energy resources for power consumption thereby making more energy available for under-serviced areas.</li> </ul>

3.2 NCERM framework Strategic Objectives/Pillars

	Gastan	Key	Ohissia	T	A	Com a biliti	Major Policies &	Projects /	Expected
S/N	Sectors	Challenges	Objectives	Term	Activities	Capabilities	Programs	Initiatives	Outcomes
5.	Energy	Expansion and upgrade of National Grid due to increased power demand and supply, and the incorporation of distributed generation from renewable resources	To increase the capacity of the National Grid and to increase its flexibility to be able to incorporate renewable energy resources	Long- term	<ul> <li>(a) Ensure adequate gas supply and maintenance to prevent outages and power issues</li> <li>(b) Financial and regulatory incentivization of private sector</li> <li>(c) Investment in new transmission and distribution networks</li> <li>(d) Increase metering rate and prevent abuse of tariff to ensure adequate funds for grid maintenance</li> <li>(e) Increase use and maintenance of available assets</li> <li>(f) Use of custom -made reduction initiatives for Distribution Companies (DisCos)</li> </ul>	Medium level of change required	<ul> <li>(a) National</li> <li>Energy Transition</li> <li>Plan 2022</li> <li>(b) National</li> <li>Renewable Energy</li> <li>and Energy</li> <li>Efficiency Policy</li> <li>(c) National Policy</li> <li>on Circular</li> <li>Economy (NPCE)</li> <li>(d) National</li> <li>Circular Economy</li> <li>Investment</li> <li>Plan(NCEIP)</li> <li>(e) CE + NC</li> <li>Business Models</li> <li>(f) NCERM</li> <li>Circular Economy</li> <li>and Climate</li> <li>Change(CECC)</li> <li>(g) Circular</li> <li>Economy</li> <li>Technologies</li> <li>(CET)</li> </ul>	<ul> <li>(a) Refurbishment of transmission and distribution power infrastructure to reduce electrical losses</li> <li>(b) Funding schemes for local contractors/suppliers, start-ups and businesses involved in the provision of equipment required for grid upgrades, energy efficiency services and products such as the Sustainable Energy Fund for Africa managed by AfDB, and the \$70million fund provided by Agence Francaise de Developpement (AFD) for renewable energy and efficient energy projects.</li> </ul>	<ul> <li>(a) Upgraded transmission and distribution infrastructure</li> <li>(b) Availability of funding schemes which would finance grid-connected renewable energy resources</li> <li>(c) Large amount of local contractors which can partner with relevant foreign firms to provide technical solutions</li> <li>(d) Creation of new jobs and roles relevant for the expansion of the grid network.</li> <li>(e) Cheaper energy bills due to the provision of more efficient power supply</li> <li>(f) Reduced environmental pollution due to reduced use of fossil fuels technologies for power supply.</li> <li>(g) Reduced costs of living due to reduced costs of running MSMEs.</li> </ul>

Sectors Sectors Rey Objectives Term Activities Capabilities Major Policies & Projects / Expected	
S/N Challenges Outcomes Outcomes	
6EnergyIncorporation of biofuel bindingTo introduce biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel biofuel bio	ent of i els int of y vide els as iel iles new iofuel h as sors, lists n the ls for g

S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
7	Energy	Transition from passenger cars to public transport or 2-3 wheelers	To facilitate the transition of vehicle users from passenger cars to public transport or 2-3 wheelers	Mid- term to Long - term	<ul> <li>(a) Sensitization of various stakeholders on benefits of low carbon transport</li> <li>(b) Ensure public transport systems are operational and infrastructure is in optimum conditions</li> <li>(c) Ensure economical measures are in place to make public transport the more preferable choice od transit.</li> </ul>	Medium level of change required	<ul> <li>(a) National Energy Transition Plan 2022</li> <li>(b) National Renewable Energy and Energy Efficiency Policy</li> <li>(c) National Transport Polcy</li> <li>(d) National Policy</li> <li>(d) National Policy</li> <li>(d) National Policy</li> <li>(e) National Circular Economy (NPCE)</li> <li>(e) National Circular Economy Investment Plan(NCEIP)</li> <li>(f) CE + NC Business Models</li> <li>(g) NCERM</li> <li>(ircular Economy and Climate</li> <li>Change(CECC)</li> <li>(h) Circular</li> <li>Economy Technologies</li> <li>(CET)</li> </ul>	<ul> <li>(a) Awareness campaigns on benefits of transition to low carbon transport alternatives</li> <li>(b) High availability of transportation systems and networks.</li> <li>(c)Taxation on private road vehicles to encourage the use of public transport and 2-3 wheelers.</li> </ul>	<ul> <li>(a) Increased use of</li> <li>2-3 wheel vehicles as</li> <li>the preferable form of</li> <li>road transport</li> <li>(b) Reduced price of</li> <li>2-3 wheel vehicles via</li> <li>subsidies</li> <li>(c) New businesses</li> <li>will be created which</li> <li>sell/hire out 2-3</li> <li>wheelers as well as</li> <li>their spare parts and</li> <li>servicing. This will</li> <li>provide competition</li> <li>to existing vehicle</li> <li>suppliers and spare</li> <li>parts dealers and give</li> <li>consumers a</li> <li>sustainable</li> <li>alternative to choose</li> <li>from.</li> <li>(d) Reduction in the</li> <li>use of fossil fuels for</li> <li>road transport</li> <li>vehicles thereby</li> <li>reducing</li> <li>environmental</li> <li>pollution.</li> <li>(e) Reduction in</li> <li>private car ownership</li> <li>across the country</li> </ul>

