

**NATIONAL SCIENCE, TECHNOLOGY, AND  
INNOVATION COUNCIL  
(NSTIC)**

**Project Theme:**

**Promotion of Innovative Energy Solutions**

**Project Title**

**Development of a Biogas Plant for Conversion of Solid Waste to Gas for Cooking and Heating in  
Kenema**

**-A Demonstration Project-**

**Submitted by:**

**University of Sierra Leone**

**Njala University**

**University of Johannesburg (Consulting)**

**Industry Partners**

**October 2023**

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# 1 Team Members and Brief Biographies

## 1.1 Project Team and Implementing Partners

**Table 1: Project Team Members**

Name & Surname	Organization name	Division	Field of expertise & Role in project
Dr Michael A. Conteh	University of Sierra Leone	Engineering	Mechanical and Maintenance Engineering / Project Team Leader
Prof Kelleh Gbawuru Mansaray	University of Sierra Leone	Fourah Bay College	DVC / Energy / Team Member
Prof Alieu Bah	Njala University	Environmental Science	DVC / Environmental Chemistry / Team Member
Prof Daramy Vandi Von Kallon	University of Johannesburg	Engineering	Mechanical Engineering / International Consultant to the Team
Dr Paul Abdul Koroma	University of Sierra Leone	Engineering	Construction/ HoD Civil Engineering/ Team Member
Mr Sahr T. Nyalloma	University of Sierra Leone	Engineering	Materials Engineering and Thermofluids/ HoD Mechanical and Maintenance Engineering/ Team Member
Dr Solomon A. Tucker	University of Sierra Leone	Engineering	Minerals and Mining Systems/ HoD Mining Engineering/ Team Member
Prof Felixina Jonsyn-Ellis	Njala University (Retired Professor)	Environmental Science	Microbiologist/ Retired Prof & Consultant / Team Member
Dr Salmatta Abiodun Ibrahim	University of Sierra Leone	GeoScience	Environmental Engineering / Team Member
Dr Sherriff Kamara	University of Sierra Leone	Engineering	Materials Engineering / Team Member
Dr Salie Mahoi	University of Sierra Leone	Engineering	Structural Engineering / Team Member
Mr Mohamed Dumbuya	Njala University	Environmental Science	Food Toxicology / Team Member

**Table 2: Implementation Partner(s) - Sierra Leone**

Name of main implementation partner ( <i>compulsory</i> )	
Name of organization:	Nabizz Investment
Type of organization:	Engineering and logistics
Contact person within organization:	
Surname:	Nanoh
First Name:	Ahmed
Title:	CEO
Email address:	<a href="mailto:aknanoh@gmail.com">aknanoh@gmail.com</a>
Telephone:	+23276642563

Cell:	+23276642563
Details of organizations contribution to the project:	Implementation partner for technical engineering services

**Table 3: Supporting Implementation Partner(s)**

Name of supporting implementation partner(s) - Environmental	
Name of organization:	Njala Environmental Technicians Sierra Leone (NETSL)
Type of organization:	Environmental Engineering, Occupational Health and Safety and Food Safety
Contact person within organization	
Surname:	Kamara
First Name:	Mohamed Samah
Title:	Mr
Email address:	<a href="mailto:Emeskay05@gmail.com">Emeskay05@gmail.com</a>
Telephone:	
Cell:	+23278615142
Details of organizations contribution to the project:	Environmental Engineering, Agricultural Services

**Table 4: Implementation Partner(s) - South Africa**

Name of main implementation partner	
Name of organization:	GEM Water/Energy Management Solutions (Pty) Ltd
Type of organization:	Business
Contact person within organization:	
Surname:	Paulsen
First Name:	Martin Charles
Title:	Mr
Department / Division:	CEO
Email address:	<a href="mailto:martin@gemawg.co.za">martin@gemawg.co.za</a>
Telephone:	
Cell:	+27 71 362 4580
Details of organizations contribution to the project:	GEM Water Management Solutions (Pty) Ltd

## **1.2 Appendix B: Brief Biographies of Project Team**

The Team is made up of Academics from USL and NU with a combined total of over 150 years of teaching and research experience. The participating industry implementation partners have a combined experience of 20 years in the industrial sectors of water, energy, agriculture, and general engineering services.

