AgriBioMulch
Custom Biodegradable Mulches

Adoption of Customized Biodegradable Mulch Films for Natural Soil Conditions in Agricultural Systems of Nigeria: Advocacy Summit

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SMEP | UN trade & development | UK International Development
Partnership | Progress | Prosperity

Executive Summary

The need to assure food security and meet the food demand for an ever-increasing global population remains one of the challenges in the agricultural sector. Consequently, the emergence of the hunger crisis, particularly now prevalent in the lower-middle-income regions. Africa is a hotspot for the seismic hunger crisis, and further compounded by conflict, climate change, covid-19 pandemic etc. Despite efforts to reduce hunger, the global prevalence of occurrence of hungry people is on the increase. At a critical crossroads in the food crisis and hunger catastrophe bedevilling the world, we must now immediately accelerate innovation and technology across nutritional platforms, and reform the systems and structures that hold us back. Revamping the agricultural technologies and system to increase efficient crop production in addressing food shortage and hunger is one appealing way to achieve the aim of eliminating hunger globally.

Novel technologies for higher crop productivity and quality without compromising standards such as biodegradable mulch (BDM) films have benefits for micro, small, medium and large-scale agricultural enterprises in Nigeria and Africa large. The Council for Scientific and Industrial Research, South Africa, and its consortium partner, Elizade University, are working on a AgriBioMulch project, which aims to develop and accelerate the adoption of bespoke, fully biodegradable mulch films, to replace the current non-biodegradable plastics mulches. Like conventional plastic mulches, BDMs benefits include enhanced crop yield, weed control, water retention, decreased use of pesticides, and prevention of soil erosion. However, the conventional mulches result in harmful microplastics on farms and have to be taken out at the end of crop lifecycle, and disposed of at cost, or burnt on farms, creating further pollution. In contrast, the BDMs are ploughed back into the soil after harvest, to biodegrade into carbon dioxide, water and soil enriching biomass, thus saving on the removal and disposal costs.

However, there is limited awareness of such technologies and there is need to create awareness around its potential to various stakeholders. Therefore, the objective of this summit was to advocate for Customized Biodegradable Mulch (BDM) Films for natural soil conditions in agricultural systems of Southern region of Nigeria. Elizade University Ilara-Mokin Nigeria, in partnership with the Council for Scientific and Industrial Research (CSIR), Pretoria, South-Africa, organized advocacy summit on 7th February 2023 at the Golden Tulip Restaurants and Resort Center, Onopa, Yenagoa, Bayelsa State with the theme, 'The Adoption of Customized Biodegradable Mulch Films for Natural Soil Conditions in Agricultural System of Nigeria. The advocacy summit was chaired by the representative of the commissioner for Agriculture, Mr. Obuma Mbata. In attendance was the representatives of Honourable Commissioner for Agriculture and Natural Resources, Bayelsa State, Mr. Obuma Mbata; Honourable Commissioner for Environment, Bayelsa State, Mr Davidson Ere; The President, All Farmers Association of Nigeria, member of agricultural related organization from across the Federation. The advocacy summit closed on a positive note with participants of more than 90 participants in attendance expressing their opinions on the relevance and adoption process of the BDM technology.

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INTRODUCTION

1 Background

Agriculture has long been a key component of the Nigerian economy, and the State of Bayelsa-Nigeria is no exception. With its fertile soil and abundant rainfall, Bayelsa State has the potential to play a significant role in the country's agricultural sector. However, despite these advantages, the agriculture sector in Bayelsa State faces a number of challenges, including low crop yields, soil degradation, and the use of harmful chemicals.

To overcome these challenges, the adoption of sustainable agriculture practices has become increasingly important. Sustainable agriculture is a holistic approach to agriculture that considers not only economic viability, but also the health of the environment and the well-being of local communities. In this context, the use of customised biodegradable mulch films has emerged as a promising solution for sustainable agriculture development in Bayelsa State.

Biodegradable mulch films are thin sheets of biodegradable material that are placed over the soil to conserve moisture, regulate soil temperature, and suppress weed growth. These films are designed to biodegrade over time, providing organic matter to the soil and improving soil health and fertility. Studies have shown that the use of biodegradable mulch films can increase crop yields, reduce the need for irrigation and the use of fertilizers and pesticides, and promote soil health and fertility.

In Bayelsa State, customised biodegradable mulch films are being developed to cater to the specific needs of local farmers. These films are designed to take into account the local climate, soil conditions, and crop requirements, ensuring that they provide the optimal support for crop growth. By using these eco-friendly mulch films, farmers in Bayelsa State can reduce their dependence on harmful chemicals, improve their crop yields, and contribute to the overall development of the region.

