



**2025 Annual Meeting of African Science Academies
AMASA 2025**

AMASA 2025 CONFERENCE REPORT

WATER AND GREEN HYDROGEN Scientific Pathways for Sustainable Development in Africa

Dates: 17-21 November 2025

Venue: Hassan II Academy of Science Technology, Rabat, Morocco

Host: Hassan II Academy of Science and Technology

Organised by: Network of African Science Academies (NASAC)



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AMASA 2025 CONFERENCE REPORT
Water and Green Hydrogen
Scientific Pathways for Sustainable Development in Africa

ISBN: 978-9914-9636-9-4

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Oriak Books Limited

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ACKNOWLEDGMENTS



NASAC extends its sincere appreciation to the Co-Chairs, the Organising Committee, and the Scientific Committee for their leadership and commitment in the planning and delivery of AMASA 2025. Their collective contributions—ranging from strategic guidance and programme design to scientific review and coordination – were instrumental in ensuring the conference’s intellectual quality, relevance, and overall success.

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Permanent Secretary of Hassan II Academy of Science and Technology

Prof. Mahouton Norbert Hounkonnou

President of Network of African Science Academies

Organising Committee

Prof. Rajaa El Moursli (*Vice-President, NASAC/Hassan II Academy*)

Prof. Abdeslam Houmada (*Hassan II Academy*)

Prof. Rajae El Aouad (*Hassan II Academy*)

Dr. Jackie Kado (*NASAC*)

Scientific Committee

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East Africa: UNAS - Prof. Grace Kyomuhendo (Uganda)

West Africa: NAS - Prof. Ekanem Ikpi Braide (Nigeria)

Southern Africa: MAST - Dr. Deoraj Caussy (Mauritius)

AMASA 2025, hosted in Rabat, Morocco by the Hassan II Academy of Science and Technology and organised by NASAC, brought together African and international scientists, policymakers, and partners around the theme **Water and Green Hydrogen - Scientific Pathways for Sustainable Development in Africa**. The conference examined how water security and clean energy transition are central to Africa's climate resilience, economic transformation, and long-term sustainability.

Opening keynotes framed water and green hydrogen as interdependent systems that must be planned together, especially in water-scarce regions. Throughout the conference, participants stressed that technology alone is not enough – progress depends on linking science with governance, policy coherence and social responsibility. Discussions on water security highlighted innovations in digital tools, community resilience, indigenous knowledge and regional cooperation. Water was repeatedly identified as the foundation for health, food security, economic growth and any future hydrogen economy. Sessions on green hydrogen showed that energy transition is both a technical and social process, requiring supportive regulation, skills development, public trust and careful management of water-energy trade-offs.

The water-energy-climate nexus sessions demonstrated that Africa's development pathway must be systems-based. Case studies on clean cooking, net-zero planning, climate-smart agriculture and decentralised energy illustrated the need to manage trade-offs transparently and based on evidence. Policy and governance discussions emphasised the importance of strong legal frameworks, institutional coordination and regional cooperation to translate research into action. Education and capacity development emerged as critical, with strong calls for early education, interdisciplinary training, mentorship and better conditions to retain and circulate African talent.

AMASA 2025 also conferred the **AMASA Prize for Emerging and Informative Science in Africa** on **Prof. Driss Ouazar**. The Prize Jury selected him as the Winner, with **Prof. Nadia Yousfi** and **Prof. Fidele Ntie-Kang** recognised as First and Second Runners-Up, respectively.

The award acknowledged their scientific contributions as both innovative and socially relevant, exemplifying research that advances knowledge while informing society and policy.

The conference concluded by reaffirming the role of African science academies as key bridges between science and policy, and by calling for integrated approaches to water, energy and climate challenges that are evidence-based, inclusive and regionally coordinated.

2.1 Background

The Annual Meeting of African Science Academies (AMASA) is the flagship convening platform of the Network of African Science Academies (NASAC), designed to advance science-informed policymaking in Africa. Since its inception, AMASA has brought together distinguished scientists, policymakers and development partners to deliberate on issues of strategic importance to the continent, generate actionable recommendations and strengthen the collective voice of African science academies in policy spaces. The platform sits at the intersection of science, policy and diplomacy, enabling African knowledge systems to inform development choices.

The 2025 edition of AMASA was convened under the theme: **Water and Green Hydrogen – Scientific Pathways for Sustainable Development in Africa.**

This theme reflected two deeply interconnected priorities for Africa's future. Water security remains foundational for life, agriculture, health, ecosystems and economic development, yet millions of Africans still lack reliable access to clean and safe water. At the same time, green hydrogen – produced using renewable energy such as solar and wind – represents a frontier opportunity for Africa to participate in the global low-carbon energy transition while advancing industrialisation and wealth creation.

Within the AMASA framework, this theme provided an opportunity to address the water-energy-climate nexus through interdisciplinary and cross-sectoral dialogue. By convening scientists, policymakers and development stakeholders working in water management, clean energy, climate resilience, infrastructure and innovation, AMASA 2025 sought to unlock synergies and propose science-driven pathways for sustainable and inclusive development.

Hosting AMASA 2025 in Morocco added strategic depth to this agenda. Morocco is widely recognised as a continental leader in renewable energy, with flagship investments in solar power, desalination and green hydrogen research. Its national commitment to sustainable water and energy solutions provided a living laboratory for African learning. Rabat, the seat of the Hassan II Academy of Science and Technology, offers not only symbolic prestige but also proximity to research institutions, policymakers and innovators driving Morocco's environmental transformation. The visit to Tangier's industrial port – a green logistics and automotive hub – further demonstrated the practical integration of water and clean energy solutions in real-world settings.

2.2 Objectives

AMASA 2025 was designed around the following core objectives:

- **Scientific Deliberation:** To examine recent scientific developments in water resource management and green hydrogen technologies relevant to African contexts.
- **Policy Engagement:** To discuss policy frameworks and governance arrangements that can support sustainable water and energy systems.
- **Capacity Enhancement:** To identify strategies for strengthening research, education and innovation capacities in water and clean energy fields.
- **Collaboration and Networking:** To foster partnerships among African science academies, governments, international institutions and industry stakeholders.
- **Field Insight:** Provide practical exposure through a site visit to Morocco's car manufacturing port, illustrating industrial applications of green hydrogen.

These objectives guided the design of plenary sessions, expert panels, and discussions throughout the conference.

AMASA 2025 structured its scientific and policy discussions around five interconnected thematic areas:

3.1 Water Security and Management

- Innovations in water harvesting, purification and distribution.
- Integrated water resource management and transboundary cooperation.
- Climate change impacts water availability and strategies for resilience.

3.2 Green Hydrogen Development

- Technological advancements in green hydrogen production and storage.
- Infrastructure and investment opportunities in the hydrogen economy.
- Safety standards and regulatory considerations.

3.3 Water-Energy-Climate Nexus

- Synergies between water and energy systems under climate change.
- Sustainable agriculture and food security through integrated resource management.
- Environmental impacts and mitigation strategies.

3.4 Policy and Governance

- Development of coherent policies for water and energy sectors.
- Role of science academies in advising national policies.
- Financing mechanisms and public-private partnerships.

3.5 Education and Capacity Enhancement

- Strengthening STEM education and research in water and energy fields.
- Gender inclusivity and youth engagement.
- Regional research networks and centres of excellence.

These themes framed the plenary and panel discussions during the conference.



4.1 Structure of Activities

AMASA 2025 comprised three core components:

4.1.1 *NASAC Governance Meetings*

- NASAC Board Meeting.
- NASAC General Assembly (GA).

These were held alongside AMASA to enable statutory business, strategic alignment and member coordination.

4.1.2 *Field Visit – Tangier Industrial and Port Complex*

Participants undertook a site visit to Tangier’s industrial port and car manufacturing hub, a flagship example of green logistics and clean industrial development.

The visit illustrated:

- Integration of renewable energy into industrial systems.
- Emerging applications in manufacturing and logistics.
- Water and energy efficiency in large-scale industrial operations.

This field visit provided practical grounding for the conference theme, allowing participants to observe how water and clean energy solutions are being implemented at scale.

4.1.3 *Scientific Conference*

- **Day 1:** Opening ceremony, plenary sessions and thematic panels.
- **Day 2:** More thematic panels, plenary sessions, AMASA 2025 Prize and Closing ceremony.

4.2 Participants

The conference brought together:

- Leaders of science academies from different African countries.
- Officials of several African Embassies and policymaker’s resident in Morocco.
- Early Career Researchers and academics.
- Industry leaders and entrepreneurs.
- Civil society and development partners.

This diverse participation strengthened dialogue between science, policy and practice across the continent.

5.1 Opening Ceremony

The conference started with the National Anthem of the Kingdom of Morocco, marking the formal commencement of AMASA 2025 and affirming the host country's commitment to science-led sustainable development.

This was followed by a series of welcome speeches and goodwill messages that set the scientific and diplomatic tone of the conference.

5.1.1 Prof. Omar Fassi-Fehri

Permanent Secretary of the Hassan II Academy of Science and Technology and Co-Chair of AMASA 2025, welcomed participants to Rabat and highlighted Morocco's journey in renewable energy, water innovation, and green industrialisation. He emphasised the symbolic and practical importance of hosting AMASA at a time when Africa is redefining its development pathways through science and sustainability.



5.1.2 Prof. Mahouton Norbert Hounkonnou,

President of NASAC and Co-Chair of AMASA 2025, reaffirmed AMASA's role as Africa's premier science-policy platform. He emphasised the responsibility of science academies to move beyond knowledge generation to active policy engagement, especially on issues as critical as water security and energy transition.



5.1.3 Dr. Doreen Strauhs-Heymann (BMBF, Germany)

Dr. Strauhs-Heymann underlined the importance of genuine international scientific cooperation in addressing global challenges. She stressed the need for strong African scientific institutions to shape global agendas on climate, water and energy.

5.1.4 Dr. Jaume Fortuny (OBREAL)

Dr. Fortuny spoke on the value of interregional collaboration between Africa, Europe and the Mediterranean region, particularly in research, innovation and capacity development around green technologies.

5.1.5 Prof. Masresha Fetene (InterAcademy Partnership – IAP)

Prof. Fetene emphasised the global academy community's support for Africa's science systems and highlighted the strategic importance of AMASA as a bridge between national academies and global science-policy platforms.