### **Dr Michael A Conteh – Team Leader**

Dr Michael A. Conteh is a Senior Lecturer and currently the Dean, Faculty of Engineering and Architecture (FEA), Fourah Bay College, University of Sierra Leone. He received his PhD in Mechanical Engineering at the Southern Illinois University, Carbondale, USA, in 2016. He obtained his MSc from the University of Cape Town, South Africa, in 2003. He joined the Faculty of Engineering and Architecture in 1999 as a Research Teaching Assistant after his BEng (Hons) degree and has served the Department of Mechanical Engineering in various positions from 2004 to date. He possesses over 18 years of research and teaching experience at university level. His primary research interests are in the fields of mechanical engineering design, energy recovery and storage, energy efficiency, renewable energies, and operations research and statistics. He is a member of the Professional Engineering Regulatory Council (PERC) of Sierra Leone. Dr Michael Conteh will lead the Team implementing on this project.

### **Prof Kelleh Gbawuru Mansaray – DVC of FBC/USL**

Prof Kelleh Gbawuru Mansaray is an Engineer and one of the leading pioneers in the design and development of renewable energy programmes in Sierra Leone. He holds a Bachelor of Science degree in Physics from the University of Sierra Leone, Master of Science degree in Renewable Energy Technologies from Carl von Ossietzky University in Germany, a Doctor of Philosophy degree in Biological Engineering (with specialization in Bioenergy Systems) from Dalhousie University in Canada and a one-year experience as a postdoctoral researcher in Chemical Engineering at the University of British Columbia in Canada among other qualifications. He is currently the Deputy Vice Chancellor of Fourah Bay College, University of Sierra Leone.

Prior to his appointment as Deputy Vice Chancellor, Prof. Mansaray served in several administrative leadership positions including Officer-In-Charge of the United Nations Industrial Development Organization in Sierra Leone (2013 – 2016) and Dean of the Faculty of Engineering and Architecture at Fourah Bay College, University of Sierra Leone (2017 - 2022). Prof. Mansaray has impeccable record in the University of Sierra Leone and has brought to the University his breadth and depth of experience both as an Academic and an application-focused researcher with several publications. He has supervised many undergraduate and postgraduate student projects which have resulted in prototypes and public installations especially in the areas of applied technology and renewable energy.

Prof. Mansaray has received several recognitions and awards at national and international levels including a recognition in the coveted global 2023 AD Scientific Index for his passionate contribution to the furtherance of Academia, recipient of a University of Sierra Leone award in recognition of his contribution to research, a United Nations award in recognition of his special contribution to the South-South and Triangular Cooperation and a meritorious candidate of the Natural Sciences and Engineering Research Council of Canada. He is a member of the International Association for Solar Energy Education, a member of the Professional Engineers Registration Council of Sierra Leone and a Fellow of the Sierra Leone Institution of Engineers.

The wealth of experience of Prof Kelleh Gbawuru Mansaray in the field of renewable energy will be of valuable contribution to this project as a key Team member.

### **Prof Alieu Mohamed Bah – DVC of NU**

Prof Alieu Mohamed Bah was born in Moyamba town, Kaiyamba Chiefdom, Moyamba District. He attended the Seven Days Adventist (SDA) Primary School Moyamba and proceeded to the Moyamba Boys Secondary School, where he obtains his GCE ‘O’ level. In 1989 he gained admission in Njala University College where he pursued his BSc in Agricultural Education and graduated in 1993. He also obtained his Master's degree in 2007 in Agricultural Education. He did his PhD at Zhejiang University PRC from 2008 to 2011 where he obtained his doctorate degree in Crop Science.

