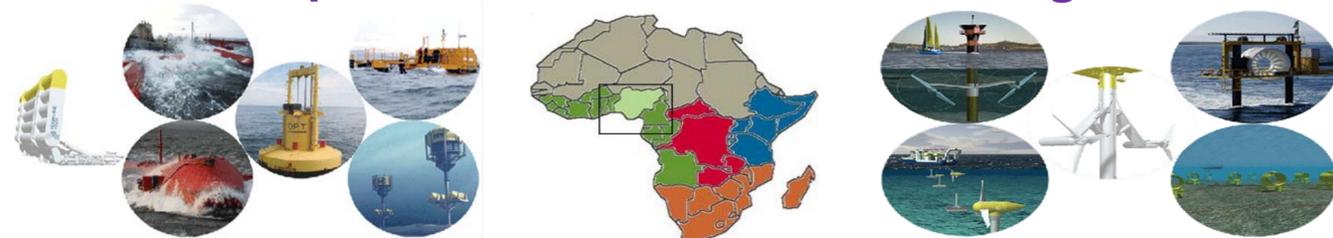


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Introduction

This research explores the emergence and adoption of Ocean Renewable Energy (ORE) by countries with developing economies having ocean resource potential, pointing towards its potential role for the delivery of energy services in Sub-Saharan Africa (SS-Africa). Several studies have shown the importance role played by ORE technologies in the context of delivering energy services for power supply with limited studies on the productive energy service needs for socio-economic and human growth. Using qualitative techniques we obtained and analysed data from Nigeria, a country with coastal area of 853km with potentials to deliver energy services (power supply, desalination of water, aquaculture, irrigation) through ORE for its remote coastal communities. We found that literature for the provision for wider energy services – basic, productive and larger societal energy need was very limited in the context of renewable energy exploitation. Furthermore, ORE application in this field have equally been very scarce but has focused its research and development on electricity supply for thereby ignoring the potential for other energy services delivery such as desalination of water with a by-product of biogas, irrigation, aquaculture, ocean biodiesel/biofuel, hydrogen generation. However to foster this development, an innovation system framework built around energy services delivery must be put in place. This framework must be underpinned by matching the ORE potentials and the energy service requirement within the context of the local communities' requirement consideration. This could positively contribute to the possible commercialisation of ORE technologies and consequently instigate its wide diffusion and bring about socio-economic and human development in these developing countries.

ORE Development in sub-Sahara Africa - Nigeria

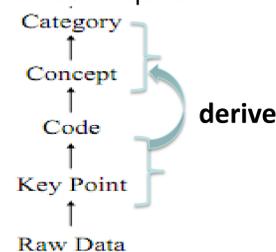


Questions

- What is the potential for ORE in providing access to energy services in developing countries?
- What is the impact of its provision to energy services in sub-Saharan Africa?
- What are the ORE adoption issues to be faced by developing countries?
- What intervention framework is required to foster its development in a bid to provide sustainable energy services in the developing country.

Methodology

- Employed Qualitative and quantitative data collection and analyses techniques



- Used a grounded theory approach underpinned by an action research strategy to construct theory emergent from data which is systematically gathered, analysed and reflected during the research.

Impact on development in Nigeria

But What does development means???

- Structural & societal change
- Human development viewpoint
- Development as short or long (sustainable) term goals



Potential Opportunities



- Cost Savings – reduce cost of deploying grid access and diesel generator usage and deploying small scale ORE to meet coastal community energy needs which are in the region of small KW/h.
- Wider Access to energy services
- Leverage ORE resources from developed economies - Canada, UK, USA.

Adoption Issues

Lack of ORE Policy	
Inadequate capacity and capability resources	✓
Large Capital cost	
Stakeholders perception on innovation	✓
Inadequate institutional framework	
Volatile political environment	
Focus on Wind and solar energy	
Lack of end user engagement	

- Lack of ORE policy
 - Draft policy and action plan currently being developed through NREAP for West African region
- Stakeholders perception on innovation
 - Business case has to be substantiated

Conclusions and Future Work

- As an emerging technology, there is substantial potential for in-depth studies and impact on socio-economic and human development be evaluated
- Large capital cost, inadequate capacity and capability resources and volatile political environment concerns may not necessarily impede adoption contrary to findings from literature and field visit on adoption issues in Nigeria.
- Towards the development of an innovation framework for its adoption and potential role for energy service delivery in Nigeria

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