This summit aimed to explore the potential of customised biodegradable mulch films for sustainable agriculture development in Bayelsa State. Through a combination of expert presentations, case studies, and discussions, the programme provided a comprehensive overview of the challenges and opportunities associated with the use of biodegradable mulch films in Bayelsa State. The programme also provided a platform for stakeholders in the agriculture sector to exchange ideas and discuss ways to enhance the implementation of sustainable agriculture practices in the region.

One of the key objectives of this programme was to highlight the benefits of customised biodegradable mulch films for farmers in Bayelsa State. By showcasing the experiences of farmers who are already using these films, the programmed demonstrate how biodegradable mulch films can improve crop yields, reduce the use of harmful chemicals, and promote soil health and fertility.

In addition, the programme explored the challenges associated with the adoption of biodegradable mulch films in Bayelsa State. These include issues such as access to funding, lack of awareness and understanding of sustainable agriculture practices, and limited capacity

to implement these practices on a large scale. Through discussions and expert presentations, the programme provided a comprehensive overview of the challenges and opportunities associated with the adoption of sustainable agriculture practices in Bayelsa State.

In conclusion, the use of customised biodegradable mulch films has the potential to play a significant role in the development of sustainable agriculture in Bayelsa State. By improving crop yields, reducing the use of harmful chemicals, and promoting soil health and fertility, these films can help farmers in Bayelsa State to achieve their goals while preserving the environment for future generations. Through this programme, we hope to inspire and motivate the people of Bayelsa State to adopt sustainable agriculture practices and work towards a greener and more sustainable future.

2 Execution of Advocacy Summit

The advocacy summit was held on Tuesday 7th February, 2023 between the hours of 1000 WAT to 1400 WAT. It attracted online and onsite participation from experts and stakeholders from various sectors e.g., Government Functionaries: Honourable Commissioner Agriculture and Natural Resources, Bayelsa State; Honourable Commissioner of Environment, Bayelsa State; The President, All Farmers Association of Nigeria, member of agricultural related organization from across the Federation as well as international participants from Council of Scientific and Industrial Research (CSIR). See Appendix Table 1 for list of participants registered). We also had virtual Participants to the Advocacy summit.

2.1 Arrival of guests and participants

Invited guests and participants arrived the venues and registered preceding the opening of the meeting. The list of participants is available in the Appendix 1.

2.1.1 Opening of meeting and introduction of dignitaries

The advocacy summit started at 09:00 WAT with the Nigeria National Anthems. Introduction and recognition of invited guests and dignitaries was done by the Master of Ceremony. See the list of dignitaries in the appendix II.

2.1.2 Welcome Address by the Vice-Chancellor

The Speech of The Vice-Chancellor, Prof. Olukayode Amund, delivered at the Summit on adoption of biodegradable mulching (BDM) films for sustainable development in Nigeria, Held at the Golden Tulip Restaurants and Resort Center

2.1.2.1 Protocols

It gives me great pleasure to welcome you all to the Summit on Adoption of Biodegradable Mulching (BDM) Films for Sustainable Development in Nigeria**.** First, I express gratitude to the team from Elizade University, Ilara-Mokin, Ondo State, and our esteemed Partners from the Council of Scientific and Industrial Research (CSIR) in South Africa led by Dr. Vincent Ojijo, for organising this important

summit here at the Golden Tulip Restaurants and Resort Centre, Onopa, Yenagoa, Bayelsa State. I also appreciate and congratulate the government and good people of Bayelsa for hosting this summit.

The choice of hosting this important summit in Bayelsa State and indeed the South-South region of the country is apt and timely. Recently, Bayelsa State experienced one of the worst flooding situations in the history of the country, becoming a victim of flood disaster with about 96 deaths and nearly 1.3 million people displaced by the flood. Farmlands, school, housing health structures, and other facilities were affected by this natural occurrence. This was a challenging period for the State, I hereby sympathise with the government and peoples of Bayelsa State and commend the resilience and spirit with which the incidence was managed.

The times in which we live today are fronted with challenges including conflicts, climate shocks, threat of global recession, Covid-19 Pandemic and food crisis. In addition to this, the world is faced with food insecurity and other nutritional problems. Any desire to move the society forward today requires involvement of all critical stakeholders. This is why all hands must be on deck to move the society forward and bequeath a new teaching and learning approach to the upcoming generation. Therefore, inviting you to participate in this summit is with a desire to share experience, brainstorm together and ensure a buy-in or else this summit like many before it may again end up as another talk shop.