# Table 6: Communication Strategy & Education for Circular Economy/Natural Capital objectives of the NCERM Framework

S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiative	Expected outcomes
1.	AFOLU	Lack of awareness on environmenta issues which affect land use	To educate on the sustainable use of land resources	Medium- term	<ul> <li>(a) Education of various stakeholders on sustainable land use practices and associated benefits.</li> <li>(b) Implementatio n land use legislation.</li> <li>(c)Implementation of sustainable land use measures by relevant stakeholders involved</li> </ul>	High level of change required.	<ul> <li>(a) Nigeria</li> <li>(limate Change</li> <li>Policy and</li> <li>Response</li> <li>Strategy.</li> <li>(b) National</li> <li>Forestry Action</li> <li>Plan.</li> <li>(c) National</li> <li>Biodiversity</li> <li>Strategy and</li> <li>Action Plan</li> <li>(NBSAP).</li> <li>(d) National</li> <li>Resources</li> <li>Conservation</li> <li>Action Plan.</li> <li>(e) Circular</li> <li>Economy and</li> <li>Climate Change</li> <li>(CECC)</li> <li>(f) Circular</li> <li>Economy and</li> <li>Natural Resource</li> <li>Management</li> <li>(CENRM)</li> <li>(g) Natural</li> <li>Capital Strategy</li> <li>(NCS)</li> </ul>	<ul> <li>(a) Awareness campaigns across all levels of society</li> <li>(b) Effective implementation of legislation by relevant regulatory MDAs.</li> <li>(c) Creation of consultancies with land use specialists and community liaisons</li> <li>(d) Creation and implementation of the following.</li> </ul>	(a) An educated populace which implements sustainable land practices.

3.2

S/NSectorsKey ChallengesObjectivesTermActivitiesCapabilitiesMajor Policies & ProgramsProjects/InitiativeExpected outcome(a) National Energy Transition Plan 2021.(a) National Energy Transition Plan 2021.(a) Increas use of energy efficient solutions i production of awareness on the positive aspects of energy(a) Creation of awareness(a) Creation of awareness(a) Creation of awareness(a) Creation of awareness(a) Creation of awareness(a) Awareness energy(a) Awareness energy(b) Creation energy(c) National Energy and Energy and Energy Efficiency (d) National(a) Awareness energy(a) Awareness energy(b) Creation energy(c) Creation energy(d) National Policy. (d) National Policy on (b) Training and(c) Creation (c) Creation (c) Creation (c) Creation(c) Creation (c) Creation (c) Creation (c) Creation					Tab	le 6 – continue	d from previou	is page		
Image: constraint of the second state of the secon	S/N	KeySectorsChar	ey allenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiative	Expected outcomes
2. Energy awareness on energy efficiency measures and benefits. Short-term sectors. (b) Provisio no for information on processes for informal sector the formal sector Undertake awareness campaigns in the formal sector undertake awareness campaigns in the formal sector is continued on processes is contin	2.	Energy Lack awa on e effic need	ck of areness energy iciency eds	To increase awareness on energy efficiency measures and benefits.	Short- term	<ul> <li>(a) Creation</li> <li>of</li> <li>awareness</li> <li>on the</li> <li>positive</li> <li>aspects of</li> <li>energy</li> <li>efficiency in</li> <li>various</li> <li>sectors.</li> <li>(b) Provisio</li> <li>n of</li> <li>information</li> <li>on processes</li> <li>for informal</li> <li>sector</li> <li>members</li> <li>transiting to</li> <li>the formal</li> <li>sector</li> <li>Undertake</li> <li>awareness</li> <li>campaigns</li> </ul>	Medium level of change required	<ul> <li>(a) National</li> <li>Energy</li> <li>Transition Plan</li> <li>2021.</li> <li>(b) National</li> <li>Policy on</li> <li>Climate Change</li> <li>(c) National</li> <li>Renewable</li> <li>Energy and</li> <li>Energy Efficiency</li> <li>Policy.</li> <li>(d) National</li> <li>Policy on</li> <li>Circular</li> <li>Economy(NPCE)</li> <li>(e) National</li> <li>Circular</li> <li>Economy</li> <li>Investment Plan</li> <li>(NCEIP)</li> <li>(f) CE + NC</li> <li>Business Models</li> <li>(g) NCERM</li> <li>Circular</li> <li>Economy and</li> <li>Climate</li> <li>Change(CECC)</li> <li>(h) Circular</li> <li>Economy</li> <li>Technologies(CET)</li> </ul>	<ul> <li>(a) Awareness</li> <li>campaigns on the</li> <li>benefits of energy</li> <li>efficiency.</li> <li>(b) Training and</li> <li>certification of</li> <li>skilled workers</li> <li>required to install</li> <li>and maintain</li> <li>renewable systems</li> <li>(c) Publication of</li> <li>certified businesses</li> <li>and professionals</li> <li>for patronage .</li> </ul>	<ul> <li>(a) Increased use of energy efficient solutions in production processes.</li> <li>(b) Creation of new MSMEs along the energy efficiency value chain.</li> <li>(c) Creation of new jobs associated with the new businesses created.</li> <li>(d) Reduced use of energy resources for power consumption thereby making more energy available for under-serviced areas.</li> </ul>