In 1999 he was appointed as Principal for Kulafai Rashideen Islamic Secondary School in Moyamba town till February 2012. In 2012 he joined the Njala University as lecturer 1 in the Crop Science Department. In 2015 he was promoted to the rank of Senior Lecturer and in 2019 promoted to Associate Professor. In 2015 he was appointed as Head of the Crop Science Department till August 2022. In 2020 he was elected as the Dean for the School of Agriculture and Food Sciences till August 2022. In September 2022 he was appointed as the Deputy Vice Chancellor for Njala Campus and a position he still carries

He has been a member of the Senate and University Court since 2014. He was appointed into various University committees and conducted various investigation. He was also the Acting Radio station manager FM 92.5 for almost two years. He has supervised students at Under graduate, Master's, MPhil and PhD. He has a lot of publications and has in 2022 released three rice varieties using mutation induction technology. He is a member of various organizations both within and outside the University. He has attended so many international trainings and conferences. He is married with children.

Prof Alieu Mohamed Bah is a key Team Member and he will advise the team on aspects of solid waste categorization, agricultural waste processing and green catalyst production from agricultural waste.

### **Prof Daramy Vandi Von Kallon – Associate Professor at University of Johannesburg:**

Prof Daramy Vandi Von Kallon is a Sierra Leonean holder of a PhD in Computational mechanics obtained from the University of Cape Town (UCT) in South Africa in 2013. He holds a year-long experience as a Postdoctoral researcher at UCT during 2013. At the start of 2014 Prof Kallon was formally employed by the Centre for Minerals Research (CMR) at UCT as a Scientific Officer. In May 2014 Prof Kallon transferred to the University of Johannesburg (UJ) as a full-time Lecturer, Senior Lecturer and later Associate Professor in the Department of Mechanical and Industrial Engineering Technology (DMIET). He currently teaches simulation-based modules at this Department to final year of Bachelors and Honours students and serves as Head of the Quality Assurance Committee of the Department. Prof Kallon has more than twelve (12) years' experience in research and ten (10) years of teaching at university level, with industry-based collaborations. He is widely published, has supervised from Masters to Postdoctoral and has graduated two (2) PhDs and twenty (20) Masters Candidates. Prof Kallon's primary research areas are Acoustics Technologies, Design and Development, Water and Energy Technologies and Vibration Analysis. Prof Daramy Vandi Von Kallon will provide expert consultancy support for this intervention project as a representative of the University of Johannesburg.

### **Dr Abdul A Koroma – HoD Civil Engineering**

Dr. Abdul A. Koroma is a Senior Lecturer and currently the Head of Department, Civil Engineering, Fourah Bay College University of Sierra Leone. His specialty is in geotechnical and geoenviromental engineering and teaches subjects such as soil mechanics, geotechnical engineering, foundation engineering and environmental engineering. His research and consultancy work focuses specifically on geotechnical investigation and design for various civil engineering infrastructure and environmental remediation. He has over 15 years of teaching and research experience at the undergraduate level in both the US and Sierra Leone. Dr Abdul A Koroma is a Team Member and will assist the Team in the areas of geotechnical analysis of solid waste dumping sites, biogas plant installation site and remediation of solid waste dumping sites for land use by communities post the project implementation.

### **Dr Sahr Tamba Nyalloma – HoD, Mechanical and Maintenance Engineering**

**QUALIFICATIONS:** **BEng. (Hons)** = Mechanical Engineering, USL; **MSc** - Industrial Engineering, UT, Ohio; **PhD Candidate** (Mechanical Engineering) USL

**PROFESSIONAL ACTIVITIES:** Corporate Member, Sierra Leone Institution of Engineers (**MSLIE**); Engineering Intern (**EI**), Ohio Board of Professional Engineers and Surveyors.