This summit will be an exposition on mulching and the nexus between it and national development. Mulching forms part of agricultural practices among our local farmers. A customised biodegradable mulch film common in our clime derives its material resources from plants and corn stalks. Mulch films are highly beneficial and are considered strategic in agriculture. It helps to prevent the soil from heating up too much, provides shade to the soil and the retained moisture to keeps it cool. In addition, mulch provides nutrients to the crops because in the process of decomposition, organic mulch material continuously releases its nutrients, thus fertilising the soil.

I have no doubt that the outcome of this Summit will be beneficial to all as it is meant to equip participants with advanced knowledge and skills in conservation and management of the nation's natural resources with particular focus on the agricultural sector to achieve a sustained development and Food Security that will not compromise the quality of the environment.

Ladies and Gentlemen, I once again want to emphasise that adopting good biodegradable mulch films is fundamental to modern day agriculture whose practices have gone beyond small scale holding. Mulching has remained very effective and it will remain as vital and invaluable for a long time to come.

I wish all the participants an enjoyable summit.

Thank you

Prof. Olukayode Amund, *FRSB, FAAS, FAS, KJW*
Distinguished Professor of Microbiology,
Vice-Chancellor, Elizade University,
Ilara-Mokin,
Ondo State.

2.1.3. Opening Remarks by the Chairperson

The Chairperson of the Advocacy Summit Dr. David Alagoa who sent his representative, in his remark welcomed the Host (Professor Olukayode Amund), the organising team from the Elizade University, and Honourable Commissioners from the State. Nigeria. He acknowledged the Summit on 'Adoption of Customized Biodegradable Mulch Films for Natural Soil Conditions in Agricultural System of Nigeria' was timely given the major global problems of food insecurity and hunger. Addressing food insecurity problem is one of the cardinals of the Sustainable Development Goals (SDGs) of the United National. He remarked that without food everybody in the world would go into extinction. Therefore, production of food within the Agricultural Hub requires that having healthy soil including the nutritional component. He stated the summit on the subject is timely and important because Bayesa State was just recovering from menace of flood crises. He appreciated the participants and wish them a fruitful event.

2.2 Paper and Plenary Presentation for Stakeholders

The meeting consisted of sessions with paper presentations and plenaries by resource persons as following:

2.2.1 Paper 1

The lead paper was presented by the Guest Speaker, Dr. Sudhakar Muniyasamy, Senior Researcher in Chemical Clusters, Council for Scientific and Industrial Research (CSIR), Pretoria, South Africa

Citation reading *(by Dr. Taiwo C. Omotoriogun)*

Dr. Sudhakar Muniyasamy is a Senior Researcher in Council for Scientific and Industrial Research (CSIR), Pretoria, South Africa. Dr. Muniyasamy obtained his Bachelor of Science Degree in Biological Sciences from Madurai Kamraj University, India in the year 2001. Thereafter, he got further training in Biological Sciences and earned a master's degree in the same University in 2003. In 2004, he obtained MPhil. in Biotechnology from University of Madras, India. Besides, in 2010 he was awarded Doctoral Degree in Chemistry from the ancient and prestigious University of Pisa in Italy. During the period of his training as doctoral student, he distinguished himself among his peers based on his sound and excellent research output; and became a Recipient of the prestigious International Galileo Gallei Fellowship for Top Three Young Researchers in Chemical Science at the University of Pisa in Italy.

Currently, Dr. Muniyasamy is leading Research and Development on “Sustainable biobased biodegradable plastics” at the Chemical Clusters, Council for Scientific and Industrial Research (CSIR), Pretoria, South Africa. Based on his passion to mentor burgeoning researchers, he was enlisted research associate at Department of Chemistry, Nelson Mandela University since 2013. Prior to this position, he was a post-doctoral researcher at the University of Guelph, Canada and a project officer at the Department of Biotechnology, Indian Institute of Technology, Madras, India.

His current research activity mainly focused on development of sustainable biodegradable plastics from renewable resources and studying end-of-life options with area of research translations in Recyclability, biodegradation and composting as well as verifying the environmental claims for biobased products.