Table 6 – continued from previous page

				Tab	le 6 – continue	ed from previou	is page			$\frac{3}{2}$
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiative	Expected outcomes	7
3.	Energy	Lack of awareness of the benefits of using renewable energy solutions and availability of these systems	To foster awareness on the relevance and availability of renewable energy solutions which can be alternatives to existing energy solutions	Medium- term to Long- term	<ul> <li>(a) Creation of awareness on the positive aspects of the socio-economic and environment al impacts of renewable energy solutions.</li> <li>(b) Creation of awareness regarding relevant environment al legislation</li> </ul>	High level of change required	<ul> <li>(a) National Policy on Circular Economy(NPCE)</li> <li>(b) National Circular Economy Investment Plan(NCEIP)</li> <li>(c) CE + NC Business Models</li> <li>(d) NCERM Circular Economy and Climate Change (CECC)</li> <li>(e) Circular Economy Technologies (CET)</li> </ul>	<ul> <li>(a) Awareness campaigns on the benefits of renewable energy solutions.</li> <li>(b) Advertisement campaigns on the costs of renewable energy solutions.</li> <li>(c) Establishment of capacity building centers for training and skills acquisition in renewable energy solutions.</li> </ul>	<ul> <li>(a) Increased patronage of renewable energy systems.</li> <li>(b) Reduced GHG emissions released into the atmosphere as a result of reduced fossil fuels use.</li> <li>(c) Creation of new businesses and jobs associated with providing electricity from renewable energy resources.</li> <li>(d) Increased government revenue as a result of increased renewable energy businesses.</li> </ul>	ICERM framework Strategic Objectives/Pillars

	Table 6 – continued from previous page     Continued from previous page												
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiative	Expected outcomes				
4.	IPPU	Lack of relevant information regarding the establishmen of circular economy affiliated businesses and industries	<ul> <li>(a) To create awareness on Nigeria's business- friendly environment</li> <li>(b) To provide information on the opportunities in Nigeria's circular economy landscape</li> </ul>	Short- term to long- term	<ul> <li>(a) Provisio</li> <li>n of</li> <li>information</li> <li>on available</li> <li>social</li> <li>amenities</li> <li>such as</li> <li>electricity,</li> <li>water</li> <li>supply,</li> <li>good road</li> <li>network,</li> <li>security etc.</li> <li>(b) Provisio</li> <li>n of</li> <li>information</li> <li>on processes</li> <li>for informal</li> <li>sector</li> <li>members</li> <li>transiting to</li> <li>the formal</li> <li>sector</li> <li>(c) Undert</li> <li>ake</li> <li>awareness</li> <li>campaigns</li> </ul>	Low level of change required	<ul> <li>(a) National Policy on Circular Economy(NPCE)</li> <li>(b) National Circular Economy Investment Plan(NCEIP)</li> <li>(c) CE + NC Business Models</li> </ul>	<ul> <li>(a) Publication and dissemination of feasibility reports by the private sector and research institutions in various sectors supporting circular oriented businesses (c) Awareness campaigns of the availability and accessibility of social amenities in various locations of the country.</li> <li>(c) Periodic media campaigns on the requirements and benefits including funding opportunities of transiting from the informal sector.</li> </ul>	<ul> <li>(a) An</li> <li>enlightened</li> <li>populace who</li> <li>understand</li> <li>and appreciate</li> <li>the benefits of</li> <li>a transition to</li> <li>a more circular</li> <li>and natural</li> <li>capital</li> <li>oriented</li> <li>economy.</li> <li>(b) An increase</li> <li>of NC/CE</li> <li>affiliated</li> <li>businesses and</li> <li>jobs</li> <li>nationwide to</li> <li>aim to harness</li> <li>the identified</li> <li>economic and</li> <li>funding</li> <li>opportunities.</li> <li>(c)</li> <li>Environmental</li> <li>enhancement</li> <li>as a result of</li> <li>increased</li> <li>NC/CE</li> <li>businesses and</li> <li>interests.</li> </ul>				

Table 7: National Natural Ca	pital Strategy (NNCS) (	objectives of the NCERM Framework
		1