**CONSULTANCIES AND PUBLICATIONS:** (i) *Situational Analysis of Technical Education and Training (TVET) in Sierra Leone* (2015)-Government of Sierra Leone

(GoSL), Ministry of Education, Science and Technology (MEST), and the Islamic Development Bank (IDB)

(ii) Writing textbooks on “*Welding and Metalworks vols. I, II, and III*” for TVET- Government of Sierra Leone (GoSL), Ministry of Education, Science and Technology (MEST), and the Islamic Development Bank IDB)

(iii) Jonjo, R E, & Nyaloma, S T (2020) *Modeling the Effect of Road Excitation on vehicle Suspension System*. International Journal of Engineering, Materials and Manufacturing, 5(1), 19-28.

Mr Sahr Tamba Nyaloma is a Team Member who will assist the team in the design and construction of the biogas plant.

### **Dr Solomon A Tucker – HoD, Mining Engineering**

Dr. Tucker is a mining professional, with over 20 years’ experience in the industry. He holds a PhD in Mining Engineering (2015) from Utah, USA, where he specialized in the optimization of rock fragmentation, and in crushing and milling systems. He earned his MSc in Mining Engineering at the Kwame Nkrumah University of Science and Technology in Ghana (2001); and his B.Sc. (Hons.) in Geology, at the University of Sierra Leone (1994).

With skills ranging from mineral exploration design, orebody modeling, resource/reserve estimation, economic and financial evaluation of investments, surface mine planning and design, to mine-to-mill process optimization, Occupational Health, Risk, and Safety Management Systems, and mine surveying, Solomon carries a rare breadth of perspective in the sector. This perspective is informed by years of hands-on experience in operating mines, as well as by consulting activities undertaken widely in the country. He routinely provides collaborative consulting services to the sector in aspects of Policy, Safety, Surveying, Mine Planning, Geological Resource Evaluation, Ground Fragmentation, Tailings Management, and Mineral Rights Acquisition Processes. Dr. Tucker has had Management and Board level experience across sectors.

Solomon currently serves as the Head of the Department of Mining. He holds a Mine Manager’s Certificate of Competency (Class A), and is a member of the Sierra Leone Institution of Engineers (SLIE), the Society for Mining Metallurgy and Exploration (SME), the International Society for Explosives Engineers (ISEE), and the Sierra Leone Institution of Geoscientists (SLIG).

Dr Tucker is a Team Member and will assist the team in the capacity of development of policy initiatives for dump site management in Kenema City based on landscape surveys and analysis.

### **Prof Felixina Jonsyn-Ellis – Team Member**

Degree: BSc. General Biology Nazareth College, Kalamazoo, Michigan, USA.



Degree: MSc. (Hons) Microbiology University of Muenster, Muenster, West Germany,

Degree: Ph.D. Environmental Microbiology University of Liverpool, Liverpool School of Tropical Medicine,

Scientific positions:

Principal contact of the Partnership of Aflatoxin Control in Africa (PACA) for Aflatoxin elimination in the food chain.

Programme Leader –Microbiology- Sierra Leone Agricultural Research Institute (SLARI)

Part of a team to collect representative sewage samples from capital cities across the globe and other sentinel sites and analyze them for occurrence of antimicrobial resistance genes and other hazards using amongst others, metagenomics analysis.

Partnership with Friedrich-Loeffler Institut, German Federal Institute for Animal Health- Collaboration in Infectious Disease Research and Training

National Project Coordinator for FAO/University of The Gambia project to strengthen the Agriculture Programme

National Project Coordinator for EU project on Environmental and Socio-Economic contribution of Palm Geotextiles to Sustainable development and soil conservation.

Member of the Steering Committee of the Reduction of Emissions from Deforestation and Forest Degradation (REDD+)

Empowerment of rural women (Community Based Organisations) to practice sustainable agriculture, agro-forestry, soil conservation and biodiversity-Global Environment Fund (GEF) Small Grants Mushroom cultivation techniques (after Training Workshop on Mushroom cultivation-Mutare, Zimbabwe)

Designing & Using Geotextile mats to prevent soil Erosion- EU-BORASSUS. Research focus on Sustainable Development, Soil Conservation and Preservation-issues

Lecturing and supervisory Experience (1<sup>st</sup> to final year) in various topics of Biology, Microbiology, Immunology and Parasitology. Supervised several Undergraduates, Masters, and PhD students (locally and internationally).