His areas of Core Competence are in:

 Industrial Chemistry

 Bioproducts & Application; Biobased Materials

 Project Management for zero waste planning

 Intellectual Property & Application; Market Assessment

 Product Development & Application; Technology Leadership

 Technology Transfer and Cost benefit analysis

 Opening bio-based markets via standards and labelling

He has authored and co-authored numerous peer-reviewed papers in the fields of biobased polymers and biodegradation with H-index 16 (citation more than 1800 as on January, 2023). He had also attended several top international conferences and presented several outstanding research articles in more than 21 International meetings

Title of Paper*:* ‘The Adoption of Customized Biodegradable Mulch Films for Natural Soil Conditions in Agricultural Systems of Nigeria’

Summary of paper

The paper began by acknowledging that the advocacy summit on “Adoption of Customised Biodegradable (BDM) Mulch Films for Sustainable Agricultural Development in Nigeria”, was quite apt and timely in Nigeria. It highlighted the front line of converging ‘demons’ of climate change, food and energy crises as well as debt burden on everybody, emphasizing that this therefore present a need and opportunity like never before to galvanize or mobilize immediate on the ground action for relief due to the effect of the crutch of food scarcity in Nigeria and elsewhere in the word. The trending weather extremes, food shortages, fossil fuel price hike, and rising cost of living exacerbated by war on Ukraine, spur action toward more sustainable food systems. The devastating effect of the climate change as manifested in through excessive rainfalls, flooding and draught conditions across different part of the world has render farmland

useless culminating into less productivity for agricultural practices. Not meeting up with food production and demand has created the hunger crisis and malnutrition problems. About 10% of the global population is affected by the world hunger. The number of undernourished is estimated 150 million, a crisis driven largely by conflict, climate change, and Covid-19 pandemic.

The Paper hinted that it behaves on us all to look inward and think of maximizing the sustainable productivity of the arable land to produce food crops of better quality and quantity. The paper shared insight how to achieves these through 1) Mulching (protective layer for plant)- which helps to create congenial condition for crop growth; result in conserving moisture, temperature and soil around the plant, result to weed control; has decisive effect on earliness in yield and well as quality of crops. Mulching materials can be organic when made up of plant residue or synthetic when composed of plastic from petroleum residues. E.g., the use of plastic mulching film which became popular and known as plasticulture. The paper enumerated the advantages of mulching materials as follows: weed plants are usually covered by mulching materials; prevent sun-rays from getting to weed and instead reflected back the rays; weed readily stop growing; mulching materials such as plastic conserves moisture below the film; moisture fall back to the soil as droplet, and even distributed in the soil; reduce stress on the crops, and save water loss by evaporation of between 20% to 80%. It reduces the cost of fertilizers; reduce leaching, and timely distribution of nutrient; decrease fruit loss as it avoids direct contact of fruit with the soil leading to quality produce, reduction of soil compaction by preventing the crusting effect of sunlight and rain on the soil. Mulching also reduce the need for mechanical tilling for cultivation, soil also stays loose and well aerated, increases oxygen concentration necessary for microbial activities in the soil; active root zone is developed by mulching, it creates a chimney effect that enhance effective photosynthesis which the plant need for development (e.g., CO2 is heavier than O2 and stays lower close to the plant at night, in the day, due to heat, CO2 get lighter and goes upwards through the mulch and the stem and readily reaches the leaves). Mulches creates micro-climate that enhances plant growth and development; retain soil moisture, changes root zone temperature as well as quality and quantity of light reflected back to the plant.

The paper further buttress that Biodegraded Plastics (BDP) are made by converting sugar present in corn starch, cane, sugar beets, wheat or potatoes into plastics. BDP is therefore biodegradable and environmentally friendly because they are derived from natural products, and not unnatural like the others. BDP can be starch-based bioplastics (derived from corn starch), cellulose-based bioplastics (cellulose esters and derivatives), protein-base bioplastics (using protein sources such as wheat glutein, casein or milk). The development of bioplastics gives humanity some more eco-friendly alternatives. Bioplastic are ecologically advantageous and can help reduce petroleum pollution and shrink energy footprint we are getting from petroleum pollution. BDP are polyethylene produce from fermentation of a types of agricultural raw materials rather than fossil fuel. In the environment BDP can be completely broken down with a few months by soil macrofloral. The exclusive advantages of BDP are: as a source of barrier before the incorporation of the soil, BDP directly affects soil micro climate and atmosphere as do PET film mulch; after soil incorporation, it acts as a direct input of the physical fragments of carbon and adherent chemicals for the soil microbes. BDM therefore result in enhance microbial activity and enrichment of the soil fungal taxa; also result probably in a

stimulatory effect on microbial activity which is crucial for soil organic matter dynamics e.g., the Geological Cycle, Carbon Cycle.