Participants at the event

5.2 Opening Keynotes: Framing the Conference

AMASA 2025 formally commenced with two keynote addresses that set both the scientific and policy frame for the conference. Together, the keynotes established the interdependence between water systems and green hydrogen development as a central lens for Africa's sustainable development pathway.

5.2.1 FIRST KEYNOTE ADDRESS

Navigating the Scientific and Technological Frontiers of Water Desalination and Green Hydrogen Coupling

By Prof. Moustapha Bousmina (Immediate Past President of NASAC, Morocco)

Prof. Bousmina explored how water desalination and green hydrogen production can be designed as mutually reinforcing systems rather than competing users of resources. He demonstrated that in water-scarce regions, desalination is not optional but foundational, and that its sustainability depends on coupling it with renewable energy. He argued that using clean energy to power desalination makes it possible to expand water access without increasing carbon emissions. At the same time, he showed that hydrogen strategies cannot be pursued in isolation from water planning, since hydrogen production places new demands on already-stressed water systems. His address emphasised the need for African countries to invest deliberately in research, infrastructure and human capacity so that these technologies are not merely imported but adapted to local conditions. Drawing on Morocco's experience, he illustrated how long-term vision, political commitment and scientific capacity can align to build large-scale, integrated water-energy systems.



Prof. Moustapha Bousmina

5.2.2 SECOND KEYNOTE ADDRESS

Water Use and Quality for Green Hydrogen Production

By Prof. Nadia Yousfi (Morocco) and Dr. Adelilah Slaoui (France)

This joint keynote examined the technical, environmental and social dimensions of water use in green hydrogen production. The speakers explained the quantity and quality requirements of water for electrolysis and showed how these requirements shape decisions about whether to use freshwater, treated wastewater or desalinated seawater. They highlighted the risks of diverting scarce freshwater from communities and agriculture to industrial hydrogen projects, especially in water-stressed regions. Their analysis stressed that technical feasibility alone is not sufficient: water choices must be socially acceptable, environmentally responsible and supported by clear regulatory frameworks. They emphasised that hydrogen can only be described as “green” if it is produced in ways that protect water resources and ensure fair access, particularly for vulnerable populations.

Together, these opening keynotes framed AMASA 2025 around a central message: Africa’s future in water security and clean energy will depend not only on technological innovation, but on the integration of science, policy, governance and social responsibility.



5.3 SESSION ONE: Water Security and Management

Session Chair: *Prof. Abdeslam Hoummada (Morocco)*

Session One examined how science, technology, policy and community action can come together to strengthen water security and resilience across Africa. The discussions positioned water not only as a basic human need but as a strategic resource that underpins health, food security, economic development and the emerging green hydrogen economy. Participants reflected on the role of science academies in supporting governments to design water policies that are evidence-based, context-sensitive and socially inclusive.

5.3.1 **SafeWater SOS: A Multilingual Mobile Application Powered by AI for Water Safety and Emergency Response in Africa**

By Dr. Malan Ketcha Armand Kablan (Côte d'Ivoire)

Dr. Kablan introduced SafeWater SOS, a multilingual, AI-powered mobile application designed to improve water safety and emergency response. He explained how artificial intelligence is used to assess water-related risks and generate timely guidance for users, particularly in crisis situations. The multilingual design was presented as a deliberate choice to improve accessibility across Africa's diverse linguistic communities. The system's capacity for real-time alerts demonstrated how digital innovation can strengthen early warning and response mechanisms. Dr. Kablan emphasised the potential for scaling the application across countries with different regulatory and institutional settings, showing how digital tools can complement traditional water management systems, especially in disaster-prone and underserved areas.



5.3.2 Strengthening Community Health and Water Resilience in Fragile Ecosystems: Insights from a Medical Mission in Guinea, Conakry and Sierra Leone

By Dr. Neveen Shalalfa (Palestine)

Dr. Shalalfa shared experiences from medical missions in fragile ecosystems in West Africa, focusing on the close relationship between water quality and community health. She showed how unsafe water contributes directly to disease burden and undermines already strained health systems. Her presentation highlighted the challenges of providing safe water in post-crisis and fragile settings, where infrastructure is weak and institutional capacity limited. She emphasised the importance of community-based approaches to building water resilience and integrating health, water and social systems in both emergency response and long-term recovery. Her case studies illustrated that water insecurity is not only a technical problem, but a deeply human one that affects the most vulnerable first.



5.3.3 PANEL DISCUSSION ON SECURING AFRICA'S WATER FUTURE: WHICH INTERVENTION MATTERS MOST TODAY?

Moderator: *Prof. Nadia Yousfi (Morocco)*

Panelists: *Dr. Peter Okoli (Nigeria) and Prof. Mohamed Ait Kadi (Morocco)*

The panel examined strategic priorities for strengthening Africa's water security. Discussions addressed how infrastructure investment must be matched with strong governance and institutional reform. Panelists stressed the role of science in informing water policy and long-term

planning, as well as the importance of involving communities in water management decisions. Financing emerged as a recurring concern, with emphasis on the need for sustainable funding models that combine public investment, private sector participation and development finance. The panel agreed that no single intervention is sufficient; instead, Africa needs integrated approaches that link science, policy, infrastructure, financing and community engagement.

panel discussion was followed by concluded a plenary Q&A in which participants explored how digital innovations such as SafeWater SOS can be scaled responsibly, how health data can be better integrated into water planning and how science-policy interfaces can be strengthened to support effective water governance across the continent.

5.3.4 African Indigenous Plants for Sustainable Water Purification: A Review of Traditional and Modern Approaches

By Dr. Ali Abdalla (Sudan)

Dr. Abdalla examined how African indigenous plants have long been used by communities to clarify and disinfect water, and how modern science is now validating many of these practices. He showed that traditional knowledge systems contain practical, low-cost solutions that are especially relevant for rural and low-resource settings. Drawing on scientific studies, he demonstrated the antimicrobial and coagulating properties of certain indigenous species and how these can be standardised for wider use. He argued that integrating traditional knowledge with modern research can produce locally appropriate water treatment solutions that are affordable and culturally accepted. At the same time, he stressed the importance of protecting indigenous knowledge systems, ensuring fair recognition and strengthening quality assurance so that plant-based solutions meet safety and public health standards. His presentation highlighted Africa's biodiversity and cultural heritage as underutilised assets for solving water challenges in sustainable ways.

5.3.5 Project for Integrated and Sustainable Management of Water Resources in Guinea and West Africa

By Prof. Mamadou Aliou Balde (Guinea)

*Presentation delivered in French and titled: **Projet de Gestion Intégrée et Durable des Ressources en Eau en Guinée et en Afrique de l'Ouest***

Prof. Balde presented a regional initiative focused on the integrated and sustainable management of water resources in Guinea and across West Africa. He emphasised that many of the region's major water systems are shared across national borders, making cooperation essential. His presentation described basin-level approaches that bring together

multiple countries and institutions to manage water as a shared resource. He highlighted the importance of institutional coordination among national governments, regional bodies and local authorities, as well as the need for strong community engagement in water governance. Prof. Balde also addressed the pressures created by climate variability, population growth and competing demands from agriculture, cities and industry. The project demonstrated that regional cooperation is not optional but necessary for managing shared water resources in a way that is equitable, resilient and sustainable.

5.3.6 PANEL DISCUSSION ON HOW CAN AFRICA BALANCE WATER DEMAND, SUPPLY AND SUSTAINABILITY?

Moderator: *Dr. Doyin Odubanjo (Nigeria)*

Panelists: *Prof. Oumar Sock (Senegal), Prof. Ratemo Michieka (Kenya), and Dr. Godefroid Gahungu (Burundi).*

The panel explored how African countries can respond to rapidly growing water demand while protecting ecosystems and future generations. Panelists discussed integrated water resource management as a guiding framework for policy and planning, stressing that water must be managed across sectors rather than in silos. They examined the pressures created by urbanisation, agriculture and industry, and how these competing demands require careful prioritisation and negotiation. Climate adaptation featured strongly, with emphasis on building water systems that can withstand droughts, floods and long-term climate shifts. Financing and governance were identified as critical enablers, with calls for sustainable funding models and stronger institutions. The panel concluded that balancing water demand and sustainability requires evidence-based policy, active community participation and long-term political commitment rather than short-term fixes.



Panel discussion (from left to right): Dr. Doyin Odubanjo, Prof. Oumar Sock, Prof. Ratemo Michieka, and Dr. Godefroid Gahungu

5.4 SESSION TWO: Green Hydrogen Development

Session Chair: *Prof. Ekanem Ikpi Braide (Nigeria)*

Session Two examined the scientific, social and policy conditions required to establish a viable green hydrogen sector in Africa. The discussions emphasised that hydrogen development is not only a technological challenge but also a social, institutional and governance project, requiring coordinated action across science, policy, finance and society.

5.4.1 **Sociotechnical Barriers to Hydrogen Energy Transition in Nigeria: A Path Analysis Approach**

By Dr. Chux Daniels (South Africa)

Dr. Daniels analysed the sociotechnical factors shaping hydrogen energy transition in Nigeria using a path analysis approach. He showed how institutional and regulatory constraints can slow hydrogen adoption even when technology is available. His analysis examined the readiness of infrastructure and technological systems, as well as levels of social acceptance and public perception. He demonstrated that policy, markets and technology interact in complex ways, and that weaknesses in one area can undermine progress in others. His central argument was that hydrogen transition is not simply a technical shift, but a social and institutional transformation that requires coordinated reforms in policy, infrastructure, finance and public engagement.

5.4.2 **Biocultural Pathways for Green Hydrogen Adoption in Africa: A Medical Anthropology Perspective on Water, Health and Energy Justice**

By Dr. Emmanuel Busera (Kenya) – Virtual Presentation

Dr. Busera approached green hydrogen from a biocultural and health-justice perspective, linking energy choices to water use, health outcomes and social equity. He explained how water and energy carry cultural meanings in African societies and how large-scale energy projects can disrupt social and ecological relationships if these meanings are ignored. He warned of the risk that green hydrogen could reproduce or deepen inequality if benefits and burdens are unevenly distributed. His presentation called for hydrogen planning that is grounded in justice, health considerations and community participation, arguing that technological success must be matched by social legitimacy and ethical responsibility.

