

IAIA-WNC: ITALY '25 PRESENTATION PREVIEW

Future-Proofing AI: Governance, Sustainability, and Impacts – A Panel

Sustainability is our business

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Introduction and Opening Remarks

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Panel Members



Sarah Ghazal Masri – Abu Dhabi, United Arab Emirate



Maria Vizeu-Pinheiro – Washington DC, USA



Chris Serrano – Sydney, Australia

Sarah is a PhD candidate in Environmental Engineering at the American University of Beirut and holds a Master's in Engineering Systems & Management from Masdar Institute.

Primary focus - Governance

Maria is a lawyer with 13+ years of experience, specializing in environmental, climate, and natural resources governance in LAC and Africa. Maria is currently a Policy Advisor with the World Bank.

Primary focus – Legislation and Policy Making Chris is a Senior Environmental Planner at Arup with extensive experience in environmental impact assessment and is an active participant in digital EIA initiatives in Australia and globally.

Primary focus – The Impact of AI



GAIA-AI Model:

Shaping Tomorrow's Sustainable Governance for Sustainability

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Al Governance

Framework & Best Practices...



Agenda

- AI Governance & Sustainability: Challenges & Opportunities
- GAIA & Sustainable AI Governance Frameworks
- Integrated GAIA-AI Sustainable Governance Model
- Strategic Recommendations
- Key Takeaways & Call-to-Action





Challenges Facing AI



AI Governance to Support the UN SDGs

AI Governance

Set of Frameworks, Policies & Mechanisms shaping how AI is developed, deployed & monitored



Correlation between AI Governance & Sustainability



Challenges & Limitations Facing AI Governance

Lack of Robust AI Governance Frameworks supporting Sustainability

Fragmented Regulations & Legal Compliance Issues

Measurement & Reporting Challenges

Resource Constraints

Digital Inclusion & Equity Issues

Ethical Considerations & Privacy Concerns

The GAIA Framework: Global Advocacy Integrated Action



The GAIA Framework: AI Governance to support the SDGs



GAIA Dimensions

Implementation Strategies

Intersecting the GAIA Framework with SDG Dimensions

GAIA SDGs	Global (G)	Advocacy (A)	Integrated (I)	Action (A)			
Economic	Global trade alignment with green finance	Campaigns for inclusive economic growth (fair wages)	Integrating circular economy into national policy	Funding local green enterprises & social businesses			
Social	Global commitments to gender equality & human rights	Advocacy for equitable access to education & healthcare	Social inclusion in governance models (participatory planning)	Community-based programs for education, health & social protection			
Environmental	Climate agreements (Paris Agreement)	Advocacy for biodiversity, conservation & climate justice	Embedding environmental safeguards in Al policies	Restoration projects, emissions reduction, plastic bans			

GAIA-SDG Matrix: the UAE

GAIA SDGs	Global (G)	Advocacy(A)	Integration (I)	Action (A)
Economic	UAE participation in: • WTO • OECD AI initiatives • GPAI • Digital Cooperation Organization	Promote Al-driven economic growth: • Hosting the World Government Summit	 National AI Strategy 2031 AI-driven policies 	Supporting innovation, entrepreneurship & Al-based industries: • Smart Dubai • "UAE Next 50" initiatives
Social	 UAE's commitment to: UN SDGs (Quality Education, Gender Equality) UNESCO cooperation 	Advocacy through: • "Year of Tolerance" • "1 Billion Meals" campaigns for inclusion & solidarity	Embedding digital skills & education into social fabric • "One Million Arab Coders" initiative	Activating community leadership: • Programs like "Hope Makers" • Youth empowerment platforms
Environmental	UAE leadership role at: • COP28 • Paris Agreement • Net Zero commitments	Advocacy for Green transition via: • Campaigns like "Clean UAE" • UAE Sustainability Week	Integration into national development plans: • UAE Green Agenda 2030 • Net Zero 2050 Strategy	 Real-world implementation: Masdar City Noor Abu Dhabi Solar Plant Clean energy projects

Sustainable AI Governance to support Sustainability: Key Pillars



GAIA-AI Sustainable Governance Model



GAIA-AI Sustainable Governance Model

Main Components based on Best Practices

Data Governance, Digital Strategy & Resource Leadership & Protection & Accountability Allocation Vision Sharing Legal Compliance Cybersecurity Digital Ethics & & Regulatory e-Governance Measures Responsible AI Oversight SDGs Progress Partnership & Digital Innovation & Evaluation & Participatory Accessibility & Research Monitoring Governance Inclusivity Interoperability, User-Centric Data-Driven Transparency & Adaptability & Decision-Making Accountability Design Integration