Highlighting further other types of mulching systems, the paper placed emphasize that the adoptability of BDM to Nigeria is quite feasible and promises huge benefits. And that marketing officers and distribution of the film need to adopt aggressive measure to drum up farmers' awareness and greater advocacy especially to the farmers is very necessary. Government institutions including Federal Ministry of Environment, Agriculture, (using Agric extension officers) and information should integrate the availability and benefit of BDM into their activities and discussions. On the long-term use of BDM would affect the soil ecosystem. This is crucial to crop productivity. As surface barriers, plastic mulches (whether its organic or inorganic) can alter the soil microbial community composite. However, the concerns regard the process of the carbon and nitrogen cycling via micro-climate modification. There is still paucity of knowledge of the ecological consequences of BDM degradation product. The paper concluded by thanking the organiser of the advocacy summit, Elizade University, Ilara-Mokin, Ondo State, Nigeria; and Council for Scientific and Industrial Research, Pretoria, South Africa under the Sustainable Manufacturing and Environmental Pollution Programme of the UK, Foreign, Commonwealth and Development Office (FCDO) partnered with the United Nation Conference on Trade and development (UNCTAD) for the unique opportunity as the guest speaker.

2.2.2 Plenary 1

This plenary session was anchored by Dr. Omotola Dada from Elizade University

Focus of plenary: Biodegradable Mulch Films with Customised Biodegradable Rates in Natural Soil Conditions in Sub-Saharan Countries.

2.2.3 Summary of plenaries

The plenary opening that the BDM film technology is not only for farmers given the market and job opportunities the BDM Films technology provides. The market opportunity for BDM Mulch is estimated to 3.2 billion dollars. The current time of climate changes, flooding, draught and others necessitate the adoption of the BDM Technology. So, it is a massive business for students and the unemployed to service large scale farming as marketers of the BDM products. With available market opportunity coming up, this is an encouragement for all stakeholders present in the summit to take advantage of the technology and products.

2.3 Remarks of stakeholders on the BDM Films Technology

- Professor Olukayode Amund *hinted that BDM films are from biodegradable material (Bioplastic plastics -synthetic products from natural materials- which when spread on the soil in the farm, conserve the soil moisture as well as the nutrient. After some time, the bogs will be broken down by microorganisms, so they do not create nuisance in the environments.*
- Associate Professor Omotola Esther Dada (Lead, Elizade University, SMEP Team) *revealed that BDM films is capable of enriching the soil nutrients after it has been used for a particular cropping season since it is biodegradable. She stated that BDM films*

can be cropped into or ploughed back into the soil after use, and it will degrade and fertilize the soil.

- Mr. Obuma Mbata s*tated that they will be looking forward to collaborating for successful trial and implementation. The project came at a good for the State and their farmers. .*
- Dr Oswald Eneni (A Senior Lecturer, Niger Delta University) w*as excited about the technology as it has potentials to help the state grow agriculturally. He applauded the planning of the summit by the Elizade University and other stakeholder who organized the event.*
- Pastor. Mrs. Peace Oruama (President, Fruit, and Vegetable Association), *stated that there are vast arable lands that needs to be cultivated which are available in the State. She also indicated that weed control has been a major challenge for farmers in the South-South region of the nation because of the high water table of their terrain. Therefore she reiterated that the adoption and use of BDM will assist in controlling weeds on farms.*
- Mr Davidson Ere (Representative of the Minister of Environment and Pollution Control) was *of the opinion that the BDM should be readily available* because the farmers are ready to adopt it.

2.4 Presentation of Awards and Certificates

In recognition of the works of expert and Government Functionaries, awards of excellence were given out to the: 1) Guest Speaker, 2) Honourable Minister of Agriculture and Natural Resources, Bayelsa State 3) Honourable Minister of Environment and Pollution Control, Bayelsa State; 4) The President, All Farmers' Association of Nigeria (ALFAN), Bayelsa State Chapter, Chairman of Fruit, and Vegetable Association, ALFAN, Bayelsa State Chapter, Chairman, Cassava Association, ALFAN, Bayelsa State Chapter, Chairman, Cassava Association, ALFAN, Bayelsa State Chapter,

Furthermore, certificates of attendance were presented to stakeholders and participants who attended the Advocacy Summit.

