



# ***GSB Latin American Convention***

FAPESP, São Paulo

23-25 March, 2010

FAPESP BIOEN Program





# *The challenge: GSB working hypothesis*

- It is physically possible for bioenergy to sustainably meet a substantial fraction of future demand for energy services ( $\geq 25\%$  of global mobility or equivalent) while feeding humanity and meeting other needs from managed lands, preserving wildlife habitat, and maintaining environmental quality.
  - We intend to approach this unconstrained by current practices, since a sustainable and secure future cannot be obtained by continuing the practices that have led to the unsustainable and insecure present.

# 2050: Available land for biofuels

(Doornbosch and Steenblik, 2007; "Biofuels: Is the cure worse than the disease?")

Land (in Gha)	North Am.	South & Centr. Am.	Europe & Russia	Africa	Asia	Oceania	World
Total land surface	2,1	2,0	2,3	3,0	3,1	0,9	13,40
1 Apt for Rainfed cultivation	0,4	0,9	0,5	0,9	0,5	0,1	3,30
2 Apt and Under forest	0,1	0,3	0,1	0,1	0,0	0,0	0,80
3 Apt, already in use	0,2	0,1	0,2	0,2	0,6	0,1	1,50
4 Necessary for food, housing and infrastructure until 2030/50	0,0	0,1	0,0	0,1	0,1	0,0	0,30
5 Available (Gross) [5=1-2-3-4]	0,00	0,25	0,08	0,44	-0,07	0,04	0,74
6 % for grassland	0%	0%	50%	60%	n/a	0%	
<b>7 Additional land potentially available (7)=(5)x(1-% for grassland)</b>	<b>0,00</b>	<b>0,25</b>	<b>0,04</b>	<b>0,18</b>	<b>-0,07</b>	<b>0,04</b>	<b>0,44</b>

- a. Most studies assume that only a small fraction of additional land is needed to feed the world's growing population — from 6.5 billion people at present to 9 billion people in 2050 — and that most of the increase in food requirements will be met by an increase in agricultural productivity.<sup>6</sup> Here it is assumed that 0.2 Gha is needed for additional food production (based on Fisher and Schrattenholzer, 2001 where a yearly increase in agricultural productivity of 1.1% is assumed); the remainder (roughly 0.1 Gha) is needed for additional housing and infrastructure.
- b. A negative number is shown here as more land is cultivated than potentially available for rain-fed cultivation because of irrigation. The negative land available has not been rounded to zero because food imports are likely to be needed from other region with implications on their land use.
- c. Numbers in this column don't add up because of rounding.

So. Centr. Am: 0.25GHa @ 10kL/Ha.yr → 2,500GL /yr (in 2005: 40 GL)