5.4.3 **PANEL DISCUSSION ON WHAT WILL IT TAKE TO BUILD A VIABLE GREEN HYDROGEN INDUSTRY IN AFRICA?**

Moderator: *Dr. Thabile Ndlovu (Eswatini)*

Panelists: *Prof. Francois Xavier Etoa (Cameroon) and Prof. Rajaâ El Moursli (Morocco)*

The panel examined what Africa needs to participate meaningfully in the global green hydrogen economy. Panelists discussed investment and financing models for hydrogen infrastructure and stressed the importance of policy coherence and regulatory certainty to attract long-term investors. They highlighted the need for strong research systems and skills development to support local innovation rather than dependence on imported technologies. Regional cooperation and market integration were identified as essential for building viable hydrogen markets at scale. The panel also addressed the challenge of managing water-energy trade-offs in hydrogen production, especially in water-stressed regions.

Panelists agreed that Africa's comparative advantages – abundant renewable energy potential, a young workforce and growing research capacity – must be matched with strong governance, strategic investment and inclusive planning if hydrogen is to become a driver of sustainable development.

The session concluded with a plenary Q&A, during which participants engaged speakers on policy design, financing options, social acceptance and the water implications of hydrogen development.



Panel discussion (from far left): Prof. Rajaâ El Moursli, Prof. François Xavier Etoa, Dr. Thabile Ndlovu (Eswatini), and Prof. Ekanem Ikpi Braide

5.5 SESSION THREE: Water-Energy-Climate Nexus

Session Chair: *Prof. Nadia Yousfi (Morocco)*

Session Three examined how water, energy and climate systems are deeply interconnected and how Africa can design integrated strategies that support sustainability, resilience and equitable development. The session showed that choices made in one sector – such as energy technology, land use or agricultural practice – have direct consequences for health, ecosystems and long-term development.

5.5.1 Knowledge, Perception and Awareness of the Potential Harm of Smoke Inhalation from Indoor Air Pollution: Among Cooks in Solid-Fueled High School Kitchens in the Kumasi Metropolis, Ghana

By Prof. Marian Asantewah Nkansah (Ghana)

Prof. Nkansah presented research on indoor air pollution in school kitchens that rely on solid fuels. She demonstrated that cooks are exposed to high levels of harmful smoke, while awareness of the long-term health impacts remains limited. Her findings showed clear links between energy choices, health outcomes and environmental conditions. By focusing on institutional kitchens, she highlighted that clean cooking is not only a household issue but also a public-sector responsibility. She emphasised that transitions to cleaner energy sources are also public health interventions that can reduce disease burden and improve working conditions, especially for women.

5.5.2 The Pathway for the Attainment of Net Zero Carbon Emission in Africa Using Renewable and Low-Carbon Energy Resources: The Case of Nigeria

By Prof. Abubakar Sambo (Nigeria)

Prof. Sambo outlined possible pathways for achieving net-zero emissions in Africa, using Nigeria as a case study. He showed how renewable and low-carbon energy options can support both development and climate goals. His presentation examined the policy and investment choices needed to drive this transition, as well as the importance of infrastructure development and grid modernisation. He emphasised the role of research and innovation in adapting technologies to African contexts. His central message was that Africa does not need to choose between development and climate responsibility; with strategic planning, it can pursue both.

5.5.3 PANEL DISCUSSION ON WHAT IS THE RIGHT MIX FOR AFRICA'S WATER-ENERGY-CLIMATE NEXUS FOR A SUSTAINABLE FUTURE – AND WHY?

Moderator: *Dr. Deoraj Caussy (Mauritius)*

Panelists: *Prof. Driss Ouazar (Morocco), Prof. Amadou Hama Maiga (Mali), and Prof. Moctar Toure (Senegal)*

The panel discussed how African countries can balance water, energy and climate priorities in ways that reflect their diverse contexts. Panelists emphasised the need for integrated planning across sectors rather than isolated decision-making. They highlighted the importance of climate adaptation and mitigation strategies that are realistic and context specific. Technology choices were discussed in terms of suitability for African environments, economic conditions, and social needs. The panel stressed that policy coherence across ministries is essential if countries are to manage the water-energy-climate nexus effectively. They concluded that the “right mix” will differ from country to country but must always be guided by science, climate realities and social priorities.



5.5.4 Effects of Arbuscular Mycorrhizal Fungi (AMF) on Sorghum: Leaf Area Index under Conservation and Conventional Tillage Systems, Filabusi, Zimbabwe

By Dr. Annabel Banda (Zimbabwe)

Dr. Banda presented research on how AMF coating and inoculation affect sorghum growth under different tillage systems. Her findings showed improved plant growth under conservation agriculture compared to conventional tillage. She demonstrated the links between soil health, water efficiency and climate resilience, showing how biological solutions can support climate-smart agriculture. Her work highlighted that sustainable agriculture depends not only on technology but also on ecological processes that improve soil and water systems.

5.5.5 Assessing the Feasibility of Small and Micro Hydropower Plants for Rural Electrification in Zimbabwe

By Mr. Hagreaves Kumba (Zimbabwe)

Mr. Kumba examined the potential of small and micro hydropower plants to expand rural energy access. He showed that in selected sites, such systems can be technically and economically feasible. His presentation highlighted the role of decentralised energy solutions in supporting rural development and reducing reliance on large centralised systems. He also discussed environmental considerations, noting that small-scale hydropower can have lower ecological impact when properly designed and managed.

5.5.6 PANEL DISCUSSION ON WHICH TRADE-OFFS MUST BE PRIORITIZED IN WATER-ENERGY-CLIMATE MANAGEMENT?

Moderator: *Prof. Grace Bantebya Kyomuhendo (Uganda)*

Panelists: *Prof. Ishmael Masesane (Botswana), Prof. Paul Baki (Kenya), and Prof. Cyprian Katongo (Zambia)*

This panel focused on the difficult choices that governments must make when managing competing demands for water, energy, and climate goals. Panelists discussed how to balance development needs with environmental protection, and how to ensure equity in access to water and energy. They examined tensions between long-term sustainability and short-term political or economic pressures. The role of science academies in advising governments on these trade-offs was emphasised, particularly in providing evidence-based guidance for complex decisions.



The panel discussion was followed by a plenary Q&A, during which participants engaged panelists on how to manage competing priorities while advancing sustainable and inclusive development.

5.6 SESSION FOUR: Policy and Governance

Session Chair: *Prof. Rajaâ El Moursli (Morocco)*

Session Four focused on the policy and governance frameworks needed to translate scientific knowledge into effective action on water and green hydrogen. The session emphasised that without enabling laws, institutions and cooperative mechanisms, even the best scientific and technological solutions cannot achieve scale or long-term impact.

5.6.1 Influence of Legislative Framework in the Efficient Use of Energy and Water Use Efficiency of Horticultural Processing by Micro, Small and Medium Enterprises in Kenya

By Dr. Linda Obiero (Kenya)

Dr. Obiero examined how legislative and regulatory frameworks shape the efficiency with which micro, small and medium enterprises (MSMEs) in Kenya use energy and water in horticultural processing. She showed that clear and supportive regulations can encourage enterprises to adopt efficient technologies and practices, while weak or inconsistent frameworks can slow innovation and investment. Her presentation highlighted how laws influence access to incentives, financing and technical support for MSMEs. She argued that policy design must consider the realities of small enterprises, which often operate with limited capital and technical capacity and that well-crafted legislation can play a powerful role in driving sustainability at the grassroots level.

5.6.2 PANEL DISCUSSION ON HOW CAN RESEARCH GUIDE REGIONAL COOPERATION ON WATER AND GREEN HYDROGEN?

Moderator: *Prof. Toure Hamidou (Burkina Faso)*

Panelists: *Prof. Grace Ofori-Sarpong Akuffo (Ghana), Prof. Selly Camara (Guinee), and Prof. Faissal Aziz (Morocco)*

The panel examined how scientific research can inform and strengthen regional cooperation on water and green hydrogen. Panelists discussed the importance of shared data, joint research programmes and harmonised standards in managing transboundary water resources and emerging hydrogen markets. They emphasised that regional cooperation is essential where rivers, aquifers, and energy corridors cross national borders. The discussion highlighted the role of research institutions and science academies in generating credible evidence to support regional policy dialogue. Panelists also stressed that translating research into policy requires strong communication channels between scientists, policymakers and regional bodies.



Panel discussion (from the far left): Prof. Selly Camara, Prof. Grace Ofori-Sarpong Akuffo, Prof. Hamidou Touré, and Prof. Rajaâ El Moursli

The session concluded with a plenary Q&A, during which participants engaged speakers on how to align national research agendas with regional priorities and how science academies can more effectively support cooperative governance in water and energy systems.

5.7 SESSION FIVE: Education and Capacity Enhancement

Session Chair: *Dr. Jackie Kado (Kenya)*

Session Five examined how education, training and mentorship systems can prepare Africa's people to lead the water-energy transition. The session emphasised that technological change will only be sustainable if matched by strong human capacity, inclusive education and continuous skills development across all levels of society.

5.7.1 **Empowering Future Energy Leaders: Integrating Solar PV Training into Early Education – A Case Study from Zimbabwe**

By Eng. Jenipher Chigerwe (Zimbabwe)

Eng. Chigerwe presented a case study on introducing solar photovoltaic (PV) training into early education. She showed how exposing learners to renewable energy concepts at a young age builds awareness, curiosity and long-term interest in clean energy careers. Her presentation demonstrated that early education shapes attitudes toward sustainability and innovation, and that practical, hands-on learning helps children connect science to everyday life. She argued that embedding renewable energy topics in school curricula is an investment in Africa's future workforce.

5.7.2 **Tchouaffé's Theory of Change (TToC): A Reflexive and Contextual Model for Sustainable Mentorship in Africa**

By Prof. Norbert François Tchouaffé (Cameroon)

Prof. Tchouaffé introduced his Theory of Change for mentorship, which emphasises reflexivity, cultural context and long-term relationships. He argued that sustainable capacity building is not only about technical skills but also about identity, values and social belonging. His model highlights the importance of mentors understanding local realities and adapting support to the needs of individuals and communities. He showed how mentorship can strengthen scientific careers, leadership development and innovation ecosystems across Africa.