Access to video recordings and presentation:

https://www.facebook.com/100064058680707/posts/pfbid0qkDgYoQGTHG3HMxXZ53pBQpLmj7yL3s8dPDw9UhnJzwkgr2eK1kHXcjQtLdDY4Wml/?app=fbl)

3 Activity and Schedule for the Stakeholders' Meeting

The order of presentation and activity schedule for the Stakeholders' Meeting, Resource's persons and other participants is available in Table 1.

4 Organizer, facilitators and resource persons

The Advocacy summit was organized by Elizade University, Ilara-Mokin, Nigeria in collaboration with The Council for Scientific and Industrial Research (CSIR), Pretoria, South-Africa. See Table 2 for details of Organizer, Facilitators and Resources persons. Dr O.E Dada, Chaired the Local Organising Committee.

5 Stages, Timeline and Implementation of Stakeholders' Meeting Plan

Please see, details in Table 3.

ANNEXURE

Table 1: **Modified Stakeholders Time Plan and Schedule of Activities on Tuesday 7th February, 2023**

TENTATIVE STAKEHOLDERS' TIME PLAN & SCHEDULE OF ACTIVITIES				
DATE	**SESSION**	**TIME**	**ACTIVITY**	**DESIGNATE**
7th February, 2023	**ARRIVAL OF GUESTS & PARTICIPATANTS**			
7th February, 2023		All-round	**Mistress of Ceremony (MC)**	Mr. Okon, A.
	Morning/ Afternoon	08:00 – 9:30 GMT	**REGISTRATION & WELCOME**	Desk/Registration Officers
		09:31 – 09:35 GMT	Opening Prayer	
		09:36 – 09:50 GMT	Welcome Address: Host and Chair	Professor O.O. Amund
		09:51 – 20:29 GMT	**Goodwill Message** • Hon. Minister of Agriculture and Rural Development, Bayelsa State • Hon. Minister for Environment, Byelsa State, • President, All Farmers' Association of Nigeria, Bayelsa State Chapter • Chairmen of Commodities, All Farmers' Association of Nigeria, Bayelsa State Chapter	
		10:30 – 10:50 GMT	Group Photograph	Photographer
		10:51 – 11:20 GMT	Refreshment/Networking/Exhibition	Catering/Welfare Committee
		11:21 – 12:05 GMT	**Paper 1 Presentation:** Adoption of Customised Biodegradable Mulch (BDM) Films for Natural Soil Conditions Among Farmers in Nigeria	Dr. Sudhakar Muniyasamy

		12:06 – 12:30 GMT	Question & Answers	Dr. Omotola Dada
		12:30 – 13:00 GMT	**Plenary 1 Presentation** 'Biodegradable Mulch Films with Customised Biodegradable Rates in Natural Soil Conditions in Sub-Saharan Countries	Dr. Vincent Ojijo Represented by Dr. Sudhakar, Muniyasamy
		13:00 – 13:05 GMT	**Other Plenaries** Policy Development for the Adoption of Customised Biodegradable Mulch Films for Natural Soil Conditions Among Farmers in Nigeria: Role of Stakeholders.	Dr O. O. Osuolale/ Dr. O. E. Dada
		Presentation of Awards & Certificates		
	DEPARTURE OF GUESTS & PARTICIPANTS			

Table 2: The Organizer, Patron and Facilitators of the Stakeholders' Meeting Held Tuesday 7th February, 2023

S/N	Name	Institution/Organization	Designation
1	Omotola E. Dada, PhD	Elizade University, Nigeria	Organizer/Convener/Chair LOC
2	Taiwo C. Omotoriogun, PhD	Elizade University, Nigeria	Member, LOC
3	Olayinka O. Osuolale, PhD	Elizade University, Nigeria	Member, LOC
4	Vincent Ojijo, PhD	Council for Scientific and Industrial Research Pretoria, South-Africa	Organiser and Facilitator
5	Professor Olukayode Amund	Vice-Chancellor, Elizade University, Nigeria	Grand Patron and Facilitator
7	Mr. Omololu Adegbenro	Registrar, Elizade University, Nigeria	Patron and Supporter
8	Mr. Olusegun Ajeigbe	Bursar, Elizade University, Nigeria	Patron and Supporter
10	Professor Francis Asubiojo	Dean, FBAS, Elizade University, Nigeria	Patron and Supporter
11	Professor Joseph Fabayo	Dean, FHSMS, Elizade University, Nigeria	Patron and Supporter
13	Professor Olatunji Oyemade	Dean, FLaw, Elizade University, Nigeria	Patron and Supporter
14	Dr. Sudhakar Muniyasamy	Senior Research Officer, Council for Scientific and Industrial Research Pretoria, South-Africa	Resource person/Guest speaker

