

# Impact significance in sugarcane industry EIA

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2. Research question, objective and methods
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## 1. Context

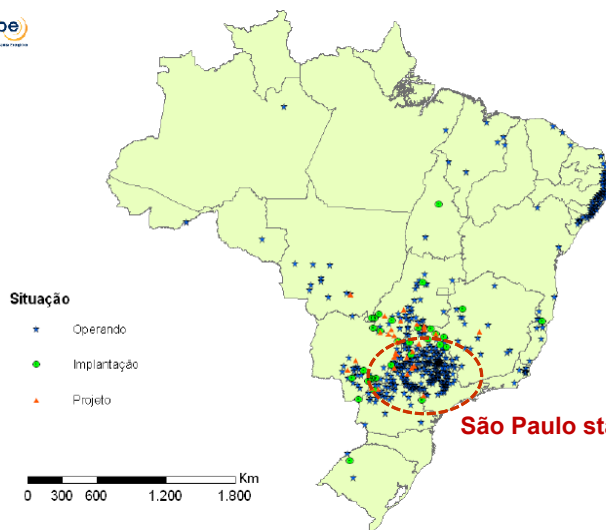
- Sugarcane is grown in more than 100 countries



[http://sugarcane.org/internal/images/map-of-sugarcane-growing-countries/image\\_view\\_fullscreen](http://sugarcane.org/internal/images/map-of-sugarcane-growing-countries/image_view_fullscreen)

## 1. Context

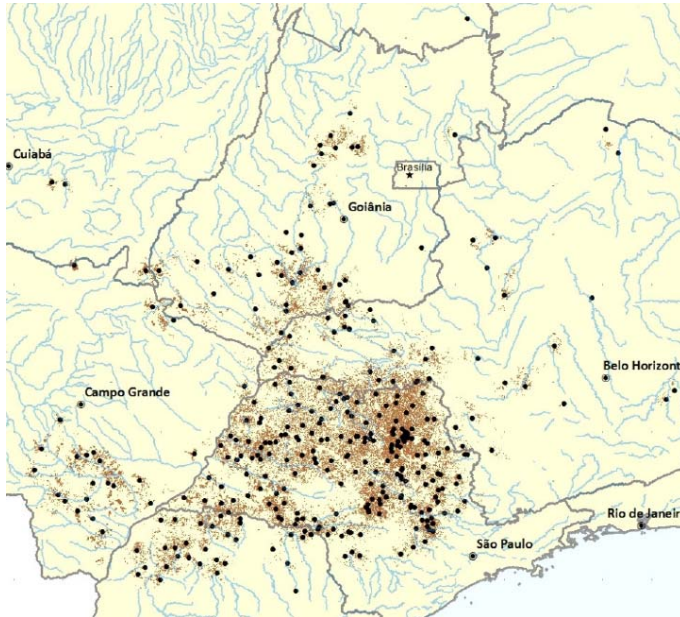
- Brazil is the biggest sugarcane producer: 650 Mt/year



~ 400 sugarcane mills in Brazil (EPE, 2010)

São Paulo state

## Mills in Southeastern Brazil



- Mills
- Planted area

## 1. Context

### □ Environmental Impact Assessment

- Required since 1986
- Usually prepared by private consultancies
- Sugarcane mills are examined by state environmental agencies



[http://2.bp.blogspot.com/\\_O4xqHm.../QDKYUICKGT/E3YnWIAAAAAAAAE/wB5S3apvY4/s1600/mapabrazil.png](http://2.bp.blogspot.com/_O4xqHm.../QDKYUICKGT/E3YnWIAAAAAAAAE/wB5S3apvY4/s1600/mapabrazil.png)

## 1. Context

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- ❑ **Current debate on EIA**
  - **going beyond the avoidance of harmful effects to seek positive contributions to sustainability**

GIBSON, R. B. *et al.* Sustainability Assessment: Criteria, Processes and Applications. London: Earthscan, 2005.  
JOÃO, E.; VANCLAY, F.; BROEDER, L. DEN. Emphasising enhancement in all forms of impact assessment: introduction to a special issue. *Impact Assessment and Project Appraisal*, v. 29, n. 3, p. 170–180, set. 2011.