5.7.3 **PANEL DISCUSSION ON HOW CAN AFRICA BUILD BETTER SKILLS FOR THE WATER-HYDROGEN ECONOMY?**

Moderator: *Dr. Jaume Fortuny (Spain)*

Panelists: *Prof. Habiba Bouhamed Chaabouni (Tunisia), Prof. Taba Kalulu(DRC), and Prof. Rajae El Aouad (Morocco)*

The panel discussed how Africa can develop the technical and professional skills needed for emerging water and hydrogen industries. Panelists emphasised aligning education systems with labour

market needs, strengthening vocational and technical training, and linking universities with industry. They discussed the importance of interdisciplinary training that combines engineering, environmental science, policy and social sciences. The panel stressed that skills development must be inclusive, creating opportunities for women and young people to participate in green economies.



The panel discussion was followed by a plenary Q&A, during which participants engaged panelists on curriculum reform, industry partnerships, and pathways from education to employment.

5.7.4 Interdisciplinary Pathways in Teaching Sustainable Pharmaceutical Chemistry: Linking Green Hydrogen Research to Drug Discovery and Manufacturing in Africa *By Dr. Stephenie Chinwe Alaribe (Nigeria)*

Dr. Alaribe presented how green hydrogen research can be linked to pharmaceutical chemistry and drug manufacturing. She showed how interdisciplinary teaching can connect energy research to health innovation, demonstrating that green technologies have applications beyond energy alone. Her presentation highlighted the importance of cross-disciplinary education in preparing scientists who can work across sectors and solve complex problems.

5.7.5 Addressing the Challenges of Water and Energy in Africa Through African Centres of Excellence *By Prof. Goolam Mohamedbhai (Mauritius)*

Prof. Mohamedbhai discussed how African Centres of Excellence can strengthen capacity in water and energy research and training. He emphasised the regional role of these Centres in pooling expertise, resources, and infrastructure. His presentation highlighted how Centres

of Excellence can support postgraduate training, and applied research and promote partnerships with industry and government, helping to build critical mass in priority fields.

5.7.6 PANEL DISCUSSION ON HOW CAN HIGHER EDUCATION PREPARE AFRICA'S WORKFORCE FOR GREEN TRANSITIONS?

Moderator: *Dr. Natisha Dhuki (South Africa)*

Panelists: *Prof. Tijani Bounahmidi (Morocco), Prof. Benard Mpassi Mabiala (Congo Brazzaville), and Prof. Ebenezer Olatunde Farombi (Nigeria)*

This panel examined the role of higher education in preparing Africa's workforce for green transitions. Panelists discussed curriculum reform, research-industry linkages and the need for flexible learning pathways. They emphasised the importance of practical training, internships and problem-based learning. The panel also highlighted the need for universities to anticipate future skills needs rather than respond only to current labour markets.



The session concluded with a Q&A that surfaced important reflections on language and structure in higher education policy. Participants questioned the widespread use of the term “centres of excellence,” asking what this implies for the many institutions that are not so labelled—raising the uncomfortable but necessary question of whether this framing implicitly creates “centres of mediocrity.” The discussion highlighted concerns about uneven investment, visibility and opportunity within national and regional systems. This flowed into a broader debate on brain drain, brain circulation and retention, with recognition that talent follows opportunity and supportive environments. Participants reflected on how African institutions can create conditions – through funding, leadership, working environments and meaningful impact – that encourage skilled professionals to stay, return, or remain connected to the continent.

AMASA 2025 PRIZE FOR EMERGING AND INFORMATIVE SCIENCE IN AFRICA

The AMASA 2025 Prize for Emerging and Informative Science in Africa, jointly awarded by NASAC and the Hassan II Academy of Science and Technology, recognised African scientists whose work combines originality with social relevance, in line with the AMASA 2025 theme on water and green hydrogen. This award segment highlighted AMASA's commitment to science that is innovative, socially relevant and capable of informing Africa's development choices.

6.1 WINNER: Prof. Driss Ouazar (Morocco)

Prof. Ouazar was awarded for his leadership in computational water resources engineering, climate adaptation and research on the water-energy-food-hydrogen nexus. He develops advanced systems-based methods to address water scarcity and climate vulnerability in arid and semi-arid regions. Beyond research, he has shaped science policy through roles in the Hassan II Academy, ASRIC-African Union, and international advisory bodies. He has also built institutions, programmes and training pathways that attract students from across Africa. His work combines scientific excellence with policy relevance and capacity building.



Prof. Ouazar (left) receiving his award from the NASAC President, Prof. Norbert Hounkonnou

6.2 FIRST RUNNER-UP: Prof. Nadia Yousfi (Morocco)

Prof. Yousfi was recognised for pioneering the use of machine learning in hydrogen systems. Her work has produced self-healing control methods that extend the lifespan of fuel cells, batteries and electrolyzers and has influenced industry applications, including hydrogen buses in Europe. She has founded multiple master's programmes, including the first hydrogen master's degree in France, and leads education and outreach through initiatives such as the Hackathon. Her work bridges advanced science, industry application, and skills development.



Prof. Yousfi (left) receiving her award from Prof. Braide

6.3 SECOND RUNNER-UP: Prof. Fidele Ntie-Kang (Cameroon)

Prof. Ntie-Kang was recognised for his work in computational chemistry and natural product drug discovery. He created the African Natural Product Database, providing a global resource on Africa's medicinal plant diversity. His research links traditional knowledge with modern computational tools to support drug discovery for infectious and neglected diseases. He is also a strong mentor and capacity builder, supporting young African scientists through collaboration and training.



The closing session marked the formal conclusion of AMASA 2025 and brought together reflection, appreciation and forward-looking commitment. It provided space to synthesise the conference discussions, acknowledge contributions and reaffirm the shared purpose of advancing science-informed development in Africa.

7.1 Rapporteur's Report

Chief Rapporteur: *Prof. Mahfoud Ziyad (Hassan II Academy of Science and Technology)*

Prof. Ziyad presented the Rapporteur's Report, summarising the main ideas, debates and emerging messages from across the conference. He highlighted how discussions on water security, green hydrogen, the water-energy-climate nexus, policy and governance and education and capacity development converged around the need for integrated, science-based approaches to Africa's development challenges. The report emphasised recurring themes such as the importance of linking science to policy, managing trade-offs transparently, strengthening regional cooperation and investing in human capacity. His synthesis provided a coherent narrative of the conference and laid the foundation for the Conference Communiqué and subsequent policy-oriented outputs.

7.2 Vote of Thanks

Dr. Jackie Kado, Executive Director of NASAC

Dr. Kado delivered the vote of thanks on behalf of NASAC. She expressed gratitude to the Hassan II Academy for its warm hospitality and excellent organisation, to speakers and panelists for their rich contributions, to partners and supporters for their continued trust, and to participants for their active engagement. She acknowledged the efforts of organising teams and secretariats whose work made the conference possible. She concluded by encouraging all participants to carry forward the spirit of AMASA 2025 – turning ideas into action, strengthening science-policy linkages and working together toward a sustainable and inclusive future for Africa. She concluded her vote of thanks by presiding over the presentation of plaques and gifts to delegates and officials, in recognition of their unwavering support and dedicated service toward the successful delivery of AMASA 2025.

7.3 Closing Statements by AMASA 2025 Co-Chairs

7.3.1 **Prof. Mahouton Norbert Hounkonnou, President of NASAC**

Prof. Hounkonnou reflected on AMASA's role as a continental platform where science academies engage directly with Africa's development agenda. He thanked participants for their intellectual contributions and collegial spirit, emphasising that the true value of AMASA lies not only in the dialogue it fosters but in how its ideas are ultimately translated into action.

He reaffirmed NASAC's commitment to supporting its member academies in strengthening science-policy engagement and ensuring that the outcomes of AMASA 2025 inform national and regional decision-making.

7.3.2 **Prof. Omar Fassi-Fehri, Permanent Secretary of the Hassan II Academy of Science and Technology**

Prof. Fassi-Fehri expressed appreciation to all participants for making AMASA 2025 a success and thanked NASAC for entrusting the Hassan II Academy with hosting the conference. He highlighted Morocco's pride in welcoming African science academies to Rabat and in sharing experiences from its own journey in renewable energy, water innovation and sustainable development. He emphasised the importance of continued collaboration among African academies and partners to address shared challenges through science and innovation.

TIME	ACTIVITY	FACILITATORS
DAY 0: MONDAY, 17 NOVEMBER 2025		
ALL DAY	ARRIVAL OF NASAC MEMBERS	NASAC
10.00 – 13.00	NASAC BOARD MEETING	Members only
DAY 1: TUESDAY, 18 NOVEMBER 2025		
ALL DAY	ARRIVAL OF CONFERENCE PARTICIPANTS	NASAC
10.00 – 17.00	Excursion to Tangier's industrial port and Tangiers city	Hassan II Academy
DAY 2: WEDNESDAY, 19 NOVEMBER 2025		
08.30	REGISTRATION	Hassan II Academy / NASAC
09.00	Welcome Remarks and Cultural Opening	Hassan II Academy
09.15	OFFICIAL OPENING CEREMONY	
09.00	<ol style="list-style-type: none"> 1. National Anthem of Morocco 2. Welcome Speeches and Goodwill Messages <ol style="list-style-type: none"> I. Prof. Omar Fassi-Fehri <i>Permanent Secretary of Hassan II Academy and Co- Chair of the AMASA-2025</i> II. Prof. Mahouton Norbert Hounkonnou <i>President of NASAC and Co-Chair of AMASA-2025</i> III. Dr. Doreen Strauhs-Heymann, BMBF-Germany IV. Dr. Jaume Fortuny, OBREAL V. Prof. Masresha Fetene, IAP (By Video) 	
09.50	OFFICIAL OPENING SPEECH <i>Government Official – Morocco</i>	
10.00	First Keynote Address Navigating the Scientific and Technological Frontiers of Water Desalination and Green Hydrogen Coupling	Prof. Moustapha Bousmina, <i>(Morocco / NASAC)</i>
10.30	Second Keynote Address Water use and quality for green hydrogen production.	Prof. Nadia Yousfi (Morocco) Dr. Abdelilah Slaoui (France)
11.00	GROUP PHOTO	Hassan II Academy
11.15	HEALTH BREAK	

