

Final Progress Report

Sustainability Science Program

September 1, 2007 - May 31, 2008

Name: Daniele Cesano
Date: May the 6th 2008
Your field(s): Biofuels, climate change, agriculture, policy and financing mechanisms
Faculty host(s): Henry Lee, Belfer Center for Science and International Affairs;
John Holdren, Department of Earth and Planetary Sciences;
Calestous Juma, Belfer Center for Science and International Affairs

Description of SSP-related research activity, including a title: Sustainable biofuels, rural development and private sector engagement: what can be learned from Brazil?

Abstract (one paragraph): Liquid biofuels are produced mostly at a large scale. However, some pilot projects show that they can be developed also at a small scale. This research project has aimed to understand the feasibility of small-scale biofuel projects and their socio-economic and environmental benefits. The results of the analysis have demonstrated that it is feasible to produce biofuels also at a small scale if an innovative policy framework is introduced. The socio-economic benefits of small scale biofuel projects would justify the introduction of such policies.

1. Identification of the problem you address (1 sentence to a paragraph): My research has been addressing the feasibility of producing biofuels at a smaller scale and the socio-economic and environmental benefits that would be derived as a rural development strategy. I looked at the scale issue in biofuel project development to see the feasibility of producing biofuels also at the smaller scales. I looked at biofuels as an agro-forestry project and as a way to improve socio-economic development in rural areas.
2. Key question asked about the problem (1 sentence to a paragraph): under what policy framework can biofuels be produced at a small scale and contribute to rural development?
3. The methods by which you answered that question (1 sentence to a paragraph): Analysis of biofuel policies in Brazil; data gathering and analysis of 3 on-going projects in Brazil; financial evaluation and analysis of how small scale projects can unfold.
4. Principle literature upon which the research drew (methodological and substantive, e.g., innovation, incentive-based environmental management, science and technology studies): Ethanol and biodiesel policy reviews; biofuel project development reports; technological papers on specific production processes and technology; reports and papers on case studies.

5. Empirical data acquisition description (1 sentence to a paragraph): Data has been acquired mostly during a field trip to Brazil in mid-March. Some other data have been gathered from the literature.
6. Geographical region studied (if appropriate): Mostly Brazil. Marginally: sub-saharian Africa and India.
7. Recommendations that might be relevant for your problem (1 sentence to a paragraph): Collaborate with a number of projects and financial, development and academic institutions that are interested in pursuing similar goals. Pragmatic solutions to this research can be found mostly through inter-disciplinary applied research.
8. A description of the final product(s) you have/are aiming to produce (e.g., article in X journal): One report; 2 journal papers (Energy Policy and Trocaire Development Review); 2 magazine articles (Nuova Energia)
9. Description of major other intellectual or professional advancement activity(ies) over the past academic year, including working title(s) (e.g., PhD qualifying paper, dissertation, non-SSP research project paper, job search): 1 paper in Trocaire Development Review; submission of 1 article to 1 conference; attending 3 conferences; attending 1 single day event; presenting my research finding in several contexts (Columbia University, ETIP seminars, SSP seminar, government of Bahia, Petrobras).
10. Please list citations for reports, papers, publications and presentations that built on your fellowship research (please list full citations here, paragraph length abstracts, and attach copies of URLs if possible):
 - Participating in the Planning Meeting of “Leadership for Climate Security”, REDEH and LEAD, Rio de Janeiro, Brazil, October 2007
 - Cesano D and H. Lee, 2008: Biofuel production, rural development and private sector engagement: what can be learned from Brazil? Harvard Report. May 2008.
 - Cesano D. and H. Lee, 2008: Biofuel production, rural development and private sector engagement: what can be learned from Brazil? Energy Policy. To be submitted/May 2008
 - Cesano D., 2008: Are biofuels a feasible option to reduce poverty in a changing climate? Learning from the Brazilian experience. Trocaire Development Review 2008. Trocaire. Under review
 - Presentation at University of Connecticut, February the 1st 2008, Environmental Seminars Series. Title: “Water, agriculture, climate change and biofuel production: Challenges in inter-related systems”

- Presentation at the SSP seminar, Harvard University, 7th of April 2008. “Sustainable biofuels, rural development and private sector engagement: What can be learned from Brazil?”
- Presentation at the Energy, Technology and Innovation Program seminar, Harvard University, 15th of April 2008: “Sustainable biofuels, rural development and private sector engagement: What can be learned from Brazil?”
- Presentation at Columbia University, E3B, 17th of April 2008. “Biofuels and poverty reduction: is the link possible?”
- Presentation to a seminar on biofuels and rural development organized in partnership with the government of Bahia State, Brazil. June the 3rd 2008 “Poverty reduction and the biofuel industry: which technological options do we have?”
- Presentation to Petrobras (Brazilian oil company), May the 29th 2008. Presentation of my research finding at a roundtable discussion.

11. Principal collaborators outside Harvard (list name and institution):

- o Marcos Falcao, ETENE, Banco do Nordeste do Brazil, Brazil
- o Marcelo Leal, COOPERBIO, Brasil
- o Werner Fuchs, COOPERBIO BRASIL, Brazil
- o Thais Corral, REDEH, Brazil
- o Denis Delavi, LIMANA Poliservicos

12. List any awards or grants that you have received this year for the current or coming year. Please provide details regarding title of award, financial amount, and date of award:

- o November 2007, attending National Biodiesel Conference at the discounted price of 100\$ (instead of 950\$)
- o October 2007, 3000\$ grants from the Environment and Natural Resource Program for a field trip to Brazil

13. If you are moving to a new position, please list your contact information there:
