



Suitable bioenergy options in the South; traditional vs high-tech: A case study in Nigeria

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Backgrounds

- Main focuses of this conference
 - Descrecimiento is also of a policy proposal for countries of the Global South: **lines of action that are applicable in developed countries are not necessarily applicable in the countries of the South.**
 - The first Conference North-South of Degrowth-Descrecimiento, Mexico 2018 aims **to open a major debate on convergences and differences in the proposals of the North and the ones of the South.**

The image shows a screenshot of the website for the 'First North-South Conference on Degrowth-Descrecimiento Mexico City 2018'. The page has a dark blue background with a starry pattern. At the top, there is a navigation bar with links: Home, Call for papers, About Conference, Speakers, News, Congress Venue, Organizers, Registration, Contact us. The main heading is 'WHAT DO WE MEAN BY DESCRECIMIENTO?'. Below this, there are three paragraphs of text explaining the concept of Descrecimiento. The first paragraph defines it as a new word or neologism adopted in 2007. The second paragraph explains that it implies a vision of the world that rejects techniques and investments that destroy biological and cultural diversity. The third paragraph states that it involves a practice that recognizes the political, economic, social, cultural and ecological conditions of the countries of the Global South. The page number '2' is visible in the bottom right corner.

Descrecimiento en línea gratuito
September, 3rd - 7th
First North-South
Conference on Degrowth-Descrecimiento
Mexico City 2018

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WHAT DO WE MEAN BY DESCRECIMIENTO?

Descrecimiento is the new word or neologism which was adopted unanimously in the First Colloquium La Ajustera por el Descrecimiento, held in 2007 in the city of Mexico, to translate the French slogan décroissance, used by the original movement born in 2003 after the publication of Serge Latouche's article in Le Monde Diplomatique (Pour une société de décroissance). It was quickly translated in other European countries as decrecimiento (Spain), postwachstum (Germany) and as degrowth in English. The idea behind descrecimiento has been to denote the will to reduce consumption and the ambitions of power and money, and to eliminate the abstract common connotation of this word in scientific language. The word descrecimiento does not exist so far in conventional dictionaries, however, it has been included in the vocabulary of Degrowth published in Europe a couple of years ago.

Descrecimiento implies a vision of the world that fully rejects techniques and investments that destroy the biological and cultural diversity of the territory, which cause cancers and other serious alterations to human health, and endanger the existence of the humanity, which induce the acceleration of natural disasters: drought, hurricanes, floods, tornados, heat waves, which create oil wars or water wars, pandemics and biogenetic catastrophes. It involves a challenge to the modern way of life founded on the use of devastating modern techniques, unlimited economic growth and the production of illusions of progress, development and modernity.

Above all, it implies the will of slashing, individually and collectively, the use of transportation, pumping, generation of electricity, education and health services, provided by the State and the Market, as well as the production and consumption of industrial products. It involves a practice that recognizes the political, economic, social, cultural and ecological conditions of the countries of the Global South. It involves the rejection of growth for the sake of growth that does not take into account the nature of the production.

Descrecimiento is also of a policy proposal for countries of the Global South: lines of action that are applicable in developed countries are not necessarily applicable in the countries of the South. The first Conference North-South of Degrowth-Descrecimiento, Mexico 2018 aims to open a major debate on convergences and differences in the proposals of the North and the ones of the South.

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Backgrounds

- To start discussions on these issues, we should identify;
 - Actions which are applicable in developed countries but are **not applicable in the countries of the South**
 - **Differences that are** in the proposals of the North and the South

The objective of this study

- This study investigates technology options the local stakeholders in the Southern countries require to ensure sustainable society
- We use bioenergy technologies in Nigeria as a case study

Methods

- A traditional low-tech option (improved cook stove) was compared with much modern and high-tech options (bio-ethanol, biogas, and combined heat and power)



Low-tech

VS



High-tech

Methods

- Four types of conversion technology which are popular or anticipated in Nigeria
 - Bioethanol
 - Biogas
 - Improved cook stove
 - CHP
- Six criteria which seem to be important for Nigerian bioenergy are selected by local consultants
 - Water use and efficiency
 - Land use and the change
 - Price and supply of food
 - Jobs
 - Productivity
 - Infrastructure and logistics
- These criteria are selected from Global Bioenergy Partnership (GBEP) sustainability indicators for bioenergy

