


# Vulnerability, Impact and Adaptation studies – some briefs & lessons on Climate Change response in Nigeria

Francis Adesina  
OAU, Ile-Ife



# General Background

- Nigeria is visible in the global response to climate change (cc). She has signed the CA.
- Under the UNFCCC, Parties are to prepare NCs on vulnerability & capacity to adapt to CC: Nigeria has the 1<sup>st</sup> NC & is preparing the 2<sup>nd</sup>.
- Developing countries are also to focus on adaptation as a key cc response even in the CA

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- Many NGOs have supported the country's cc response efforts.
  - One of these led to a document on adaptation strategies submitted to HBF.
  - Methodology - situation analyses of key sectors,

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- Examination of adaptation issues & a distillation of Adaptation options from many sources




## Assessment of Impacts and Adaptation to Climate Change (AIACC) projects

- The AIACC projects are key contributions to Adaptation studies in Nigeria.
- There were two projects – one based at Jos and focused on the Sudano-Sahelian region of Nigeria. The other was at Ife looking at food security in west Africa



## Some present and potential Impacts of climate change

- Extreme weather events, erosion, flooding, including coastal areas, sea water inundation
- Water shortages for agric & other purposes –linked to reduced rainfall, increase in demand for water
- Collapse of agric. calendar, failures in rainfed fields, loss of productivity.

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- Infrastructure damages: economic including road and housing etc
  - Biodiversity loss and difficulties in re-vegetating + Migration
  - Decline in human comfort indices; increase in temperature related illnesses; rise in water borne diseases.
  - All of these require adaptation.




# Vulnerability assessment


- Effective adaptation only achievable on a clear understanding of vulnerability of specific groups and communities to climate change.
- Consequently V and A always go together.


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- *Vulnerability is tendency of something to be damaged.*


Opposite is *resilience*, or ability to resist and/or recover from damage.

Thus V&R go together. Something is vulnerable to the extent that it is not resilient, and *visa versa*.

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- The idea of vulnerability/resilience applies to physical entities (people, ecosystems, coastlines) and abstract concepts (social systems, economic systems, countries).
  - Factors that cause damages are known as *hazards*; each has level of *risk*, or *likelihood* of occurring.

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- Vulnerability assessment helps determine how able a community is able to adapt to cc.
  - Many vulnerability factors not directly related to climate. E.g. access to services and control over resources are key to ability to adapt to CC.

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- Socio-economic dimensions of vulnerability, and factors that make certain groups particularly vulnerable should be understood

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- Originated from the Latin word - *vulnerre*, which means *to wound*.
  - VA is necessary to know where one is before mapping out where is going.
  - VA is essentially a multi-discipline business. Depending on the scale of analysis one person is hardly able to complete the steps alone.




# Procedure


- There is no single "correct" method for V&A.
- Procedures:
  - Can be single or multiple issue assessment;
  - Can be based on primary/secondary data
  - Consider impact on socio-economic or physical environment
- The suitability of each depends on scope, area of interest




Field work based VA: Intervention in the use of improved stove for domestic cooking (on going)

- An intervention study at the edge of the Guinea savanna in Oyo State.
- It was to introduce efficient wood stove to reduce deforestation
- It started with a VA relating to fuelwood use. Considerations to use for industrial purposes.

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- Businesses that make heavy use of wood - bakery, tobacco roasting, local wine from millet, *garri* and *fufu* production.
  - A semi-structured questionnaire was used to collect relevant information. In-depth interviews helped to fill in gaps.


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- Our VA show the communities to be vulnerable to situations where wood becomes unavailable.
  - People were generally poor & so have weak adaptive capacity.
  - Use of wood dominant because it is cheap and can cost nothing in some locations.

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- Investing in other sources believed to be unwise: wood is cheap – alternatives ‘too expensive’
  - Local people eager to adopt new efficient
  - Charcoal sellers resisted the idea - would reduce their sales.



## For Second NC

- As part of the 2<sup>nd</sup> NC, we analyzed vulnerability of the coastal zone by adapting templates that worked elsewhere
- Used SLR trend data from NOAA
- Related SLR to parameters as rock-type, landform, relief and erosion/depositional trends.

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- Study showed vulnerabilities are generally high along the coasts but that the Niger Delta area are more vulnerable than other parts.
  - Vulnerabilities could increase with greater rise in sea level.




## Relative vulnerability - agriculture

- Involved analyses of three groups of variables – *Exposure*, *adaptive capacity* and *sensitivity* (diversity of crops).
- Showed variabilities and indicates that challenges are greater in the north east of the country.



## General Conclusion from the VAs

- Nigeria is highly vulnerable to changes in climate
- Adaptation efforts must be prompt: adaptive capacities can become poorer without an urgent intervention
- Adaptations are required at regional and local levels

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- Finer understanding of Vulnerabilities required
  - Wider study of community vulnerability necessary as being pursued in the NASPA project.