1.       AFOLU       Use of unsustainable methods of utilizing land use practices       To promote the sustainable methods of utilizing land resources       Nedium term       High level of change required involved (c) Effective measures by relevant stakeholders involved (c) Enclose (CENCMRV)       (a) Effective implementation of sustainable measures by relevant stakeholders involved (c) Effective measures by relevant stakeholders involved (c) EncRM)       High level of change required       (a) Efficient (CENRM)       (b) Circular users on (CENRM)       (c) Efficient measures by relevant stakeholders involved (c) Enclose (CENCMRV)       (d) Adoption of of land of landscape (CENCMRV)       (c) Natural Capital Mragement (CENCMRV)       (d) Adoption of of land degradation degradation degradation degradation development of the country's river basins bit at regional and national transboundary levels.       Management development of the country's river basins bit at regional and national transboundary levels.	S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
Continued on next name	1.	AFOLU	Use of unsustainable land use practices	To promote the sustainable methods of utilizing land resources	Medium- term	(a) Implementation land use legislation (b) Implementation of sustainable land use measures by relevant stakeholders involved (c) Effective management of water basins in the country	High level of change required	<ul> <li>(a) Circular</li> <li>Economy and</li> <li>Natural</li> <li>Resource</li> <li>Management</li> <li>(CENRM)</li> <li>(b) Circular</li> <li>Economy and</li> <li>Natural Capital</li> <li>MRVs</li> <li>(CENCMRVs)</li> <li>(c) Natural</li> <li>Capital Strategy</li> <li>(NCS)</li> </ul>	<ul> <li>(a) Effective implementation of legislation by relevant</li> <li>regulatory</li> <li>MDAs.</li> <li>(b) Awareness</li> <li>campaigns in</li> <li>various urban</li> <li>and rural</li> <li>settlements</li> <li>(c) Periodic</li> <li>training of land</li> <li>users on</li> <li>sustainable land</li> <li>use practices</li> <li>(d) Adoption of</li> <li>Integrated</li> <li>Water Resources</li> <li>Management</li> <li>(IWRM)</li> <li>approach for the</li> <li>sustainable</li> <li>development of</li> <li>the country's</li> <li>river basins both</li> <li>at regional and</li> <li>national</li> <li>trans-boundary</li> <li>levels.</li> </ul>	<ul> <li>(a) Efficient management of Landscape</li> <li>/ water.</li> <li>(b)</li> <li>Elimination of land degradation and deforestation.</li> </ul>

	Table 7 – continued from previous page     Subject												
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes				
2.	Energy	Lack of adoption of renewable energy resources leading to continuous use of fossil fuel and forestry products as energy sources	To increase the penetration and use of renewable energy application as a sustainable alternative to fossil fuels and as a replacement of forestry energy sources	Medium- term to Long- term	<ul> <li>(a) Creation of awareness on the positive aspects of the socio-economic and environmental impacts of renewable energy solutions.</li> <li>(b) Reduction/ subsidization of the cost of renewable energy equipment and generation</li> <li>(c) Upgrade of the current grid infrastructure to incorporate power generated from renewable technologies</li> <li>(d) Enforcement of relevant environmental/ forestry legislation</li> </ul>	High level of change required	<ul> <li>(a) National Energy Transition Plan 2022</li> <li>(b) National Policy on Climate Change</li> <li>(c) National Renewable Energy and Energy</li> <li>Efficiency Policy</li> <li>(d) National Policy on Circular</li> <li>Economy</li> <li>(NPCE)</li> <li>(e) NCERM</li> <li>Circular</li> <li>Economy and Climate Change</li> <li>(CECC)</li> <li>(f) National</li> <li>Circular</li> <li>Economy</li> <li>Investment Plan</li> <li>(NCEIP)</li> <li>(g) CE + NC</li> <li>Business Models</li> <li>(h) Circular</li> <li>Economy</li> <li>Technologies</li> <li>(CET)</li> </ul>	<ul> <li>(a) Awareness</li> <li>(a) Awareness</li> <li>(a) approximates</li> <li>(a) approximates</li> <li>(b) approximates</li> <li>(b) approximates</li> <li>(b) approximates</li> <li>(c) approximates</li> <li>(d) approximate</li></ul>	<ul> <li>(a) Renewable energy efficiency achieved at households and industry levels.</li> <li>(b) Energy efficiency targets achieved.</li> </ul>				

	Table 7 – continued from previous page													
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes					
3.	Energy	Release of short-lived climate pollutants, GHGs, and air pollutants as fugitive emissions from oil and gas processes	To reduce and eventually eliminate oil and gas fugitive emissions	Short- term to long- term	<ul> <li>(a) Use of cleaner alternative technologies and processes.</li> <li>(b) Reduction / subsidization of asset replacement</li> <li>(c) Introduction on levies on carbon and air pollutant activities.</li> </ul>	High level of change required	<ul> <li>(a) National Gas</li> <li>Policy</li> <li>(b) National</li> <li>Energy</li> <li>Transition Plan</li> <li>2021</li> <li>(c) National</li> <li>Policy on</li> <li>Climate Change</li> <li>(d) National</li> <li>Policy on</li> <li>Circular</li> <li>Economy</li> <li>(NPCE)</li> <li>(e) NCERM</li> <li>Circular</li> <li>Economy and</li> <li>Climate Change</li> <li>(CECC)</li> <li>(f) National</li> <li>Circular</li> <li>Economy</li> <li>Investment Plan</li> <li>(NCEIP)</li> <li>(g) CE + NC</li> <li>Business Models</li> <li>(h) Circular</li> <li>Economy</li> <li>Technologies</li> <li>(CET)</li> </ul>	<ul> <li>(a)</li> <li>Implementation of carbon tax.</li> <li>(b)</li> <li>Incentivization of assets</li> <li>replacement</li> <li>(c) Funding</li> <li>programs for</li> <li>incorporating</li> <li>cleaner</li> <li>technologies</li> <li>such as the</li> <li>Global Energy</li> <li>Efficiency and</li> <li>Renewable</li> <li>Energy</li> <li>Fund (GEEREF),</li> <li>Emerging Africa</li> <li>Infrastructure</li> <li>Fund (EAIF).</li> <li>(d)</li> <li>Implementation</li> <li>of tax rebates</li> <li>for importation</li> <li>and adoption of</li> <li>climate-smart</li> <li>technologies.</li> </ul>	Emission targets achieved.					