Legend: FBAS, Faculty of Basic & Applied Sciences; SPGS, School of Postgraduate Studies;

FENG, Faculty of Engineering; FLaw, Faculty of Law; LOC, Local Organising Committee

Table 3: Stages, timeline and implementation of plans for the Advocacy summit

SN	HEADING	2022 November	2022 December	2023 January	2032 February	2023 March	2022 April	2023 May	2023 June
1	Advocacy Drive and Lobbying with Stakeholders in Bayelsa and Other neighbouring States								
2	Decision and Planning of Advocacy' Summit								
3	Discussion with patrons, Cost Implication & budgeting								
4	Contact with resource persons, Stakeholders' & invitation								
5	Procurement of Stakeholders' material								
6	Stakeholders' advert and publicity								
7	Invitation letter to Stakeholders'								
8	Reservation: accommodation and flight ticket								
9	Arrival of participants								

10	Advocacy Summit Execution					
11	Departure of Stakeholders					
12	Advocacy Summit Report					

List of Attendance

S/N	Name	Designation	Phone
1.	Jackson Diegbegha2	PM-ADP	
2.	Francis Joshua Kuro	Ministry of Agriculture	
3.	Thompson Timipa	Ministry of Agriculture	
4.	Ikisikpo Love A.	Director, Public Relation Officer, Ministry of Agriculture	
5.	Obuma Mbata	Rep. Hon. Commissioner of Agric; Director, Fisheries Department	
6.	Clarkson M. `Chris	Media, Office of The Honourable Commissioner of Agriculture, Bayelsa State-Nigeria	

7.	Wakedu D. Ere	Department of Flood, Climate Change, Ministry of Environment and Pollution Control, Bayelsa State-Nigeria	
8.	Akeghayifa Diffa	Deputy Director, Ministry of Agriculture	
9.	Alaye Diana Azibapu	Extension Officer Agricultural Development Project (ADP), Bayelsa State-Nigeria	
10.	Deizigha Sam-Pitab	Media, Office of The Honourable Commissioner of Agriculure, Bayelsa State-Nigeria	
11.	Youpele, Sunday	Ministry of Agriculture, Bayelsa State-Nigeria	
12.	Robert Sunday	Extension Officer Agricultural Development Project (ADP), Bayelsa State-Nigeria	
13.	James Ozuagbala Isaiah	Extension Officer Agricultural Development Project (ADP)	
14.	Ogboke Tarila Blessing	Farmer	
15.	Osain Patrick A.	Ministry of Environment and Pollution Control, Bayelsa State-Nigeria	
16.	Oruwari Prince Poubeni	Agricultural Development Project (ADP) Small and Medium Scale Crop, Scientific Officer 1	

17.	Arofah Ebipamoere Mabel	Ministry of Environment and Pollution Control, Bayelsa State-Nigeria	
18.	Yakegba Tari	Farmer, Maize Association, All Farmers Association of Nigeria (AFAN), Bayelsa State-Nigeria	
19.	Okposo Lovely	Farmer, Maize Association, All Farmers Association of Nigeria (AFAN), Bayelsa State-Nigeria	
20	Sini Obi	Farmer, Maize Association, All Farmers Association of Nigeria (AFAN), Bayelsa State-Nigeria	
21.	Duke Canus N.	Farmer, Fruits grower	
22.	Emmanuel Egbo	Farmer, Vegetable and Fruit Association, All Farmers Association of Nigeria (AFAN), Bayelsa State-Nigeria	
23.	Beneneth Asueme	Farmer	
24.	Josephine Onumaegbu	Farmer	
25.	Ogbogi Temples. M.	Farmer	
26.	Pastor Mrs. Peace Oruama	Farmer/President, Vegetable and Fruit Association, All Farmers Association of Nigeria (AFAN), Bayelsa State	

27.	Ebiyerimene I. Miriki	Farmer, Rice Association, All Farmers Association of Nigeria (AFAN), Bayelsa State	
28.	Pinion Izonebi	Farmer, Rice Association, All Farmers Association of Nigeria (AFAN), Bayelsa State	
29.	Chief Dr. Endon ThankGod	Farmer, Cassava Association, All Farmers Association of Nigeria (AFAN), Bayelsa State	
30.	Agaigo Akpoebi Vera	Farmer, Rice Association, All Farmers Association of Nigeria (AFAN), Bayelsa State	
31.	Thompson Timipa	Ministry of Agriculture	
32.	Mac-Donald Taribo	Farmer	
33.	Jackson Dora	Farmer	
34.	Akghayifa Diffa	Farmer	
35.	Nelson Jude	Farmer	
36.	Calib Demmkwo	Farmer	
37.	Gonibo Quemava	Farmer	
38.	Bonny Martha	Farmer	