Published several articles in the field of mycotoxicology and the following in the field of soil conservation, biodiversity, and ecosystem conservation

The potential contribution of palm mat geotextiles to soil conservation and sustainable development, p. 303-306  
In: J.A. Martinez-Casanovas, I. PlaSentis, M.C.R. Martin and J.C.B. Solanes (Eds) Soil and Water Conservation under Changing Land Use, Universitat de Lleida, Spain 2006

Contributions of biogeotextiles to sustainable development and soil conservation in developing countries: the

Borassus Project p 123 – 141 In: E. Tiezzi, J.C. Marques, C.C. Brebbia and S.E. Jorgensen (Eds) Ecosystems and Sustainable Development VI. WIT Transaction on Ecology and the Environment, Vol. 106, 2007

The BORASSUS Project: aims, objectives and preliminary insights into the environmental and socio-economic contribution of biogeotextiles to sustainable development and soil conservation, p 601-610 In: A. Kungolas, C.A. Brebbia and E. Beriatos (Eds) Sustainable Development and Planning III, Vol. 2, Wessex Institute of Technology (WIT Press), Southampton, UK -2007 The potential contribution of palm mat geotextiles to soil conservation and sustainable development, p. 303-306 In: J.A. Martinez-Casanovas, I. PlaSentis, M.C.R. Martin and J.C.B. Solanes (Eds) Soil and Water Conservation under Changing Land Use, Universitat de Lleida, Spain 2006

Contributions of biogeotextiles to sustainable development and soil conservation in developing countries: the Borassus Project p 123 – 141 In: E. Tiezzi, J.C. Marques, C.C. Brebbia and S.E. Jorgensen (Eds) Ecosystems and Sustainable Development VI. WIT Transaction on Ecology and the Environment, Vol. 106, 2007

The BORASSUS Project: aims, objectives and preliminary insights into the environmental and socio-economic contribution of biogeotextiles to sustainable development and soil conservation, p 601-610 In: A. Kungolas, C.A. Brebbia and E. Beriatos (Eds) Sustainable Development and Planning III, Vol. 2, Wessex Institute of Technology (WIT Press), Southampton, UK

Prof Felixina Jonsyn-Ellis, as one of two female participants on this project Team, is a key Team Member and will play the critical role of bioanalysis of the solid waste to be used in the biogas plant to develop a catalysis procedure to speed up the degradation of the solid waste and generate methane gas.

### **Dr Salmata Abiodun Ibrahim – Team Member**

Dr. Salmatta A Ibrahim is a distinguished geologist, hydrogeologist, engineering scientist, environmental geologist, gender and human rights activist, humanitarian worker, and a passionate advocate for scientific solutions to environmental challenges. Dr. Ibrahim's journey in the realm of education and research began in 1993, when her profound interest in the intersections of environmental science, sustainable energy engineering, engineering geology, and climate change emerged. As a postgraduate teaching assistant in the United Kingdom, Dr. Ibrahim passionately imparted knowledge to PhD, Masters, and Undergraduate candidates, specializing in Sustainable Engineering and Sustainable Energy. Her commitment to education is underscored by her dedication to shaping the next generation of leaders in the field of agricultural sustainability. Throughout her career, she has consistently strived to find innovative and practical solutions to scientific complications within her environment.

As a gender and human rights activist, Dr. Ibrahim has consistently advocated for equality and inclusivity within the scientific community. She firmly believes in the power of diversity and recognizes the urgent need for more women to pursue careers in STEAM (Science, Technology, Engineering, Agriculture, and Mathematics). Dr.

Ibrahim tirelessly works to inspire and empower young girls and women to break barriers and embrace scientific professions, fostering a more balanced and inclusive scientific landscape.

In addition to her remarkable professional achievements, Dr. Ibrahim has also made a significant impact as a humanitarian worker. She has actively participated in numerous humanitarian missions, providing critical aid and relief to communities affected by natural disasters and other crises.