Synt     Sectors     Challenges     Objectives     Term     Activities     Capabilities     Programs     Triplet(y)     Experience       4.     Release of emissions during production processes and operations (b) High cost and portionment.     a Reluction of built environment.     To reduce emissions of dust, e.g. carbon nonoxide     Medium, e.g. carbon nonoxide     (a) Reduction processes and operations (b) High cost and processes.     To reduce emissions of dust, e.g. carbon nonoxide     To reduce emission farent etchnologies during processes.     High level of charbe encompy reduction processes.     (a) Relational processes     (b) Recenting (b) Use of cleare denomy production processes.     (a) Release file     (b) Release (c) Leo file     (c) Routing products such as resources and reduction processes.     (b) Release (c) Release (
4. IPPU (a)Release of emissions of during production manufacturing activities, (b) High cost and poor design of building stress. To reduce emissions of dust, particulate manufacturing divide, cost and poor design of build environment. (a) Reduction in the use of unsustainable term to animaticate scales and poor design of build environment. (b) Reserve technologies (b) Use of scales and processes. (c) Use of change production monoxide (c) Use of change production processes. (c) Use of change products and processes (c) Use of change production monoxide (c) Use of change production processes. (c) Use of change production monoxide (c) Use of change production processes. (c) Use of change production processes (c) Use of change production processes. (c) Use of change production processes. (c) Use of change production processes (c) Use of change production processes. (c) Use of the production processes (CETs) (c) Use of the production processes (c) Use of the production processes. (c) Use of the production processes (c) Use of the production processe (c

ω i NCERM framework Strategic Objectives/Pillars

S/N         Sectors         Key Challenges         Objectives         Term         Activities         Capabilities         Major Policies & Programs         Projects / Initiatives         Expected Outcomes           5.         Services         Disposal of peculiar waste material into teg.         (a) To create awareness on need to sustainably dispose material into teg.         (a) To create awareness on need to sustainably dispose         Medium- term to to simulate the industrial,         Medium- of waste material into teg.         Medium- term to stimulate the industrial,         Medium- term to capability         (a) National consultancies         (a) National consultancies         (a) National consultancies         (a) Database of Green entrepreneurs           5.         Services         Disposal of peculiar waste environment industrial,         Medium- term to consultancies         Medium- term to consultancies         A New capability required         (a) National Circular economy (NPCE) (c) CE + NC         (b) Naional policy on Circular material into of relevant         Medium- term to consultancies         (b) Naional cities         (b) Waste management		Table 7 – continued from previous page     Subject												
5.       Services       Disposal of peculiar waste       (a) To create awareness on metrial into various kinds material into various kinds       (a) To create awareness on methical environment       (a) National       (a) National         5.       Services       Disposal of peculiar waste       (b) To create awareness on methical into various kinds of waste       Medium-term to for waste       (c) Development of waste       (a) National         6.       Services       Services       Services       Medium-term to for waste       Medium-term to for waste       (c) Development of awarenest on methical waste       (c) Development of awarenest on methical waste       (c) Development of awarenest on methical waste       (a) National         5.       Services       Disposal of peculiar creation of awarenest on metrial into various kinds index creation of environment e.g.       Medium-term to for waste       A New craability equirate       A New craability equirate       A New craability equirate       A New craability equirate       Circular creation of creation of awarenest on material into various kinds of waste       Medium-term to for expertise (c) Development of appropriate term of preverse (c) Development of consultancies       A New craability equirate       Policy on Circular creation of creation creation of creation of creation of creation of creati	S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes				
medical wastespecialized wastewaste management legislation (e) Capacity building and provision of support for regulatory institutions. (f)waste management of relevant legislationBusiness Models (d) Circular Economy Technologies (CETs)Services managed by Lafarge generation services to different waste generation sectors. (c) Identification and funding of profitable companies that are well positioned to take advantage of enormous wastemedical wastespecialized waste management businesseswaste management legislationServices (c) Smart managed by Lafarge generation sectors. (c) Identification and funding of profitable companies that are well positioned to take advantage of enormous waste	5.	Services	Disposal of peculiar waste material into the environment e.g. industrial, medical waste	(a) To create awareness on need to sustainably dispose various kinds of waste (b) To stimulate the creation of specialized waste management businesses	Medium- term to Long- term	<ul> <li>(a) Creation of new specialized waste</li> <li>management</li> <li>businesses e.g.</li> <li>industrial</li> <li>waste, medical</li> <li>waste, medical</li> <li>waste etc.</li> <li>(b) Creation of</li> <li>awareness on</li> <li>methodology</li> <li>of sorting and</li> <li>disposing</li> <li>various kinds</li> <li>of waste</li> <li>(c) Development</li> <li>of appropriate</li> <li>technical</li> <li>expertise</li> <li>(d) Implementation</li> <li>of relevant</li> <li>waste</li> <li>management</li> <li>legislation</li> <li>(e) Capacity</li> <li>building and</li> <li>provision of</li> <li>support for</li> <li>regulatory</li> <li>institutions.</li> <li>(f)</li> <li>Enforcement of</li> <li>relevant</li> <li>legislation</li> </ul>	A New capability required	(a) National Circular Economy Investment Plan(NCEIP) (b) National Policy on Circular Economy(NPCE) (c) CE + NC Business Models (d) Circular Economy Technologies (CETs)	<ul> <li>(a) Development</li> <li>of waste</li> <li>management</li> <li>programs which</li> <li>emphasize on</li> <li>proper waste</li> <li>classification</li> <li>and disposal</li> <li>such as the</li> <li>National</li> <li>Hospital</li> <li>Intervention</li> <li>scheme which</li> <li>has installed</li> <li>incinerators for</li> <li>medical waste</li> <li>disposal.</li> <li>(b) Creation of</li> <li>niche waste</li> <li>management</li> <li>businesses and</li> <li>consultancies</li> <li>such as Geocycle</li> <li>Waste</li> <li>Management</li> <li>Services</li> <li>managed by</li> <li>Lafarge</li> <li>providing</li> <li>services to</li> <li>different waste</li> <li>generation</li> <li>sectors.</li> <li>(c) Identification</li> <li>and funding of</li> <li>profitable</li> <li>companies that</li> <li>are well</li> <li>positioned to</li> <li>take advantage</li> <li>of enormous</li> <li>waste</li> <li>management</li> </ul>	<ul> <li>(a) Database</li> <li>of Green</li> <li>entrepreneurs</li> <li>established.</li> <li>(b) Waste</li> <li>management</li> <li>efficiency in</li> <li>major urban</li> <li>cities.</li> <li>(c) Smart</li> <li>cities</li> <li>developed.</li> </ul>				