GAIA-AI Sustainable Governance Model



Recommendations

Policymakers <

Researchers

Industry

Integrate ESG principles into AI lifecycle
Embed SDG Metrics into AI Development

Develop Open, Inclusive Datasets for AI

Create Adaptive Regulatory Sandboxes

AI Policies Aligned with SDGs

Advance Explainable AI Models

Mandate Impact Assessments

Cross-Sector & Cross-Country Collaborations (SDG 17)

Key Takeaways



Conclusions & Call-to-Action

AI GOVERNANCE IS OUR COMPASS, SUSTAINABILITY IS OUR DESTINATION



Empower SDGaligned AI innovations



Use the sustainable GAIA-AI model to guide AI governance

Let's collaborate globally to align AI with Sustainability



Examining the Effectiveness of Environmental Policies and Institutions in Eastern Africa, Latin America, and the Caribbean



ironment, Natural Resources & Blue Economy

Maria Vizeu-Pinheiro Ernesto Sánchez-Triana Juan David Merlo



Agenda

- Context
- Objectives of the Study
- Background
- Cross-Cutting Issues Analyzed
- Evaluation of Key Priority Environmental Topics
- Expected Outcomes





Environmental Challenges and Policy Responses

improved governance



Air and Water Pollution



Scarcity and Overextraction of Freshwater



Waste Management



Marine and Coastal Resources Management



Deforestation and Biodiversity Loss

Policy Response Eastern Africa LAC Air quality standards, cleaner Emissions control, cleaner energy promotion, improved technologies, wastewater sanitation infrastructure, and treatment, sustainable agriculture stricter waste disposal regulation Sustainable management and Integrated water resource improved access management and watershed protection Community-based collection Recycling, waste segregation, and programs and effective waste landfill management management policies Marine protected areas and Marine conservation and sustainable fishing practices sustainable coastal development Sustainable local economies and

Restoration (focus on reducing droughts), sustainable local economies, and improved governance.

Objectives of the Study

Create and examine a <u>database</u> to identify the **strengths and weaknesses** of the design and implementation of **environmental policies and institutions** in Eastern Africa, Latin America, and the Caribbean.





Based on Douglass North's Definition of Institutions

- "The rules of the game in a society"
- Institutions are human-made constraints that shape interaction and include both **formal** (laws, constitutions) and **informal norms** (customs, traditions, community participation)

Measurement is Driven by Key Objectives- Aligned with WB Goals:

- End Extreme Poverty: Reduce the percentage of people living on less than \$1.90/day to under 3%.
- **Boost Shared Prosperity**: Increase income growth of the bottom 40% in every country.



Defining Goals and Setting Priorities

- Clearly define objectives and determine priorities to achieve them.
- Focus on priority issues that have the most impact (such as pollution)
- Also consider additional topics that are fundamental to poverty alleviation (such as biodiversity)

Measuring Institutional Efficiency and Effectiveness



Analyzing Cross-cutting Issues Analyzing Key Topics

1. Analyzing cross-cutting issues:

(i) Quality and effectiveness of the environmental impact assessment system

(ii) Access to Information & Public Participation

(iii) Cross-sectoral coordination

(iv) Accountability system

(i) Quality and Effectiveness of Environmental Impact Assessments

Environmental impact assessments are essential tools for informed policymaking and ensuring sustainable development.

The quality of EIAs can vary significantly across different regions, impacting their effectiveness in promoting sustainability.



(ii) Access to Information and Public Participation



Importance of Access to Information

Access to information empowers citizens, enabling them to make informed decisions and engage in environmental governance effectively.



Public Participation in Governance

Public participation is crucial for ensuring that policies reflect community needs and priorities, fostering a sense of ownership.



Influence on Policy Outcomes

Effective environmental governance relies on incorporating public input, which can significantly influence policy outcomes and sustainability efforts.

(iii) Cross-Sectoral Coordination and (iv) Accountability

Importance of Coordination

Cross-sectoral coordination is essential for developing effective environmental policies that ensure accountability and sustainability.

Sector Collaboration Evaluation

Evaluating how well different sectors collaborate can provide insights into their effectiveness in addressing environmental issues.



2. Analyzing Key topics:

Examine effectiveness of countries policy framework, implementation, and enforcement across major environmental domains



- Natural Resources Management and Global Public Goods :
 - Marine and Coastal Resources Management
 - Freshwater Resources Management
 - Ecosystem and Biodiversity Management
 - Commercial Renewable and Non-Resources Management
 - Climate Change
- Pollution Management and Environmental Health:
 - Air Quality Management
 - Water Pollution Management
 - Hazardous Materials and Chemicals Management
 - E-Waste
 - Mercury Use in Gold Mining
 - Solid Waste Management





Global Pollution Priority Issues (2021)

Global Deaths from Key Environmental Challenges



Expected outcomes



Importance of Country Systematic Analysis

Importance of Time Series Data

Collection. Collecting a time series of data allows for the analysis of trends and patterns over time, providing valuable insights into the effectiveness of policies and the evolving environmental challenges faced by different countries.