CONFERENCE PROGRAMME

TIME	ACTIVITY	FACILITATORS
SESSION ONE		
Water Security and Management		
Session Chair: Prof. Adeslam Hoummada (Morocco)		
11.30	SafeWater SOS: A Multilingual Mobile Application Powered by AI for Water Safety and Emergency Response in Africa	Dr. Malan Ketcha Armand Kablan (Côte d'Ivoire)
11.45	Strengthening Community Health and Water Resilience in Fragile Ecosystems: Insights from a Medical Mission in Guinea, Conakry and Sierra Leone	Dr. Neveen Shalalfa (Palestine)
12.00	Panel Discussion Securing Africa's Water Future: Which Intervention Matters Most Today? <ul style="list-style-type: none"> • Dr. Peter Okoli (Nigeria) • Dr. Elnaa Mona (Egypt) • Pr. Mohamed Aït Kadi (Morocco) 	Prof. Nadia Youf (Morocco)
12.45	Q&A SESSION	
13.00	LUNCH BREAK	
14.15	African Indigenous Plants for Sustainable Water Purification: A Review of Traditional and Modern Approaches	Dr. Ali Abdalla (Sudan)
14.30	Projet de Gestion Intégrée et Durable des Ressources en Eau en Guinée et en Afrique de l'Ouest	Prof. Mamadou Aliou Balde (Guinea)
14.45	Panel Discussion How Can Africa Balance Water Demand, Supply and Sustainability? <ul style="list-style-type: none"> • Prof. Oumar Sock (Senegal) • Prof. Ratemo Michieka (Kenya) • Dr. Godefroid Gahungu (Burundi) 	Dr. Doyin Odubanjo (Nigeria)
SESSION TWO		
Green Hydrogen Development		
Session Chair: Prof. Ekanem Ikpi Braide (Nigeria)		
15.30	Sociotechnical Barriers to Hydrogen Energy Transition in Nigeria: A Path Analysis Approach	Dr. Chux Daniels (South Africa)
15.45	Biocultural Pathways for Green Hydrogen Adoption in Africa: A Medical Anthropology Perspective on Water, Health and Energy Justice	Dr. Emmanuel Busera (Kenya)
16.00	Panel Discussion <i>What Will It Take to Build a Viable Green Hydrogen Industry in Africa?</i> <ul style="list-style-type: none"> • Prof. Francois Xavier ETOA (Cameroon) • Prof. Hafedh Abdelmalek (Tunisia) • Prof. Rajaâ El Moursli (Morocco) 	Dr. Thabile Ndlovu (Eswatini)
16.30	Q&A SESSION	
16.45	HEALTH BREAK	
18.00 – 20.00	CONFERENCE DINNER	

CONFERENCE PROGRAMME

TIME	ACTIVITY	FACILITATORS
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DAY 3: THURSDAY, 20 NOVEMBER 2025

SESSION THREE

Water-Energy-Climate Nexus

Session Chair: Prof. Nadia YOUSFI (Morocco)

09.00	Knowledge, Perception and Awareness of the Potential Harm of Smoke Inhalation from Indoor Air Pollution Among Cooks in Solid-Fueled High School Kitchens within the Kumasi Metropolis, Ghana	Prof. Marian Asantewah Nkansah (Ghana)
09.15	The Pathway for the Attainment of Net Zero Carbon Emission in Africa by Utilizing Renewable and Low-Carbon Energy Resources: The Case of Nigeria	Prof. Abubakar Sambo
09.30	Panel Discussion What is the right mix for Africa's <i>Water-Energy-Climate Nexus</i> for a sustainable future – and why? <ul style="list-style-type: none"> • Prof. Driss Ouazar (Morocco) • Prof. Amadou Hama Maiga (Mali) • Prof. Moctar Toure (Senegal) 	Dr. Deoraj Caussy (Mauritius)
10.00	Q&A SESSION	
10.15	LUNCH BREAK	
10.30	Effects of Arbuscular Mycorrhizal Fungi (AMF) coating and inoculating on sorghum plants leaf area index cultivated under conservation and conventional tillage systems, Filabusi, Zimbabwe	Dr. Annabel Banda (Zimbabwe)
10.45	Assessing the Feasibility of Small and Micro Hydropower Plants for Rural Electrification in Zimbabwe	Mr. Hagreaves Kumba (Zimbabwe)
11.00	Panel Discussion <i>Which trade-offs must be prioritised in Water-Energy-Climate management?</i> <ul style="list-style-type: none"> • Prof. Ishmael Masesane (Botswana) • Prof. Paul Baki (Kenya) • Prof. Cyprian Katongo (Zambia) 	Prof. Grace Bantebya Kyomuhendo (Uganda)
11.30	Q&A SESSION	

SESSION FOUR

Policy and Governance

Session Chair: Prof. Rajaa El Moursli (Morocco)

11.45	Influence of Legislative Framework in the Efficient Use of Energy and Water use efficiency of Horticultural Processing by Micro, Small and Medium Enterprises in Kenya	Linda Obiero
12.00	Strengthening science-policy engagement in Africa through national young academies	Prof. Toure Hamidou (Burkina Faso)
12.15	Panel Discussion How can research guide regional cooperation on water and green hydrogen? <ul style="list-style-type: none"> • Prof. Grace Ofori-Sarpong Akuffo (Ghana) • Prof. Selly Camara (Guinee) • Prof. Faissal Aziz (Morocco) 	Prof. Toure Hamidou (Burkina Faso)
12.45	Q&A SESSION	
13.00	LUNCH BREAK	

CONFERENCE PROGRAMME

TIME	ACTIVITY	FACILITATORS
SESSION FIVE Education and Capacity Enhancement Session Chair: Dr. Jackie Kado (Kenya)		
14.00	Empowering Future Energy leaders: integrating solar PV training into Early Education- A Case Study from Zimbabwe	Mrs. Jenipher Chigerwe (Zimbabwe)
14.15	Tchouaffé's Theory of Change (TtoC): A Reflexive and Contextual Model for Sustainable Mentorship in Africa	Prof. Norbert Francois Tchouaffe Tchiadje (Cameroon)
14.30	Panel Discussion <i>How can Africa build better skills for the water-hydrogen economy?</i> <ul style="list-style-type: none"> • Prof. Habiba Bouhamed Chaabouni (Tunisia) • Prof. Taba Kalulu (DRC) • Prof. Rajae El Aouad (Morocco) 	Dr. Jaume Fortuny (Spain)
15.00	Q&A SESSION	
15.15	Interdisciplinary Pathways in Teaching Sustainable Pharmaceutical Chemistry: Linking Green Hydrogen Research to Drug Discovery and Manufacturing in Africa	Dr. Stephenie Chinwe Alaribe (Nigeria)
15.30	Addressing the Challenges of Water and Energy in Africa Through African Centres of Excellence.	Prof. Goolam Mohamedbhai (Mauritius)
15.45	Panel Discussion <i>How can higher education prepare Africa's workforce for green transitions?</i> <ul style="list-style-type: none"> • Prof. Tijani Bounahmidi (Morocco) • Prof. Benard Mpassi Mabiala (Congo Brazzaville) • Prof. Ebenezer Olatunde Farombi (Nigeria) 	Dr. Natisha Dhuki (South Africa)
16.15	Q&A SESSION	
16.30	HEALTH BREAK	
17.15	CLOSING SESSION <ol style="list-style-type: none"> 1. Rapporteur's Report Pr. Mahfoud Ziyad (Hassan II Academy) Chief rapporteur 2. Closing Statements Prof. Mahouton Norbert Hounkonnou, President of NASAC Prof. Omar Fassi-Fehri, Permanent Secretary of Hassan II Academy 3. Vote of Thanks Dr. Jackie Kado, Executive Director of NASAC 	
17.45	REST	
18.30 – 22.00	Official Gala Dinner (Traditional meal)	

DAY 4: FRIDAY, 21 NOVEMBER 2025

9.00	Launch of NASAC Strategic Plan 2025–2034	
10.00	NASAC GENERAL ASSEMBLY MEETING	By Invitation Only
13.00	LUNCH BREAK	
14.00	Hassan II Academy-NASAC Farewell Meeting	

8.2 CONCEPT NOTE

8.2.1 | *Background and Rationale*

The **Annual Meeting of African Science Academies (AMASA)** is NASAC's flagship platform for advancing science-informed policymaking in Africa. Each year, AMASA brings together distinguished scientists from various national academies, government leaders and development stakeholders to deliberate on a pressing issue of continental importance. The conference fosters exchange between science and policy, generates actionable recommendations and strengthens the capacity of African academies to respond to development challenges. Since its inception, AMASA has grown into a pivotal convening space where science and diplomacy intersect for Africa's progress.

The 2025 edition of AMASA takes on renewed urgency and relevance with its focus on **"Water and Green Hydrogen - Scientific Pathways for Sustainable Development in Africa."** These two interconnected sectors are central to Africa's long-term resilience in the face of climate change, economic transformation and energy transition. Water is foundational for life, agriculture, health and ecosystems, yet millions in Africa still have limited access to clean and reliable water. Meanwhile, green hydrogen – produced using renewable energy sources like solar and wind – offers an emerging frontier in Africa's ambition to leapfrog into a low-carbon industrial future.

Positioning this theme within the AMASA framework provides a timely opportunity to align Africa's scientific capabilities with its policy priorities. The water-energy-climate nexus demands interdisciplinary approaches and cross-sectoral coordination – precisely the kind of collaboration AMASA is designed to foster. By convening experts and decision-makers across water management, clean energy, infrastructure and research, AMASA 2025 will help unlock synergies and propose concrete steps toward a sustainable, equitable and science-driven development path.

Hosting AMASA 2025 in **Morocco** adds strategic depth to the theme. Morocco is a recognised leader in Africa's green energy transition, with flagship projects in solar power, desalination and green hydrogen research. Its national commitment to renewable energy and sustainable water solutions serves as a living laboratory from which the rest of Africa can learn. Rabat, the seat of the **Hassan II Academy of Science and Technology**, offers not only symbolic prestige but also proximity to research institutions, policymakers and innovators driving Morocco's environmental transformation. The visit to Tangier's industrial port – a green logistics and automotive hub – will further demonstrate the practical integration of water and clean energy solutions in real-world settings.

8.2.2 | *Objectives*

- **Scientific Deliberation:**

Examine recent scientific developments in water resource management and green hydrogen technologies pertinent to Africa.

- **Policy Engagement:**
Discuss policy frameworks and governance structures that support sustainable water and energy systems.
- **Capacity Enhancement:**
Identify strategies for strengthening research, education and innovation capacities in related fields.
- **Collaboration and Networking:**
Foster partnerships among African science academies, international institutions and industry stakeholders.
- **Field Insight:**
Provide practical exposure through a site visit to Morocco's car manufacturing port, illustrating industrial applications of green hydrogen.