S/NSectorsKey ChallengesObjectivesTermActivitiesCapabilitiesMajor Policies & ProgramsProjects / InitiativesExpected Outcomes6.ServicesDisposal of waste water into the environmentTo sustainably manage wastewater which includes its collection, treatment and reuseTo medium- term to Long- termMedium- term to collection, treatment and reuseMedium- term to termMedium- term to termMedium- term to funding and support (c) Capatity building and term to termMedium- term to funding and support termMedium- term to termMedium- term to termMedium- term to funding and support (c) Capatity building and term to termMedium- term to termMedium- term to termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- termMedium- term(a) National term(b) Creation of term(a) Job term(a) Job term(a) Job term(a) Job term(b) Dispose(c) Enforcement term(d) Stabilishment of term(d) Dispose term(d) Di		Table 7 – continued from previous page     C													
6. Services Disposal of waste water into the environment of lease water waste water which includes its collection, treatment and reuse where manage environment of leases water water waste water which includes its collection, treatment and reuse water specialists water water specialists water water water specialists water water water water specialists water water water water water water water waste water which includes its collection, treatment and reuse water specialists water wate	S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes					
	6.	Services	Disposal of waste water into the environment	To sustainably manage wastewater which includes its collection, treatment and reuse	Medium- term to Long- term	<ul> <li>(a)</li> <li>Development</li> <li>of feasibility</li> <li>studies for</li> <li>recycled</li> <li>wastewater</li> <li>schemes</li> <li>(b) Application</li> <li>to relevant</li> <li>institutions for</li> <li>funding and</li> <li>support</li> <li>(c) Capacity</li> <li>building and</li> <li>training of new</li> <li>and existing</li> <li>recycled waste</li> <li>water</li> <li>specialists</li> </ul>	Medium level of change required	<ul> <li>(a) National</li> <li>Circular</li> <li>Economy</li> <li>Investment</li> <li>Plan(NCEIP)</li> <li>(b) National</li> <li>Policy on</li> <li>Circular</li> <li>Economy(NPCE)</li> <li>(c) CE + NC</li> <li>Business Models</li> <li>(d) Circular</li> <li>Economy</li> <li>Technologies</li> <li>(CETs)</li> </ul>	<ul> <li>(a) Creation of recycled waste water businesses</li> <li>(b) Creation of training businesses and institutions</li> <li>(c) Enforcement of relevant legislation</li> <li>(d) Establishment of PPPs between government water resources MDAs and the private sector for the collection and processing of wastewater.</li> </ul>	<ul> <li>(a) Job</li> <li>creation</li> <li>especially</li> <li>amongst</li> <li>young people.</li> <li>(b) Efficient</li> <li>Water</li> <li>management.</li> </ul>					

				Table 7	– continued fro	m previous pa	ige		
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects / Initiatives	Expected Outcomes
7.	Services	Absence of water catchment protected areas e.g. Marine protected areas	<ul> <li>(a)</li> <li>Development</li> <li>of water</li> <li>catchment</li> <li>protected</li> <li>areas</li> <li>(b) Affiliation</li> <li>and</li> <li>partnerships</li> <li>forged with</li> <li>international</li> <li>conservation</li> <li>bodies and</li> <li>funding</li> <li>agencies.</li> <li>(c) Capacity</li> <li>building of</li> <li>specialists in</li> <li>water</li> <li>catchment</li> <li>protected</li> <li>areas</li> </ul>	Medium- term to Long- term	<ul> <li>(a) Identification of water catchment areas</li> <li>(b) Development of feasibility studies for water catchment protected areas</li> <li>(c) Liaisons with surrounding communities to manage protected areas</li> </ul>	Medium level of change required	<ul> <li>(a) Circular</li> <li>Economy and</li> <li>Climate Change</li> <li>(CECC)</li> <li>(b) Circular</li> <li>Economy and</li> <li>Natural</li> <li>Resource</li> <li>Management</li> <li>(CENRM)</li> <li>(c) Circular</li> <li>Economy and</li> <li>Natural Capital</li> <li>MRVs</li> <li>(CENCMRVs)</li> <li>(d) Natural</li> <li>Capital Strategy</li> <li>(NCS)</li> </ul>	<ul> <li>(a) Development of water</li> <li>catchment</li> <li>projects at</li> <li>viable locations</li> <li>(b)</li> <li>Collaboration</li> <li>with</li> <li>surrounding</li> <li>communities to</li> <li>manage</li> <li>protected areas</li> <li>(c) Creation of</li> <li>ecological</li> <li>businesses and</li> <li>consultancy</li> <li>services.</li> </ul>	(a) Conservation of critical water corridors (b)Eco- tourism promoted leading to more national/sub- national revenues.