- ❑ **For this purpose – we must know what is important for sustainability**
  
- ❑ **Impact significance determination:**
  - **to indicate the most important issues**
  - **acceptable thresholds**
  - **to guide mitigation proposals**

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## 1. Context

## 2. Research question, objective and methods

## 3. Case studies and results

## 4. Discussion

## 5. Conclusions

## 2. Research question and objective

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Is significance determination being helpful to draw mitigation measures in the studied EISs?



***Our objective is to explore determination of impact significance identifying its connection to mitigation measures***

## 2. Research methods

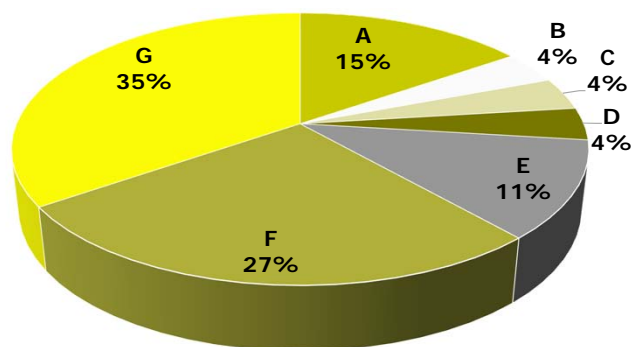
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Question	Description of the criteria
1. Does the EISs describe impact significance and the <u>method adopted</u> for its determination?	Search of methods for determination of impact significance and results of the classification.
2. Are there <u>explicit links</u> between significant impacts and mitigation measures?	<u>Moderate and high significance impacts</u> were selected and compared to the proposed mitigation measures. If the relation between impact and mitigation is not clear, descriptions of both of them were analyzed to check whether they are compatible.

## 2. Research methods

- **Sample:**
  - 26 EIA processes, 2009-2013
  - Specific regulation: São Paulo State Resolution SMA 88/2008
    - ◆ New criteria for screening of ethanol projects [EIS or simplified environmental study] and general table of contents for EIS of ethanol projects ]
  
- **A content analysis of the relevant chapters and sections of the documents was performed (Krippendorff, 2004)**

## 3. The sample



Share of 7 consultancies in the preparation of EISs analyzed  
(n = 26)