Dr. Salmatta Abiodun Ibrahim's comprehensive education, diverse experience, and commitment to innovation makes her an asset to any academic institution seeking to advance the frontiers of Agricultural and Sustainable Engineering. Her passion for education, coupled with her leadership in the agricultural and energy projects, sets her apart as a dynamic and influential figure in the field. Dr. Ibrahim envisions a future where agriculture harmonizes with environmental sustainability, and communities thrive through resilient and efficient farming practices. Her dedication to addressing climate change challenges aligns with her overarching goal of fostering a sustainable and equitable future for agriculture.

Dr Salmatta Abiodun Ibrahim, as one of two female participants on this project Team, is a key Team Member and together with Prof Kallon from South Africa will help develop the biogas plant and gas cooking stove.

#### **Dr Sherriff Kamara**

Dr. Sheriff Kamara is a Sierra Leonean, who studied for his first degrees at Fourah Bah College, University of Sierra Leone and his master's and PhD degrees in the United Kingdom. He is a Mechanical Engineer, an Economist and a management Consultant who has worked in both commercial and engineering industries in Sierra Leone and United Kingdom. He holds the following formal qualifications: Bachelor in Economics, Bachelor in Mechanical and Maintenance engineering, Master in Business Administration (Strategic Marketing), Master of Science in Management Consultancy (Project Management), ACCA (Part 1) and, Ph.D. (Energy Management). He has Provided training in Computer Aided Design software related to mechanical, electrical, and Civil engineering for 11 years. Currently researching on Computational Fluid Dynamics, Finite Element Modelling (with reference to Improved Cook Stoves) and the use of wastes to produce building blocks and structural elements in building construction shuttering and formworks. He has published in peer reviewed journals and presented papers in international conferences. He is an ardent researcher in engineering waste management and a Member of Sierra Leone Institution of Engineers.

Dr Sherriff Kamara is a Team Member and will assist the team in the development of a modern, safe and cost-effective gas cooking stove.

#### **Dr Salie Mahoi**

Dr. Salie Mahoi is a qualified Bridge/Structural Engineer with over 20 years of experience in structural engineering and construction supervision. Dr. Mahoi also has a wealth of experience in teaching Engineering

Mathematics at tertiary level and has co-supervised several Undergraduates, Masters, and PhD students. He is currently lecturing Engineering Mathematics and structural engineering at Fourah Bay College, University of Sierra Leone. Dr. Mahoi was also lead Engineer in the preliminary design of the 8km long lungi bridge to be proposed to be constructed across the river Rokel in Sierra Leone. He has also carried out designs and supervision of pedestrian bridges in Freetown and South Africa. Dr. Mahoi has a doctorate degree in structural engineering from the University of Cape Town in South Africa. His PhD work relates to the designing of reinforced and steel structures to resist or minimise blast loading caused by explosive detonation. It was a three-part work involving Theoretical, Numerical and Experimental investigations. Two commercially available finite element software packages namely ABAQUS/Explicit and AUTODYN were used to simulate the experiments with excellent results. Dr. Mahoi is also highly knowledgeable in the use of Robot Finite Element Analysis Software together with CSI and Midas Civil bridge software. He has successfully managed and implemented multi-million-rand projects in the public sector field in South Africa, Botswana, and Sierra Leone. He has been working on various projects with Knight Piesold (South Africa) in structural analysis and design of structures using ROBOT finite element programme. Dr. Mahoi worked for GIBB Engineering on the Ingula Pump storage project, a 1334 MW hydroelectric dam as a structural engineer using STRAND 7. Dr. Mahoi has an in-depth knowledge of Finite Element Analyses and applications to engineering solutions.

Dr Salie Mahoi is a Team Member and will be involved in supervision of the construction of the biogas plant building, facilities layout, and structural analysis.