8.2.3 | **Sub-themes**

- **Water Security and Management**
 - Innovations in water harvesting, purification and distribution.
 - Integrated water resource management and transboundary cooperation.
 - Climate change impacts on water availability and strategies for resilience.
- **Green Hydrogen Development**
 - Technological advancements in green hydrogen production and storage.
 - Infrastructure and investment opportunities in the hydrogen economy.
 - Safety standards and regulatory considerations for hydrogen deployment.
- **Water-Energy-Climate Nexus**
 - Synergies between water and energy systems in the context of climate change.
 - Sustainable agriculture and food security through integrated resource management.
 - Environmental impacts and mitigation strategies in water and energy projects.
- **Policy and Governance**
 - Developing coherent policies for water and energy sectors.
 - Role of science academies in advising and shaping national policies.
 - Financing mechanisms and public-private partnerships for sustainable projects.
- **Education and Capacity Enhancement**
 - Enhancing STEM education and research in water and energy disciplines.
 - Promoting gender inclusivity and youth engagement in scientific fields.
 - Establishing centres of excellence and regional research networks.

8.2.4 | Tentative Programme Overview

DATE	ACTIVITY
17 Nov (Mon)	<ul style="list-style-type: none"> • Arrival of participants (NASAC members and board) • NASAC Board Meeting (morning)
18 Nov (Tue)	<ul style="list-style-type: none"> • Excursion to Tangier – Visit to Morocco’s car manufacturing industrial port. • Arrival of participants (Conference)
19 Nov (Wed)	Conference Day 1: <ul style="list-style-type: none"> • Opening Ceremony • Plenary sessions and thematic panels
20 Nov (Thu)	<ul style="list-style-type: none"> • Conference Day 2: Breakout discussions and Expert panels • Breakout discussions and Expert panels • Closing Ceremony and Communiqué
21 Nov (Fri)	<ul style="list-style-type: none"> • 2-hour side event (morning) • NASAC General Assembly (mid-morning to afternoon) • Departure of participants (evening)

8.2.5 | Expected Outputs

Conference Communiqué and Report: A document outlining key recommendations and action points for policymakers and stakeholders.

Policy Briefs: Thematic briefs summarising discussions and proposed strategies in each sub-theme area.

Collaborative Initiatives: Identification of collaborative projects and partnerships among participating institutions.

Capacity Development Plans: Frameworks for enhancing education and training in water and green hydrogen sectors.

8.2.6 | Participation

The conference will bring together:

- Members of African and international science academies
- Government officials and policymakers
- Researchers and academics
- Industry leaders and entrepreneurs
- Representatives from NGOs and civil society
- Students and early-career professionals.

For further information, please contact:

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EMAIL	secre_tariat@academiesciences.ma	info@nasaconline.org
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8.3 SPEAKER PROFILES



Prof. Omar Fassi-Fehri, is the permanent Secretary of Hassan II Academy of Science and Technology.



Professor Mahouton Norbert Hounkonnou earned his DSc. degree in 1992 from the Catholic University of Louvain in Belgium and is a full Professor of Mathematics and Physics at the University of Abomey-Calavi, Benin. His research spans noncommutative and nonlinear mathematics, including differential equations, operator theory, coherent states, quantisation techniques, orthogonal polynomials, special functions, graph theory, non-associative algebras, nonlinear systems, noncommutative field theories and geometric methods in physics.



Dr. Doreen Straus-Heymann, Policy Officer for Cooperation with Africa and Middle East at the BMBF (Federal Ministry of Education and Research, Germany)



Dr. Jaume Fortuny is a highly experienced professional with over 30 years of expertise in digital technologies, ICT for Development (ICT4D), and project management.

He has held a number of senior roles, including Research Staff and International Project Manager at the University of Barcelona, Senior Advisor at OBREAL Global, CTO at Smart Knowledge Alliances and CIO at various service companies.

His expertise spans digitalisation, artificial intelligence and renewable energy, as evidenced by his involvement in projects across Europe, Latin America, the Middle East and North Africa.

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Dr. Jackie Kado leads the Secretariat of the Network of African Science Academies (NASAC), a consortium of 32 academies dedicated to advancing scientific excellence, informing policy and promoting sustainable development across Africa. Based in Nairobi, she plays a pivotal role in strengthening the science-policy interface and fostering strategic partnerships that elevate the contribution of science to policymaking on the continent.

With nearly 25 years of experience managing regional and continental initiatives, she has championed the use of evidence-informed, African-led solutions grounded in local contexts.

Dr. Kado holds a Doctorate in Human Development from Atlantic International University (USA), a Master's degree in Project Planning and Management and a Bachelor's degree in Education (Mathematics and Commerce) from the University of Nairobi. She also serves on several international boards and expert committees, providing thought leadership on science, innovation, equity and global development.



Prof. Moustapha Bousmina, is the current Chancellor of the Hassan II Academy of Science and Technology in Morocco and also serves as the President of the Euro-Mediterranean University of Fez the responsible of the Euromed University project. At the request of the Moroccan government, he established the Institute of Nanomaterials and Nanotechnology in Rabat in 2008 and serves as its Director General.



Dr. Abdelilah Slaoui is the Deputy Research Director in charge of Energy at the French National Centre for Scientific Research (CNRS-Paris) and the Coordinator of the National Research Program (PEPR) on Low Carbon Hydrogen. He earned his PhD in Materials Science from the University of Strasbourg in 1984 and joined CNRS as a Research Fellow in 1986, obtaining his Habilitation in 1996. His research focuses on materials and processes for optoelectronics and energy. Dr. Slaoui has coordinated or participated in over 30 national and international

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projects on energy and photovoltaics. A former President of the European Materials Research Society, he has chaired and co-organised numerous international conferences and symposia on materials for energy. He has authored over 300 scientific papers and 15 chapters of books. *Publications:* <https://orcid.org/0000-0001-8202-2833>



Prof. Masresha Fetene, is a Professor of Plant Ecophysiology at Addis Ababa University, Ethiopia. He received his PhD in Plant Ecophysiology in 1990 from the Institute of Botany, University of Darmstadt, Germany. He has several years of teaching experience in both undergraduate and graduate programmes in biological, botanical, environmental and ecological subject areas. He has supervised and mentored numerous Masters and PhD students. Professor Masresha Fetene served as Vice President for Research and Graduate Studies at Addis Ababa University. He made landmark contributions to enhance research capacity at Addis Ababa University. He initiated and oversaw the growth and expansion of graduate studies at the University through the introduction of new programmes as well as quality improvement programmes such as visiting scholarship schemes and the formation of research consortia.



Dr. M. Oladoyin Odubanjo is the Executive Secretary (Chief Executive) of The Nigerian Academy of Science where he also leads impactful change, making the organisation more service-oriented (providing science advice), than honorific. Since joining the Academy in 2007, he has designed and implemented several strategies to increase the influence of the Academy as a trusted adviser to the government. He is a public health physician with work and management experience across different sectors including public and private healthcare, government, non-profit and private enterprises.

Dr. Odubanjo was the pioneer chairman of the Africa chapter of the International Network for Government Science Advice (INGSA) and is a Fellow of the International Science Council (ISC). He sits on the boards of the ISC, INGSA-Africa, The Conversation Africa, and The Leprosy Mission Nigeria among others.

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Pharmacognosy and President of the Academy of Sciences of Guinea. A distinguished academic who has worked at institutions in Guinea and Belgium, he is a leading specialist in pharmacopoeia and traditional medicine.

His pioneering research has focused on the scientific validation of Guinean medicinal plants, resulting in the development of several patented phytomedicines for conditions including hypertension, diabetes and HIV. With over 100 scientific publications and presentations at more than 100 international conferences, he has mentored numerous doctoral, master's and undergraduate students.

Professor Baldé is a sought-after expert by regional and international bodies (WHO, CAMES, ECOWAS, AUF, WAHO), having played key roles in public health policy, project evaluation and academic governance, including as President of the CIDPHARMEF Commission on natural substances, General Rapporteur for Guinea's COVID-19 Scientific Response Council.



Peter Chukwunonso Okoli is a public analyst, consultant in forensic chemistry and environmental impact assessment and an Associate Professor in analytical/environmental chemistry at Alex Ekwueme Federal University, Ndufu Alike, Nigeria. His research is focused on development of low-cost analytical methods for micro-organic pollutants/pollutants of emerging concern, deployment of nuclear forensics as environmental regulatory methods for efficient implementation of Polluter-pays-principle, development of low-cost materials for remediation of anthropogenic water pollution, as well as assessment of fate/safety of environmental nanomaterials.

His research does not only contribute to the academic community but also aims to influence policy and practice in environmental management, making him a significant figure in the ongoing dialogue about sustainable practices in resource extraction. Through his work, Dr. Okoli continues to advocate for effective environmental governance and the implementation of principles that hold polluters accountable, thereby fostering a more sustainable future.

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Dr. Thabile Ndlovu is a Senior Lecturer and former Head of Chemistry at the University of Eswatini, with a PhD from the University of Johannesburg. Her work covers natural products, environmental chemistry and waste management. She contributes to chemical inventories under major international environmental agreements, including the Stockholm and Basel Conventions, the Montreal Protocol and the UN-FCCC, and serves on the Stockholm Convention's POPRC technical committee. Her climate-related work includes developing national GHG inventories for the IPPU and Waste sectors, supporting climate adaptation in health and water, and helping establish Eswatini's MRV system. Nationally, she has held key leadership roles as former ENTC board member, President of the Kingdom of Eswatini Academy of Sciences, Vice-Chair of the National Laboratory Association, and Chair of the Global Fund's CCM oversight committee. Her expertise continues to strengthen chemistry and sustainable practices in Eswatini and beyond.



Dr. Emmanuel Busera is a Research Fellow in the Department of Medical Anthropology at the Afro Asia Institute of Strategic Studies. His work sits at the intersection of global health, socio-cultural belief systems and regional strategic policy. He offers evidence-based insights into how public health challenges, traditional healing practices and disease dynamics influence human security and diplomatic cooperation across Africa and Asia. Dr. Busera's expertise directly supports the Institute's mission to strengthen inter-regional knowledge and strategic partnerships, making his contributions highly relevant to the discussions at AMASA 2025.