39.	James Elisha Abasebenihe	Ministry of Agriculture, Bayelsa State-Nigeria	
40.	Amain E. Hannah	Ministry of Agriculture, Bayelsa State-Nigeria	
41.	Dr. Horsfall Eli D.	HOD/Senior Lecturer, Department of Geography and Environmental Management, Niger-Delta University, Wilberforce Island, Bayelsa State	
42.	Joshua Ebidese	Bayelsa State-Nigeria	
43.	Blackie Godday	Ministry of Agriculture, Bayelsa State-Nigeria	
44.	GweGwe Yakime Euchel	Farmer	
45.	Ibibo Charity	Farmer	
46.	Nwoke, C. C.	Farmer	
47.	Inala Richard	Farmer	
48.	Kute Nwoke	Farmer	
49.	Omotola Dada	Convener	
50.	Prof. Olukayode Amund	Vice-Chancellor, Elizade University, Ondo State-Nigeria	

51.	Prof. Francis Asubiojo	Dean, Faculty of Basic and Applied Sciences, Elizade University, Ondo State-Nigeria	
52.	Prof. J. A. Fabayo	Dean, Faculty of Humanities, Social and Management Sciences, Elizade University, Ondo State-Nigeria	
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54.	Dr. Taiwo Crossby	SMEP Consortium partner, Elizade University, Ondo State-Nigeria	
55.	Dr. Sudhakar Muniyasamy	Guest Speaker, Council for Scientific and Industrial Research, Pretoria, South Africa	
56.	Dr. Asabe	Council for Scientific and Industrial Research, Pretoria, South Africa	
57.	Dr. John Maya	Council for Scientific and Industrial Research, Pretoria, South Africa	
58.	Dr. Nomadolo Vuyo	Council for Scientific and Industrial Research, Pretoria, South Africa	
59.	Mr. Osei Ofosu	Council for Scientific and Industrial Research, Pretoria, South Africa	

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62.	Lukky ThankGod	Postgraduate Student, University of Petroleum Resources, Delta State, Nigeria	
63.	Mercy Ebi	Postgraduate Student, University of Petroleum Resources, Delta State, Nigeria	
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65.	ThankGod Ayebanoa	Ministry of Agriculture, Bayelsa State-Nigeria	
66.	Mirabel Johnson	Farmer	
67.	Edward Paul	Farmer	
68.	Cadon Miracle	Farmer	
69.	Sunday Kingsley	Farmer	
70.	Francis Ozeinu	Farmer, Vegetables	
71.	Mary John	Environmental Health Unit, Ministry of Environment and Pollution Control, Bayelsa State-Nigeria	

72.	Claudia Newman	Environmental Health Unit, Ministry of Environment and Pollution Control, Bayelsa State-Nigeria	
73.	Ebiefare Robinson	Environmental Health Unit, Ministry of Environment and Pollution Control, Bayelsa State-Nigeria	
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76.	Marabel Osatohen	Extension Officer Agricultural Development Project (ADP)	
77.	Pigoulen Princess	PeaceWork Non-Governmental Organization, Delta State –Nigeria	
78.	Andrew Hannah	Ministry of Environment and Pollution Control, Bayelsa State-Nigeria	
79.	Joel Noah	Ministry of Agriculture, Bayelsa State-Nigeria	
80.	Nkikoro Badmus	Ministry of Agriculture, Bayelsa State-Nigeria	
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82.	Shalom Davidson	Extension Officer Agricultural Development Project (ADP)	

83.	Favour Godspower	Extension Officer Agricultural Development Project (ADP)	
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85.	Grace Diepreye	Farmer	
86.	Wakama Richard	Farmer	
87.	Emmanuela Terebo	Farmer	
88.	Mary James	Department of Flood, Climate Change, Ministry of Environment and Pollution Control, Bayelsa State-Nigeria	
89.	Georgina Boroface	Farmer	
90.	Titus Divine	Farmer	
91.	Oyinkuro Sunday	Nigerian Television Authority, Bayelsa State, Media	
92.	Dan Ronald	Farmer	
93	Kio Ebiafare	Student	
94	Ndiomu Andrew	President, AFAN, Bayelsa State	

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