#### **Mr Mohamed Dumbuya – Secretary to the Project Team**

Mr Mohamed Dumbuya is a Lecturer at Njala University Sierra Leone for past fifteen years serving in Environmental Chemistry Department, School of Environmental Sciences now change to Basic Sciences. He is currently a doctoral candidate with the Federal University of Technology Minna Nigeria working on: ***Heavy metals and Mycotoxin in soils and rice cultivated in Sierra Leone Inland Valley Swamp in all districts in Sierra Leone***. He lectures courses on Environmental Sciences, Environmental Toxicology, Soil Chemistry, and Introduction to water chemistry for the past ten years. He holds a seven years membership with the International Association for Food Protection (IAFP) and currently belongs to AFoSaN Food Safety Group, Sierra Leone-European Union program on Chemical, Biological, Radiological and Nuclear (CBRN) Regional Training on High-Risk Chemical facilities-Center of Excellence: With Certificates of completion as Level-1 Industrial Risk Mitigation Trainee, representing Njala University Sierra Leone as certified by EU-CBRN and UNDPSL team of experts. Mr Dumbuya serves as core member for reputable scientific committees on standards development and networks in Sierra Leone and also the Founder of Njala Environmental Technician Sierra Leone (NETSL) consortium, a registered independent consultancy firm, that is conducting research on Environmental Impact Assessment and industrial safety management for work places in Sierra Leone since 2011 to date with the EPA SL. He has experience in supervising and assessing of industrial risk of pollution, contaminants, and work place

exposure management for both wet and dry working environments including national environmental auditing for project sustainability.

Mr Mohamed Dumbuya will serve as Secretary to the project Team for this project.

## **International Partner**

### **Mr Martin Charles Paulsen – CEO of Gem Water:**

Martin Paulsen is a multifaceted individual with a diverse career spanning law, trade unions, and business ventures. Born with a passion for legal studies, he earned his Law Degree from the University of Western Cape in 1988, setting the foundation for his future endeavors. After completing his education, Martin delved into the world of law, specialising in contract law and dispute resolution. His expertise in these areas laid the groundwork for a successful career in advocacy and negotiation.

In 1991, Martin made a significant shift in his career by joining the National Union of Metal Workers, where he aimed to advocate for workers' rights and fair labor practices. His dedication and leadership abilities did not go unnoticed, and he later moved on to the South African Clothing and Textile Workers Union. As he progressed in the trade union movements, Martin's skills as a chief negotiator came to the fore, allowing him to play a crucial role in various sectors of the trade unions. Martin's journey continued to evolve, and he later assumed the esteemed position of Secretary General of the National Union of Leather Workers. In this capacity, he made significant contributions to the welfare of leatherworkers, striving to improve their working conditions and ensure their rights were protected.

Expanding his reach beyond national boundaries, Martin was appointed as the International Labour Organisation (ILO) coordinator for Sub-Saharan Africa. This role gave him the opportunity to work on a broader scale, addressing labor issues and promoting better working standards throughout the region.

After an impressive 15 years in the Trade Union Movements, Martin decided to explore the world of business. Drawing upon his experiences, knowledge, and entrepreneurial spirit, he ventured into various enterprises. As a Director of several companies like DAUBO INVESTMENT HOLDING COMPANY, LEAPRO PROPERTIES, and LEAFUND PROPERTIES, Martin demonstrated his acumen in managing businesses and navigating complex corporate landscapes.

Beyond his directorial roles, Martin's ingenuity and innovation led him to found several companies of his own. Quad Lock Building Systems and International Concrete Forms were construction companies specialising in alternative building technologies, GEM WATER MANAGEMENT SOLUTIONS, company that specializes in the manufacturing in the technology of Atmospheric Water Generators (AWG), and GEM HYDROPOWER are some of the ventures he pioneered. Each of these companies catered to different sectors, reflecting his commitment to environmental sustainability and infrastructure development.

Throughout his remarkable journey, Martin Paulsen has been a driven and dynamic force, making an indelible impact on the Labour Law, and business landscapes. His dedication to justice, fair labor practices, and innovative entrepreneurship has left a lasting legacy, inspiring many to follow in his footsteps.