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1. Context

2. Research question, objective and methods

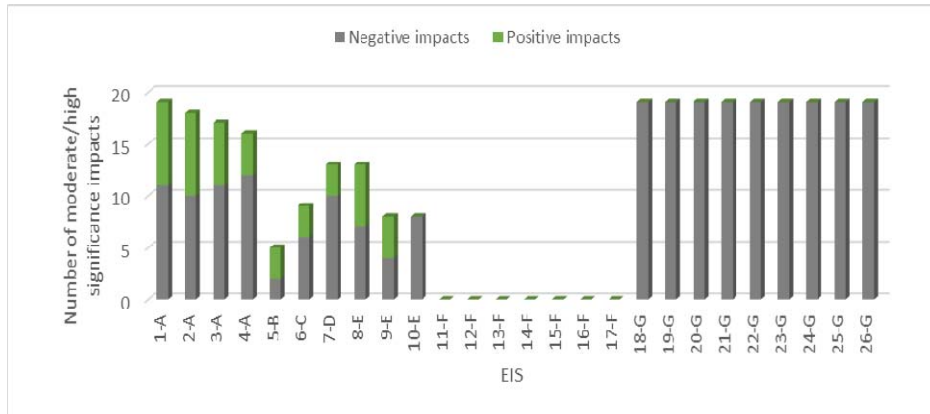
**3. Case studies and results**

4. Discussion

5. Conclusions



### 3. Results - characteristics



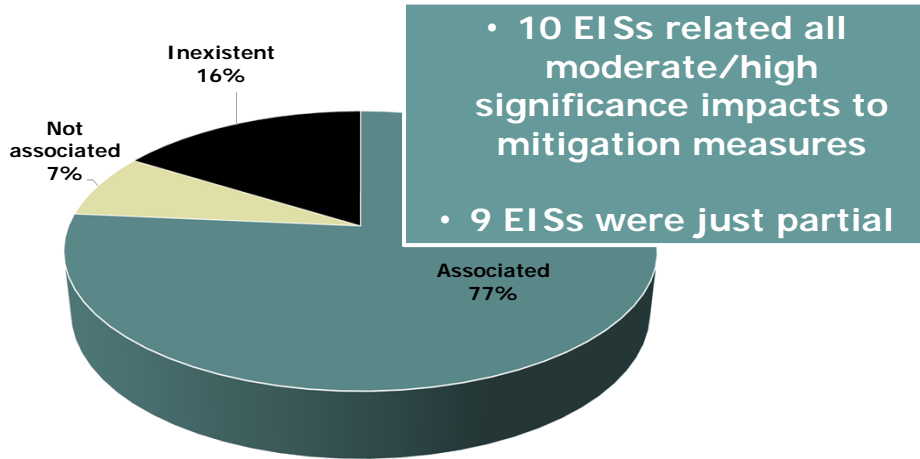
Number and nature of impacts classified as moderate or high significance in 26 sugarcane mills EIS

### 3. Results - methods

- **Methods for significance determination:**
  - Different meanings – before or after mitigation
  - Very brief explanation
  - All based on professional experience only
    - ◆ Ranking was made considering various impact characteristics, but in just one case there is a combination matrix (magnitude x mitigation efficacy)



### 3. Results – link to mitigation



Percentage of impacts classified as significant that have been associated with mitigation measures\* (297 impacts in 19 EIS)

\*preventive or corrective for adverse impacts / enhancing for positive impacts

1. Context

2. Research question, objective and methods

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## 4. Discussion

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- ❑ **Poor practice of significance determination**
  - 7 EISs don't determine significance
    - ◆ 1 consultancy
  - 10 EISs feature clear connection to mitigation
    - ◆ 5 different consultancies
  - 1 EIS shows significance before and after the mitigation
  
- ❑ **The analysis of impact significance was **not fed back to the definition of environmental management plans** in 15 EIS - 58% of the sample**

## 4. Discussion

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- ❑ **Method: broadly based on professional judgment**
  - ❑ Low transparency regarding the criteria
  - ❑ Absence of public involvement or consideration of citizens standpoints
  
- ❑ **This result corroborates other studies where little or no effort is made to explain the approach used to determine impact significance (Lawrence 2007; Wood 2008) and to justify the results.**

Lawrence, D.P., 2007. Impact significance determination - Designing an approach. *Environmental Impact Assessment Review*, 27(8): 730–754.

Wood, G., 2008. Thresholds and criteria for evaluating and communicating impact significance in environmental statements: "See no evil, hear no evil, speak no evil"? *Environmental Impact Assessment Review*, 28(1): 22–38.

## 5. Conclusions on the research questions

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*1. Does the EISs describe impact significance and the method adopted for its determination?*

- ❑ In 19 out of 26 EISs, mostly based on professional judgement

*2. Are there explicit links between significant impacts and mitigation measures?*

- ❑ Significance determination is supporting/ connected to mitigation proposals in 10 out of 26 cases - 9 cases are not consistent

## 5. Conclusions

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- ❑ Changes in significance determination would be not just a communication improvement, it would
  - strengthen the design of appropriate management and monitoring programs
  - support trade-off management
- ❑ Requirements in ToRs and guidelines about significance determination would be helpful to improve the current practice

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## Thank you!

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