Targeted Understanding. Analyzing policies provides insights into the specific environmental challenges faced by different areas and realities.

Tailored Strategies. This approach allows policymakers to develop strategies that are specifically designed to meet the unique needs of each region and country



Eagle view

Current State of Policies of Different Countries in LAC and Africa in a Nutshell

The findings provide insight into the current state of environmental policies and their overall effectiveness in addressing ecological issues.

Identify Best Practices and Lesson Learned

The insights gained from these findings will inform future policy design aimed at promoting sustainability and environmental protection.



Topic	Considerations	Considerations	Mexico	Belize	Honduras	Dominican Desublis	Haiti	Panama	Brazil	Uruguay
PART A - Institutional Context (30%)										
1. Mechanisms to identify environmental priority issues	Environmental agency has adequate information to set priorities and enforce laws	Does the environmental agency have adequate information to set priorities and enforce laws? Yes/No. Explain.								
	Civil society is consulted on the identification of environmental priorities, environmental policy and strategy issues	Is civil society consulted on the identification of environmental priorities, environmental policy, and strategy issues? Yes/No. Explain.								
	Process to set priorities is documented, transparent, and documents are publicly available	Is the process to set priorities documented, transparent, and are the documents publicly available? Yes/No. Explain.								
2. Access to Information and Public Participation	Ine public has access to environmental information and data; Specify general provisions for access to environmental information Public participation process is inclusive (i.e., includes vulnerable populations) and conducted in a culturally sensitive manner. Specify provisions for the involvement of communities as well as those directly interested in the EIA process	Dees the public have access to environmental information and data? Yes/No. Specify the general provisions for access to environmental information. Is the public participation process inclusive (i.e., includes vulnerable populations) and conducted in a culturally sensitive manner? Yes/No. Specify provisions for the involvement of communities and those directly interested in the EIA process.								
3. Quality and Effectiveness of Environmental Assessment System	Environmental Impact Assessment (EIA) is a legal requirement -Provide law name, and key definition and characteristics of EIA according to legal framework EIA system is widely applied, adequately funded and staffed EIA recommendations are monitored and enforced Strategic Environmental Assessment (SEA) is required and applied in policies, plans and programs	Is the Environmental Impact Assessment (EIA) a legal requirement? If yes, provide the law name, and key definitions and characteristics of EIA according to the legal framework. Is the EIA system widely applied, adequately funded, and staffed? Yes/No. Explain. Are EIA recommendations monitored and enforced? Yes/No. Is Strategic Environmental Assessment (SEA) required and applied in policies, plans, and programs? Yes/No. Explain.								
	A government level environmental	Does a government-level environmental approach (e.g.,								

Methodology & Lesson Learned

- Gathering the information from:
 - Countries' Legal and Policy Framework and Institutional Systems.
 - Non-Governmental Organizations (NGOs)
 - World Bank Expertise: Country Environmental Analysis (CEA) and Policy Strategic Environmental Assessments (P-SEAs), Country Climate and Development Reports (CCDRs)
- Building upon the Poster of the "Environmental Impact Assessment System in the Latin American and Caribbean Region". Assessed > 23 nations EIA framework in LAC
- ULTIMATE GOAL: Improve Knowledge



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Thank you







Exploring Al's Environmental Impact and Sustainable Practices

Data centres and AI

Christopher Serrano, Principal Environmental Consultant



ARUP

Introduction

Who am I?

- Impact assessment
- Digital EIA
- Environment-led design
- Planning approvals



Chris Serrano Principal Environmental Consultant



ARUP

Data Centres and AI

Al expansion



Al is the key driver of growth in demand for data center capacity.

¹Midrange scenario is based on analysis of AI adoption trends; growth in shipments of different types of chips (application-specific integrated circuits, graphics processing units, etc) and associated power consumption; and the typical compute, storage, and network needs of AI workloads. Demand is measured by power consumption to reflect the number of servers a facility can house. Source: McKinsey Data Center Demand model

McKinsey & Company

ARUP

Data Centres and AI

Data centre demand

Global demand for data center capacity could more than triple by 2030.



Demand for data center capacity,¹ gigawatts

¹Three scenarios showing the upper-, low-, and midrange estimates of demand, based on analysis of AI adoption trends; growth in shipments of different types of chips (application-specific integrated circuits, graphics processing units, etc) and associated power consumption; and the typical compute, storage, and network needs of AI workloads. Demand is measured by power consumption to reflect the number of servers a facility can house. Source: McKinsey Data Center Demand model

McKinsey & Company



AI and Environmental Challenges

Environmental challenges





Environment-led design and opportunities

Environment and Community



Panel Discussion & Audience Participation

AI's Environmental Impact and Sustainable Practices



Governing Artificial Intelligence Towards Sustainability



Examining the Effectiveness of Environmental Policies and Institutions Using AI





Thank you

