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Experiences from field testing of socio-economic impact indicators
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• Two entities:
• The Proforest Initiative
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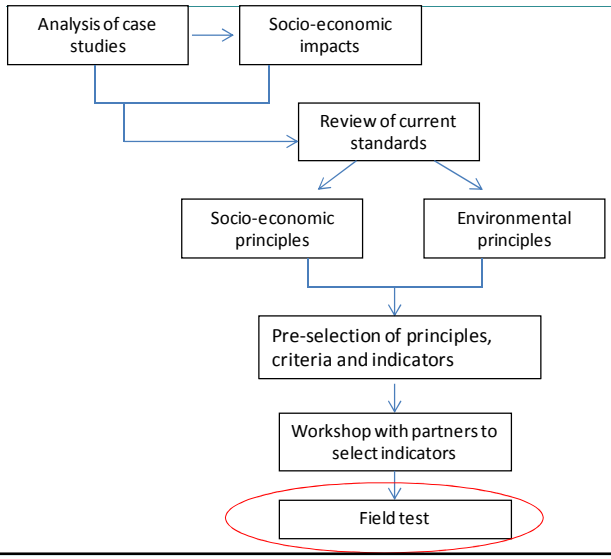
Global-Bio-Pact socioeconomic indicators



Field testing Global-Bio-Pact socioeconomic indicators

- Socioeconomic indicators field tested in selected case study feedstocks/countries: Brazilian sugarcane and Argentinean soy
- Field tests:
  - J. Pilon S/A – Açúcar e Álcool, Cerquilho São Paulo, Brazil in June 2012
  - Viluco S.A, Santiago del Estero/Tucumán, Argentina in September 2012

Methodology

- Questionnaire sent to operations prior to visits
- Field visits:
  - Interviews with staff and management
  - Questionnaires to employees, outgrowers and contractor companies.
  - Questionnaires to local communities
- Three days of field work for each case study

Assessment of the indicators

- Clarity
- Availability
- Relevance
- Measurability
- Temporal availability

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Results

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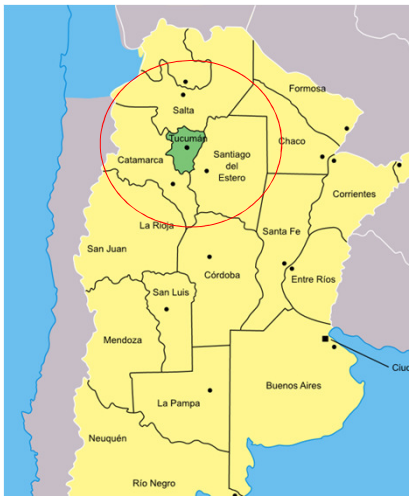
J. Pilon S/A – Açúcar e Álcool

- Municipality of Cerquilho, São Paulo, Brazil
- Cerquilho: population 36 349
- Sugarcane production area: own land: 5 071 ha, rented land: 5206 ha
- 1024 direct employees

Viluco S/A

- 22 fields located in the north-eastern Argentina, in the provinces of Tucumán, Salta, Santiago del Estero and Catamarca.
- Soy crushing and biodiesel plant in the town of Frias, Santiago del Estero
- 25170 ha of own land and 10 000 ha of rented land.
- 280 direct employees



Socioeconomic indicators: contribution to local economy

J. Pilon S/A (Brazil)	Viluco S.A. (Argentina)
1.3 million tonnes of sugarcane produced annually: • 85 000 tonnes of sugar • 18 million litres of anhydrous ethanol • 32 million litres of hydrous ethanol	580,794 t of soy were processed in the biodiesel plant: • 413,600 t of flour • 36,486 t of soybean husks • 116.701 t of biodiesel
~10 million EUR paid to government annually in taxes and social security payments (2011)	n/a
~3167 EUR for community investment	725,336 EUR for community investment (Vicente Lucci Foundation)
40-51% of sugarcane from outgrowers	72.58% of soy from outgrowers
~17 million EUR paid annually to 150 suppliers of sugarcane (2011)	~ 72 million EUR paid to 242 suppliers of soy (2010-2011)

Socioeconomic indicators: contribution to local economy

- Difficult to obtain accurate economic information
  - Format of capturing data
  - Confidentiality
  - Integrating agricultural and industrial data
- Indicators on production farmed by smallholders, clear, easily measureable and relevant.
- Community investment:
  - Differences in data capture
  - In-kind contributions, not only monetary
  - Vicente Lucci Foundation – Group for companies, not possible to establish only for soy production