Table 8:	MRV	for	Circular	& ]	Natural	Cap	ital	Strateg	ic Oł	piectives	of the	NCERM F	ramework
						- 1		0		,			

S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiat	Expected Outcomes
1.	AFOLU	Inadequate data and low frequency of data collection for accounting and reporting on NCAA and CE in the AFOLU sector (including agriculture, forestry,fishery etc.)	To enhance data availability of quality data and frequency of data collection for NCAA, GE and CE(e.g. physical flows of agriculture, forestry and fishery products between the environment and the economy as well as detailed information on the land use for agricultural use	Medium- term	<ul> <li>(a)Institutional strengthening for data collection</li> <li>(b) Development of data collection methodologies</li> <li>(c) High rate of data collection of data collection of data collection of data an land use activities at various locations.</li> <li>(d) Promoting and supporting climate-smart agricultural and climate-resilient practices in cropping, livestock production and fisheries; Define the frequency of reporting cycle for the MRV framework.</li> </ul>	High level of change required	<ul> <li>(a) Circular Economy and Climate Change (CECC)</li> <li>(b) Circular Economy and Natural Capital MRVs</li> <li>(CENCMRVs)</li> <li>(c) Circular Economy and Natural Resource Management</li> <li>(CENRM)</li> <li>(d) Natural Capital Strategy</li> <li>(NCS); National Agricultural Resilience Framework</li> <li>(NARF)</li> </ul>	<ul> <li>(a) Data collection</li> <li>(b) Analysis of land use patterns in Nigeria</li> <li>(c) MRV to track emissions reducing initiatives and regenerative agricultural practices.</li> <li>(d) Effective data collection procedures by relevant MDAs.</li> </ul>	Availability of quality data and Increase in the rate of data collection for AFOLU sector.

3.2

				Table 8	3 – continued fro	om previous pa	ge		
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiat	Expected Outcomes
2.	AFOLU	Lack of consistency and harmonization in data collection in the accounting and reporting in AFOLU sector	To enhance coordination and harmonization in data collection and reporting	Short term	Establish common guidelines and standards, formats and templates is recommended for consistency in reporting MRV results for NCAA and CE	High level of change required	<ul> <li>(a) National</li> <li>Policy on</li> <li>Environment;</li> <li>Circular</li> <li>Economy and</li> <li>Climate Change</li> <li>(CECC).</li> <li>(b) Circular</li> <li>Economy and</li> <li>Natural Capital</li> <li>MRVs</li> <li>(CENCMRVs).</li> <li>(c) Circular</li> <li>Economy and</li> <li>Natural</li> <li>Resource</li> <li>Management</li> <li>(CENRM)</li> <li>Natural Capital</li> <li>Strategy (NCS)</li> </ul>	Transition to low carbon pathways	Policy integration of NCA, CE and GG into the different institutions and sectors policies; Low emission performance.
3.	AFOLU	Inadequate, monitoring, resource mapping and assessment framework for payment for ecosystem services	<ul> <li>(a) increase technical capacity in Nigerian institutions to accurately map and use the maps to produce effective policy.</li> <li>(b)Incentivizing sustainable agricultural production.</li> </ul>	Long term	Updates of land use and ecosystem maps maps; measurement of the extent of each ecosystem asset		(a) Circular Economy and Climate Change (CECC). (b) Circular Economy and Natural Capital MRVs (CENCMRVs). (c) Circular Economy and Natural Resource Management (CENRM). (d) Natural Capital Strategy (NCS).		A sustainable business model; Effective of monitor changes in the stock of natural capital in terms of its capacity to deliver ecosystem services.