Professor Ekanem Ikpi Braide holds a BSc in Zoology from the University of Ife (1971), an MSc in Parasitology (1973) and a PhD in Parasitology (1978) from Cornell University, as well as a Certificate in Epidemiological Methods (1986). She is a Fellow and Past President of the Nigerian Academy of Science; Fellow, Co-founder, and Life Member of the Nigerian Society for Parasitology (NSP/PPSN); Fellow of the Salzburg

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Seminar (Session 391, 2001); Member of the Board of Trustees of The Leprosy Mission International; and President of the Society for Family Health, Nigeria. Her awards include the Officer of the Order of the Federal Republic (OFR) and the Jimmy/Roslynn Carter Award for her dedication to the eradication of guinea worm in Nigeria. She served as Lecturer and Professor at the University of Calabar, Vice Chancellor of Cross River University of Technology (2004-2009), and Vice Chancellor of Federal University Lafia (2011-2016).



Prof. Emeritus Ratemo W. Michieka is a renowned weed scientist and environmental expert, currently Chancellor of Tharaka University and President of Kenya National Academy of Sciences. He is the Founding Vice Chancellor of Jomo Kenyatta University of Agriculture and Technology and former Chair of Inter University Council of East Africa. He earned his PhD in Weed Science from Rutgers University, USA, and completed postdoctoral training at International Institute of Tropical Agriculture before joining University of Nairobi in 1980. A prolific author, he has published widely and wrote the autobiography *Walking the Promise*. His expertise is in integrated weed control and environmental conservation. As former Director General of National Environment Management Authority, he championed pollution control and led Kenya's first State of the Environment report. Even in retirement, he plays key advisory roles and recently chaired African Scientific, Research and Innovation Council. His leadership has significantly shaped environmental policy and higher education in Africa.



Prof. Marian Asantewah Nkansah, is a Professor at the Department of Chemistry of the Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana. Nkansah's research involves finding solutions to environmental problems associated with levels and fate of toxic substances, and remediation strategies.

Nkansah has received training in Science Diplomacy and Science Advice for Policy and has been on both national and

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international platforms where science is discussed for better public understanding. She is a thought leader and motivational speaker.

Nkansah is a Fellow of the Ghana Academy of Arts and Sciences, member of the Ghana Chemical Society, Royal Society of Chemistry and the Women for Science (WfS) Working Group of NASAC. She is an affiliate of IUPAC, TWAS and AAS, and fellow of NEF.



Dr. Nadia Yousfi holds a master's degree in mathematics and Energetics and a PhD in Engineering Science (2009). She previously served as R&D Project Manager on Hydrogen in Germany before joining the University of Marie and Louis Pasteur in France as a Full Professor in 2014. She is currently the Hydrogen Project Manager at the International University of Rabat and an Adjunct Professor at Mississippi State University since 2024. Her research focuses on hydrogen systems' performance and durability. Dr. Yousfi has directed three master's programmes, one of which received the *Trophée de l'Hydrogénie* for "Education, Training & Outreach" in 2022. She was awarded the CNRS Bronze Medal in 2019 and the Blondel Medal in 2023 and will serve as General Chair of the European Fuel Cell Forum in 2027. She is also an Associate Member of the Académie Hassan II des Sciences et Techniques.



Prof. Rajaâ Cherkaoui El Moursli is a Moroccan nuclear physicist and professor at Mohammed V University in Rabat, where she has served since 1982 after completing her PhD in Nuclear Physics in Grenoble, France. She led the Nuclear Physics Laboratory and played a pivotal role in integrating Morocco into major international collaborations, notably contributing to the ATLAS experiment at CERN and the 2012 discovery of the Higgs boson. Her work also spans medical and high-energy physics through KM3NeT and ANTARES.

A pioneer in education, she established Morocco's first master's programme in Medical Physics and has supervised numerous postgraduate theses. Prof. Cherkaoui has held senior leadership positions,

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including Vice-President for Research at Mohammed V University, and co-founded the national competition *Ma Thèse en 180 secondes*.

Widely recognised, she has received major awards such as the L'Oréal-UNESCO For Women in Science Award and the TWAS Medal and is a Fellow of several prestigious academies.



Prof. Chux Daniels is a Professor in the Department of Engineering and Technology Management at the University of Pretoria, South Africa, and a Senior Research Fellow at the Science Policy Research Unit (SPRU), University of Sussex, UK. He is the Founding Director of the Transformative Innovation Africa Hub (TIAH), based at the Future Africa Campus of the University of Pretoria and in the UK. His research and policy work span innovation, science and technology policy, energy and environment, climate change, digital transformation, political economy and capabilities. He has advised numerous governments worldwide and led major transformative research and innovation policy projects for both public and private sector clients globally.



Hagreaves Kumba is a Lecturer in the Department of Mechanical Engineering at Midlands State University, Zimbabwe. He holds a master's degree in industrial engineering and is an Erasmus Mundus awardee, having completed an academic exchange programme in Spain. He is currently pursuing a Doctorate in Industrial Engineering at the Durban University of Technology, South Africa. His research interests focus on energy systems, water management, and sustainable development, with a particular emphasis on the techno-economic analysis of renewable energy solutions for developing economies. Mr. Kumba has published in several peer-reviewed journals and has presented his work at both local and international conferences. He is passionate about integrating innovation and sustainability in engineering education and advancing applied research that addresses real-world industrial and community challenges.

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Dr. Annabel Banda is the Director of the Centre for Wildlife Conservation and Research at Gwanda State University in Zimbabwe, where she also supervises research projects. She holds a Bachelor of Science and a Master of Science in Biological Sciences and Tropical Entomology, respectively, from the University of Zimbabwe, and a DPhil in Ecology and Environment from Chinhoyi University of Technology. Her research focuses on zoonotic diseases, sociocultural determinants of health and illness, endo- and ectoparasites of animals, and dipteran pollinators. In recognition of her contributions to science and development, Dr. Banda received the Women in Science, Technology, and Innovation Recognition Certificate in 2024. She is a TWAS Young Affiliate (2025-2030), ASSAf Annual Young Scientists Conference awardee (2025), Vice President of ZIMYAS (2021-2025), and Founder of the Future African Scientist Programme (2021).



Professor Amadou Hama Maiga is the Deputy Permanent Secretary of the Mali Academy of Sciences. He holds an engineering degree in hydraulics from ENI-Mali, and a master's and PhD from the École Polytechnique Fédérale de Lausanne (EPFL), Switzerland. He founded and led the Laboratory for Pollution Control and Water Treatment at the International Institute for Water and Environmental Engineering (2iE) in Ouagadougou. At 2iE, he served as Director of Research (2008-2013) and later as Director General (2013-2016). He has held prominent regional and international roles, including Chair of the Global Water Partnership-West Africa (GWP-WA), Board Member of the World Water Council (WWC), and Board Member of the African Water Association (AfWA). With more than 70 scientific publications and several WASH technological innovations, Professor Maiga is also the recipient of the 2009 Grand Prize of the Suez Environnement Foundation in Paris.



Dr Deoraj Caussy is a seasoned epidemiologist with training and work experience in world-class premier institutes including NIH and CDC, USA and WHO. Currently, he is an independent epidemiologist offering integrated epidemiology solutions to a variety of contemporary global problems, via <https://www.drdeorajcaussy.com/>. His areas of expertise include global health, risk assessment and policy development. He is a strong networker and has contributed to the activities of several academies including MAST, ASSAf, AAAS, IAP and NASAC. He is chief editor for the NASAC publication on *Changing disease patterns in Africa* and is lead editor for NASAC report on *Protecting Human Health from Climate Change and Health in Africa*. He has also contributed to climate change and health by co-authoring policy papers in peer reviewed journals in addition to COP26 and 27. He is currently an advisor to RD WHO-AFRO in Epidemic Preparedness and Response.



Dr. Linda Obiero is a researcher and lecturer in the Department of Earth and Climate Sciences, Faculty of Science and Technology, at the University of Nairobi. She holds a PhD in Environmental Governance and Management from the same university. Her research focuses on climate change and adaptation, resource use efficiency, green energy, sustainable food and land use systems, integrated natural resource management and waste management. She teaches, supervises and mentors undergraduate and postgraduate students and has published several research papers. Dr. Obiero is currently co-implementing a project on nature-based solutions for climate adaptation among vulnerable communities in Turkana, funded by the European Union. She previously led the Early Warning Early Action project, funded by the American Red Cross and the Global Disaster Preparedness Centre, and participated in the Hortigreen Project, which promoted sustainable production by micro, small, and medium enterprises.

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Prof. Paul Baki is a Professor of Physics/Consultant space scientist; Fellow; Hon. Secretary, Kenya National Academy of Sciences; Member of United Nations Committee on Peaceful Uses of Outer Space Affairs (UNCOPUOS) expert group C: Long Term Sustainability of Outer Space Activities (2013-2018). African Union Space Policy & Strategy: Contributed to the development of African Space Policy and Space Strategy as well as statutes that paved way for establishment of the African Space Agency (2012-2019). Member of International Network of Governmental Science Advice (INGSA).



Ishmael Masesane is the President of the Botswana Academy of Science and a Fellow of the Royal Society of Chemistry (RSC). He holds a PhD degree from the University of Durham, UK and MSc and BSc degrees from the University of Botswana.

Ishmael Masesane is Professor of Organic Chemistry at the University of Botswana where he has served as Head of the Department of Chemistry (2015-2020) and Dean of the Faculty of Science (January 2021-2023). He is a former president of the Botswana Chemical Society and former Executive Board Member of Commonwealth Chemistry.

Ishmael's research interests span both natural products chemistry and organic synthesis. He has published over sixty journal articles and four book chapters and has Scopus h-index of 15.



Prof. Grace Bantebya Kyomuhendo is a distinguished international scholar and gender expert with over three decades of experience in academia, research and advocacy for gender equality and social justice. She is a Professor of Women and Gender Studies at Makerere University and currently serves as the President of the Uganda National Academy of Sciences (UNAS). She is the Deputy Vice Chancellor DVC/AA designate for Bunyoro University and has several appointments and leadership roles including being Board

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Member Makerere Rotary Peace Center. She has made significant contributions to advancing gender and development policy in Uganda and beyond. Her research focuses on gender-based violence, poverty, social protection and transformative gender norms. She has published extensively and worked as a consultant for various national and international organisations, including UN agencies and government institutions. A passionate advocate for women's empowerment and inclusive development, Prof. Bantebya Kyomuhendo continues to inspire and mentor future leaders through her scholarship, leadership and unwavering commitment to social transformation.