Socioeconomic indicators: employment

J. Pilon S/A (Brazil)	Viluco S.A. (Argentina)
Mean salaries: • Agricultural division = 422 EUR • Administration = 882 EUR • Industrial division = 502 EUR	**Industrial sector:** Administrative: 1695 EUR Storage: 1240 EUR Laboratory: 1973 EUR **Agricultural sector:** Tractor driver: 1615 EUR Farmworker: 537 EUR
20 % of the employees are temporary migrant workers hired for the harvest period (6 months/yr)	85% of employees are from local area (Tucumán/Santiago del Estero) Contractors carry out most of agricultural labour
The company provides workers with free transport, discounted medical care and housing to some employees	Agricultural sector: housing, basic services and transport (if not own a vehicle)
26 work related accidents/yr (2011)	Industrial sector: 13 accidents (2011) Agricultural sector: 4 accidents (2011)

Socioeconomic indicators: Employment

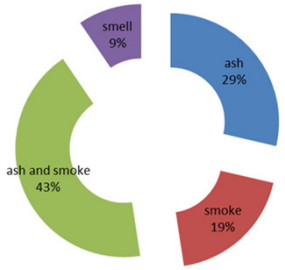
- Direct vs. indirect labour:
  - Difficulty of obtaining information about contractor labour – Viluco S/A uses ~20 contractor companies for agricultural operations
- Salary information relevant and easily obtainable – useful to link with information about number of workers in different categories and minimum salaries of the country
- Information about accidents highly relevant
  - More standardized format of collecting information (per workdays of years, lost workdays for accidents)

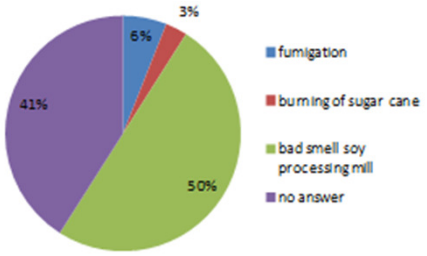
Environmental indicators

J. Pilon S/A (Brazil)	Viluco S.A. (Argentina)
11% of the land owned by the mill (558 ha) under protection)	Around 4% of the operations own lands (~1007 ha) are under protection
573.33 ha land converted in 2011 – most from pasture, the rest from other cultures No native vegetation converted	No expansion of own/rented lands
Sugarcane burned 182 days/year 32% of the area is burned	Burning not used
Fertilizer use 20-05-20 (NPK) = 500 kg/ha/yr	Approximately 50kg of 'Super Fosfato Triple' [Ca(H2PO4)2•H2O] applied per ha/yr, (46% phosphate /14% Calcium)
No reduced/no-till farming used	100% of production under no-till
Soil analysis every 4 yrs	Soil organic material analysis carried out once a year, phosphorus analysis carried out every 3 years

Environmental indicators: community perceptions on air quality

J. Pilon S/A (Brazil) (n=40) **Viluco S.A. (Argentina) (n=32)**





Environmental indicators

- Information on agricultural practices indicative potential impacts on soil, air, biodiversity and water – relevant in a socioeconomic context
- Direct changes perceived by communities more difficult to identify:
  - Established sector (sugarcane)
  - Urban communities
- Air quality – main negative impact identified by community members.
  - Importance of community questionnaires

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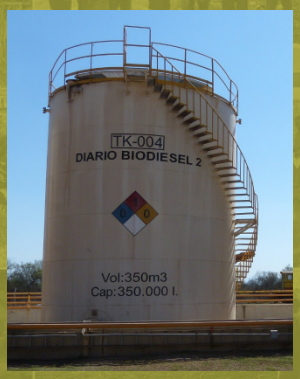
Conclusions



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- Most of the indicators clear and easily understandable for the respondents – Some could be further refined.
- Most of the information was available – where not, the company did not collect data in the format required
- Different ways of capturing data - difficulties of collecting standardized information across different operations.

- Availability of data improved if the indicators were applied in a more formalized way
  - e.g. as a part of certification scheme - operations would have systems in place to routinely collect the information from their operations.
- Low temporal availability of the information requested.
  - Information should be collected annually so as to monitor changes in the indicators.
- Most of the indicators quantitative in nature and easily measured.
- Qualitative indicators more difficult to measure
  - Qualitative indicators could be further standardized making them easier to measure and compare across timescales.

- The combination of company interviews with employee, community and outgrower questionnaires a good method for the monitoring the indicators.
- Community questionnaires:
  - Useful for gaining an indication of community perceptions of impacts.
  - Difficult to link the impacts mentioned to biofuel production.
  - Supportive data to the information obtained with other methods.

- Respondents agreed that most of the indicators were very relevant for monitoring socioeconomic performance of the operations.
- Compare against what?
  - Would be useful to relate the information collected to some general parameters for a meaningful analysis of the performance of the operations.
  - Indicators could be used to measure change over time
- One possible use of the indicators would be to ask operations to report annually on a subset of the indicators. The reports could then be verified annually, for example, as a part of a certification audit.