Methods

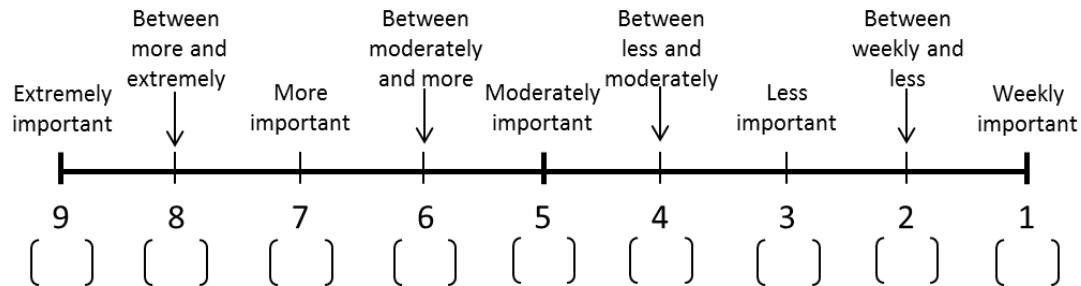
- Multiple criteria decision analysis (MCDA) was applied
 - to obtain stakeholders' comprehensive valuations which consider various aspects of sustainability
 - MCDA is frequently applied to bioenergy and environmental issues that has various stakeholders

Methods

- Respondents were asked the following two questions:
 - how much, for instance, bioethanol significantly contributes to water use efficiency
 - how important each criteria is for the production of bioenergy

4. Please select how important following criteria are to produce any kind of bioenergy.

4-1 Water use and efficiency (WU)



Methods

- A questionnaire survey for various stakeholders in Nigeria was conducted in 2017
 - National/local policymakers
 - Feedstock producers
 - Researchers
 - Farmersetc.
- In total, 244 questionnaires were collected from the stakeholders
- From the data, we estimate relative weights of each bioenergy options
 - The importance of each bioenergy technology from the view point of sustainability

Methods

- Relative weights are estimated by the following matrix considering both the contribution of each technology to sustainability and importance of the criteria

$$\begin{pmatrix} W_{BET} \\ W_{BGS} \\ W_{ICS} \\ W_{CHP} \end{pmatrix} = \begin{pmatrix} C_{BET}^{BET} & C_{LU}^{BET} & C_{FP}^{BET} & C_{JO}^{BET} & C_{PR}^{BET} & C_{IF}^{BET} \\ C_{WU}^{BET} & C_{LU}^{BET} & C_{FP}^{BET} & C_{JO}^{BET} & C_{PR}^{BET} & C_{IF}^{BET} \\ C_{WU}^{BGS} & C_{LU}^{BGS} & C_{FP}^{BGS} & C_{JO}^{BGS} & C_{PR}^{BGS} & C_{IF}^{BGS} \\ C_{WU}^{ICS} & C_{LU}^{ICS} & C_{FP}^{ICS} & C_{JO}^{ICS} & C_{PR}^{ICS} & C_{IF}^{ICS} \\ C_{WU}^{CHP} & C_{LU}^{CHP} & C_{FP}^{CHP} & C_{JO}^{CHP} & C_{PR}^{CHP} & C_{IF}^{CHP} \end{pmatrix} \begin{pmatrix} W_{WU} \\ W_{LU} \\ W_{FP} \\ W_{JO} \\ W_{PR} \\ W_{IF} \end{pmatrix}$$

- Comparison between W_{ICS} and average of W_{BET} , W_{BGS} and W_{CHP}

Results 1

- The stakeholders showed preference to low-tech bioenergies over the high-tech one
 - Significant difference at the 1% level



VS



Low-tech

0.445

Weights

High-tech

0.411

- There were no significant differences in the gender preferences of each option

Results 1

- The results mainly come from very low weight for **bioethanol**

– Improved cook stove 0.456

– **Bioethanol** 0.268

– Biogas 0.476

– CHP 0.490

Excluded

- So we exclude bioethanol, and compared low-tech (W_{ICS}) with biogas and CHP (average of

W_{BGS} and W_{CHP})

Results 2

- The stakeholders showed preference to high-tech bioenergies over the low-tech one (**opposite results!**)
 - Significant difference at the 1% level



VS



Low-tech (ICS)

0.445

High-tech (BGS, CHP)

0.483

Weights

- There were no significant differences in the gender preferences of each option again

Results 3

- Who values high-tech higher?
 - Comparison with **policymakers** (local and national) and **production sites** (cassava processors, farmers, ethanol producers, and feedstock processors)
 - **Production sites** values high-tech (bioethanol, biogas, and CHP) higher than **policymakers**
 - For the average of three options (bioethanol, biogas, and CHP)
 - Significant difference at the 10% level
 - For the average of two options (biogas and CHP)
 - Significant difference at the 5% level

Considerations and conclusions

- No gaps between the North and the South
 - The North tends to introduce new (high) technologies to the South
 - The South wants high-tech bioenergy
 - No gaps were found
- A gap between **policymakers** and **production sites in the South**
 - **Production sites** prefer high-tech to low-tech
 - There is a gap within the South

Considerations and conclusions

- Technology transfer is necessary for degrowth
 - Because technology is an important factor not to depend on economic growth
- Policy support to promote technology dissemination to the South is also important
- But we have to be aware of the gap between
 - Policymakers and production sites in the South

Thank you very much
for your attention!



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