Prof. Nobert Tchiadje is the Rector of Kesmonds International University (KIU), Cameroon; a mentor at the African Academy of Sciences; the author of Tchouaffé's Theory of Change; and an International Task Force Officer at the National Postdoctoral Association (NPA), USA. He also serves as an Associate Professor, teaching Integrated Water Resources Management (IWRM), Environmental Engineering, and Drip Irrigation at Mountain University (UDM), Bangangté, Cameroon, as well as Leadership and Development, Sanitation, and IWRM at the Advanced School of Agriculture, Forestry, Water and Environment, University of Ebolowa, Cameroon.



Eng. Jenipher Chigerwe is a seasoned Mechanical and Renewable Energy Engineering lecturer with over 15 years of experience in higher and tertiary education. She serves as a Renewable Energy Consultant at Midlands State University, Zimbabwe, where she leads research and training initiatives in sustainable energy technologies. Her work focuses on solar thermal and photovoltaic systems, gender mainstreaming in renewable energy, and community empowerment through clean energy solutions.

Eng. Chigerwe is a registered engineer and the national gender representative for the SOLTRAIN+ project, which promotes solar thermal energy adoption across Southern Africa. She has contributed

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to several national and regional capacity-building programmes aimed at enhancing youth and women participation in renewable energy. Her current research explores technopreneurship frameworks for women's empowerment in rural energy transitions. She is passionate about bridging academia, innovation, women inclusion and sustainability to drive Africa's green energy future.



Dr. Neveen Shalalfa is a Family Medicine and Endocrinology specialist and serves as Head of Primary Health Care Centers at Palestine, Ministry of Health, lecturer in the university, She holds a master's in public health and Epidemiology and a Postgraduate Diploma in Endocrinology from the University of South Wales, United Kingdom. Dr. Shalalfa is the founder and director of the Disease Awareness and Prevention (DAP) Initiative, which focuses on community-based disease prevention, education and research. Her work integrates public health leadership with clinical and academic practice to address non-communicable diseases (NCDs) and infections, in resource- limited and conflict-affected settings. She has led international medical missions in Africa on infectious-disease control and climate-related health challenges. Dr. Shalalfa's current research explores health system resilience, infections and NCD care in fragile contexts. She actively collaborates with regional and global networks to advance equitable health in the Global South.



Prof Toure Born in 1954, Burkina Faso, he obtained his first PhD in 1982 from the University of Franche – Comté of Besançon (France); then he joined the Mathematics Department of the University of Ouagadougou (Burkina Faso) and rose through the ranks to become full Professor in 2002. He has been Head of the Department of mathematics of the Institute of Mathematics and physics, Head of the Postgraduate programmes, Deputy Director of the Centre of Computer Sciences in Charge of Distance Learning and ICT, Director of the University Pedagogic Centre, Deputy Vice-Chancellor in charge of Academic affairs. Currently he is the Permanent Secretary of Burkina National Academy of Sciences, Arts and Letters (ANSAL-BF) since 2013.

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He has made significant contributions on nonlinear elliptic parabolic equation using theory of evolution equations in Banach spaces; control and stabilisation of problem of parabolic-hyperbolic nonlinear type, functional analysis and partial differential equations



Prof. Rajae El Aouad, is a resident member of the Hassan II Academy of science and technology (HIIAST) since 2006, Director of Life Science section since February 2023, and member of the steering committee of the Royal Institute of strategic studies (RISS) since 2007. Rajae is a highly skilled and driven public health strategist and operational manager, clinical biologist, biomedical and public health researcher. She was assigned as a Commissioner in the EMRO and Global Commission on Social determinants of health respectively in 2019-2021 and 2021 to present. She also chaired the Moroccan Commission on health Equity (2020-2021). Since 2022, she is President of a One Health NGO she has co-founded in 2019.



Professor Benard Mabiala obtained a Diploma in Physics from Martin Luther University in Halle, Germany (1982), and a PhD from the University of Strasbourg, France (1996). He served as a Full Professor at Marien Ngouabi University until his retirement in 2021. He currently serves as an Advisor at the Ministry of Higher Education and as Vice Permanent Secretary of the Congolese Academy of Sciences, Académie Nationale des Sciences et Technologies du Congo.



Prof Goolam Mohamedbhai did his undergraduate and postgraduate studies in Civil Engineering at the University of Manchester, UK and his postdoctoral research at the University of California, Berkeley. He served as the Vice-Chancellor of the University of Mauritius from 1995 to 2005. He was Secretary-General of the Association of African Universities, and President of the International Association of

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Universities. He has also served on the Council of the Association of Commonwealth Universities and was a member of the Governing Council of the United Nations University, Tokyo, Japan.

Prof Mohamedbhai now operates as an independent consultant in higher education. Currently, he is the President of the Mauritius Academy of Science and Technology (MAST).



Dr. Stephenie Alaribe is a Bio and Pharmaceutical Chemist at the Department of Pharmaceutical Chemistry, Faculty of Pharmacy, University of Lagos, Nigeria. Her research focuses on green medicinal, pharmaceutical and natural product chemistry, targeting malaria and cancer signaling pathways through computational and molecular approaches to explore compounds from Africa's diverse flora. She has received several prestigious grants and fellowships, including the Cranfield Female Professor Leadership Programme (UK), Science by Women Fellowship (Spain), Royal Society of Chemistry Research Grant (UK), Nigeria's TET Fund Grant, and the World Bank-supported ACEDHARS Grant. Dr. Alaribe is also an African Science Literacy Network Fellow and recipient of the British Biochemical Society Travel Award. A member of multiple professional bodies, including RSC, IPAN, FEBS and OWSD, she remains committed to advancing African-led drug discovery. Outside the lab, she enjoys reading and watching documentaries.



Dr. Armand Kablan is a lecturer-researcher at the University Félix Houphouët-Boigny (UFHB) and the current President of the National Young Academy of Côte d'Ivoire (JES-CI). With strong expertise in hydrology, climate resilience and inclusive sanitation, he also serves as Programme Assistant at the ISC-Hub funded by the Gates Foundation. Dr. Kablan is leading several AI-based initiatives including Safe Water SOS, a multilingual early warning mobile app for water quality and emergency alerts. He actively collaborates with national institutions such as ONEP, PN-RRC and ONAD, and is a strong advocate for community-driven digital innovation. Passionate about youth leadership in science, he supports capacity building for young researchers

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and promotes science-policy dialogue. He is also a regular consultant for international agencies in the areas of WASH, risk reduction, and digital resilience across West Africa.



Dr. Ali Abdalla is the Executive Director of Shayoub Pharmaceutical Laboratory and President of the Sudanese Academy of Young Scientists (SAYS). His interdisciplinary research integrates pharmaceuticals, natural products and regenerative medicine with sustainable technologies for public health. He developed the Manaseer Solar-Powered Medical Cooling Box – a frugal innovation preserving anti-venom and vaccines in displaced rural areas – and Sara Cream, Africa’s first pharmaceutical-grade natural haircare line rooted in Sudanese ethnobotany. His recent review on African indigenous plants for water purification bridges traditional knowledge with modern science to promote eco-friendly water security solutions. Dr. Abdalla collaborates across Africa and Europe, mentoring emerging scientists and advocating for nature-based, climate-resilient innovations aligned with the UN Sustainable Development Goals (SDGs 3 and 6).



Biologiste de renom, le **Professeur Selly Camara** est reconnu pour son expertise en renforcement des capacités, ingénierie pédagogique et animation participative sur les enjeux climatiques en Guinée. Il se distingue par sa maîtrise de l’analyse des besoins, la conception de formations adaptées et l’évaluation d’actions auprès d’acteurs variés. Son parcours comprend de nombreuses missions de haut niveau en tant que consultant, expert principal et mentor scientifique, avec des contributions majeures à des études d’impact, plans d’adaptation et projets de valorisation des ressources naturelles soutenus par le PNUD, la BAD, l’AFD et l’UICN. Il a exercé d’importantes fonctions, notamment Président du Collège des Sciences Naturelles de l’ASG, Directeur National du Programme Environnement et Conseiller au MESRS. Son engagement dans les réseaux régionaux et plateformes techniques illustre un leadership affirmé dans l’élaboration de politiques environnementales, éducatives et de développement durable.

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Dr. Aziz is an Associate Professor at Cadi Ayyad University, Morocco, and Director of the Laboratory of Water and Environment at the National Center for Study and Research on Water and Energy (Cadi Ayyad University). He supervises six doctoral theses focusing on wastewater treatment and reuse, precision irrigation and the use of biopolymers and nanomaterials for environmental applications. Renowned for advancing innovative technologies, Dr. Aziz's research spans four key areas: wastewater treatment and reuse, alternative adsorption technologies, superabsorbent hydrogel development for smart irrigation and solid waste valorisation through nanomaterial synthesis. He has authored over 130 scientific publications and coordinates several national and international research projects, including three PRIMA programme collaborations. As Chair of the Moroccan Youth for Water Network, he contributed to developing the first regional guidelines for the Water-Energy-Food Nexus. His expertise in decentralised wastewater management has earned him recognition as a keynote speaker at numerous international conferences.



Prof. Hugues Clotaire Nana Djeunga, is member of the Cameroon Academy of Young scientists (CAYS) where he is currently the Dean of the College of Biological Sciences, the Cameroon Society of Epidemiology (CaSE), the African Research Network for Neglected Tropical Diseases (ARNTD), the American Society of Tropical Medicine and Hygiene (ASTMH), and the Royal Society of Tropical Medicine and Hygiene (RSTMH). He is also serving as Consultant/Expert for several committee including the World Health Organization (WHO) Diagnostic Technical Advisory Group (DTAG) for Neglected Tropical Diseases, the WHO Expanded Special Project for Elimination of Neglected Tropical Diseases (ESPEN), the Drug for Neglected Diseases Initiative (DNDi), the Cameroon Onchocerciasis Elimination Committee, the ASTMH Young Investigator Award Committee, and the RSTMH Global Assessor Network, NTD NGO Network (NNN) Peer Review Committee.

AMASA 2025 CONFERENCE SUB-THEMES

**Water
and
Security
Management**



**Green
Hydrogen
Development**



**Water
Energy
Climate
Nexus**



**Policy
and
Governance**



**Education
and
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Enhancement**



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ISBN 978-9914-9636-9-4



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