# NCERM framework Strategic Objectives/Pillars

Table 8 – continued from previous page									
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiat	Expected Outcomes
4.	Services	Lack of measurement tools and methods for data for data collection on wastewater, treatment and reuse	To provide tools for effectively measuring waste water resources	Medium- term to Long- term	<ul> <li>(a) Development</li> <li>of data</li> <li>collection</li> <li>methodologies</li> <li>(b) Collection</li> <li>of data on land</li> <li>use activities</li> <li>at various</li> <li>locations.</li> </ul>	High level of change required	<ul> <li>(a) (a) National Policy on the Environment</li> <li>(2016)</li> <li>(b) National Policy on Circular Economy</li> <li>(NPCE)</li> <li>(c) Waste water policies</li> </ul>	(a) Data collection and analysis for waste water with potential recycling opportunities	Availability and use of wastewater monitoring and measurement software and hardware.
5.	Services	Incomplete data on water catchment protected areas	To create and continuously update a database on water catchment protected areas.	Medium- term to Long- term	<ul> <li>(a) Creation of water</li> <li>catchment</li> <li>database.</li> <li>(b) Increase</li> <li>capacities of regulatory</li> <li>institutions to aid effective</li> <li>data collection</li> <li>and database</li> <li>management</li> </ul>	High level of change required	<ul> <li>(a) National</li> <li>Policy on the</li> <li>Environment</li> <li>(2016)</li> <li>(b) National</li> <li>Policy on</li> <li>Circular</li> <li>Economy(NPCE)</li> <li>(c) Water</li> <li>catchment</li> <li>legislation</li> </ul>	(a) Data collection and analysis for water catchment protected areas with potential opportunities for investments	Water Catchment account and database.
6.	IPPU	Lack of indicators framework to measure compliance to Laws and regulations on production processes	To establish indicators framework to monitor compliance to laws and regulation	Short term	Review and update of existing environmental laws and regulations.	High level of change required	<ul> <li>(a) Circular</li> <li>Economy and</li> <li>Climate Change</li> <li>(CECC).</li> <li>(b) Circular</li> <li>Economy and</li> <li>Natural Capital</li> <li>MRVs</li> <li>(CENCMRVs).</li> <li>(c) Circular</li> <li>Economy and</li> <li>Natural</li> <li>Resource</li> <li>Management</li> <li>(CENRM),</li> <li>Natural Capital</li> <li>Strategy (NCS).</li> </ul>	Measurement of performance in CE in the different sectors.	Effective regulatory framework to enable the establishment and operation of an effective GHG database management system.

NCERM framework Strategic Objectives/Pillars

	Table 8 – continued from previous page								
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiat	Expected Outcomes
		Irregular of Data flows -movement of data from specific data collection services into useful analysis and reports.	To establish legal instruments such as memoranda of understanding (MoU) or legal agreements to ensure the incorporation of MRV activities in the normal routine of relevant institutions and also sharing of data.	Short term	Strengthening Institutional Framework and coordination; Data management, analysis and reporting.	High level of change required	<ul> <li>(a) Circular</li> <li>Economy and</li> <li>Climate Change</li> <li>(CECC).</li> <li>(b) Circular</li> <li>Economy and</li> <li>Natural Capital</li> <li>MRVs</li> <li>(CENCMRVs).</li> <li>(c) Circular</li> <li>Economy and</li> <li>Natural</li> <li>Resource</li> <li>Management</li> <li>(CENRM).</li> </ul>	Reduction operational risks through improved management of their natural assets.	Development of natural capital account.
7.	Cross- Cutting	Lacks a dedicated emission of both GHG and non-GHG management system.	Improving the overall quality of the GHG inventory	Long term	Creation of database for GHG reporting; Strengthening Institutional Framework and coordination; Data	High level of change required	<ul> <li>(a) Circular</li> <li>Economy and</li> <li>Climate Change</li> <li>(CECC).</li> <li>(b) Circular</li> <li>Economy and</li> <li>Natural Capital</li> <li>MRVs</li> <li>(CENCMRVs).</li> <li>(c) Circular</li> <li>Economy and</li> <li>Natural</li> <li>Resource</li> <li>Management</li> <li>(CENRM);</li> <li>Natural Capital</li> <li>Strategy (NCS).</li> </ul>	Seek to reduce operational risks through improved management of their natural assets.	Enhancement of emission reduction by 20% in line with Nigeria's NDC.

Tuble of continued from previous page										
S/N	Sectors	Key Challenges	Objectives	Term	Activities	Capabilities	Major Policies & Programs	Projects/Initiat	Expected Outcomes	
		Asset register is the repository of bio-physical metrics that measure and track the state of natural capital assets over time.	Inventory of natural assets including measures of flows	Long term	Construct a methodological framework for corporate natural capital accounting.	High level of change required	<ul> <li>(a) Circular</li> <li>Economy and</li> <li>Climate Change</li> <li>(CECC).</li> <li>(b) Circular</li> <li>Economy and</li> <li>Natural Capital</li> <li>MRVs</li> <li>(CENCMRVs).</li> <li>(c) Circular</li> <li>Economy and</li> <li>Natural</li> <li>Resource</li> <li>Management</li> <li>(CENRM),</li> <li>Natural Capital</li> <li>Strategy (NCS).</li> </ul>	Potential benefits from enhancing or better utilising their natural assets	Natural capital asset register/databas	, ; e

# 4 Conclusion

A Circular Economy offers a nation a suite of social, economic and environmental opportunities which promote sustainable growth and an inclusive socio-economic development simultaneously. But in order for these benefits to be maximized, a clear pathway via a national strategy needs to be developed and implemented in collaboration with all the key stakeholders involved in the natural capital and circular economy landscape. These stakeholders - who are critical to the transition process - will drive the economy towards the attainment of national circularity goals and attract the necessary aid required to fulfill the national vision. Both the NCEP Theory of change and framework which have been developed and described can be used as a template for the development of an NCERM and would provide a platform for a sector-wise phased transition to a circular economy. These two documents are living documents that should be subject to reviews during wide-reaching consultations with various stakeholders and subsequent feedback/input incorporated into a flexible working document for the implementation of the NCERM which will support national growth, economic development and environmental sustainability. This final output will also stimulate investments in Nigeria and help the country to achieve its medium and long-term development goals.