# Reference quantities

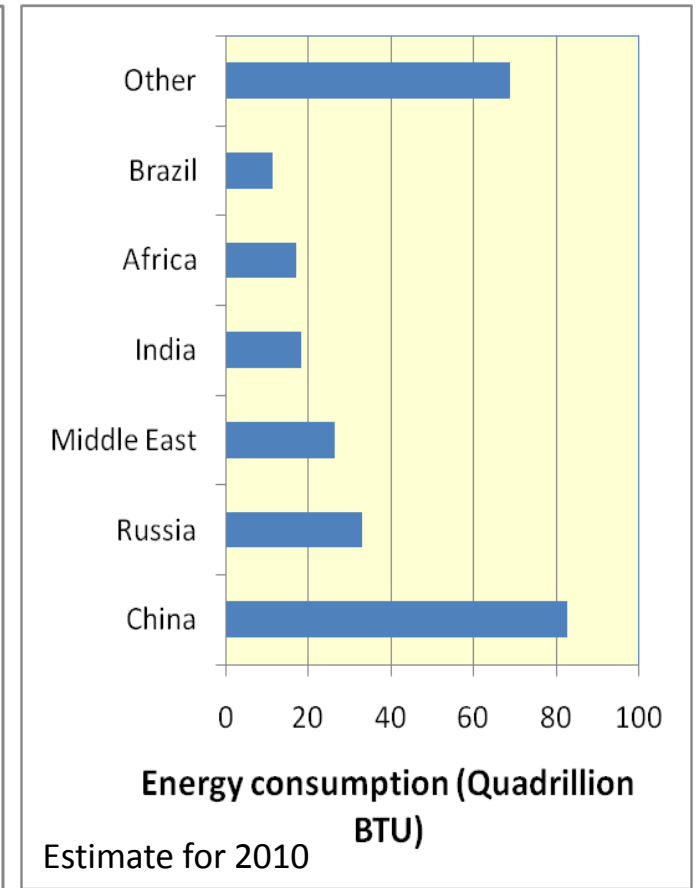
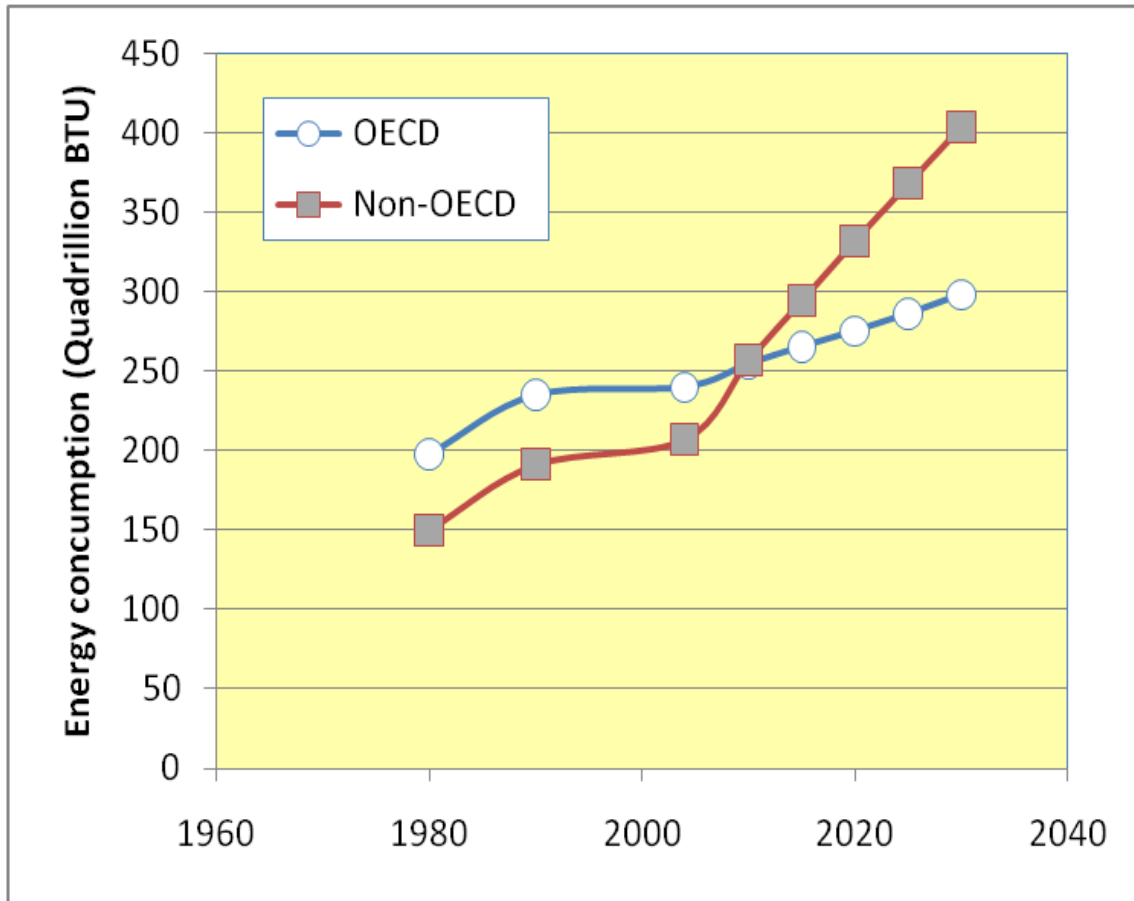
Area available in South & Central America by 2050: 0,25 Gha  
 Area available in Africa by 2050: 0,18 Gha  
 (both according to Doornbosch & Steenblik, OECD, 2007)  
 So. And Central America + Africa: 0,430 Gha  
 10% of 0.43GHa @ 10kL/Ha.yr → 430 GL /yr (in 2005: 40 GL)

	2004	2050
Gasoline consumption <sup>(1)</sup>	1,200 GL	2,200 GL
Ethanol consumption	30 GL	
Ethanol substituting 15% gasoline		400 GL
Ethanol substituting 100% gasoline		2,650 GL

(1) Source: *National Energy Information Center (NEIC)*

Potential for substituting for 10% of the world gasoline demand considering only the available area in South and Central America and Africa

# Energy consumption OECD and Non-OECD



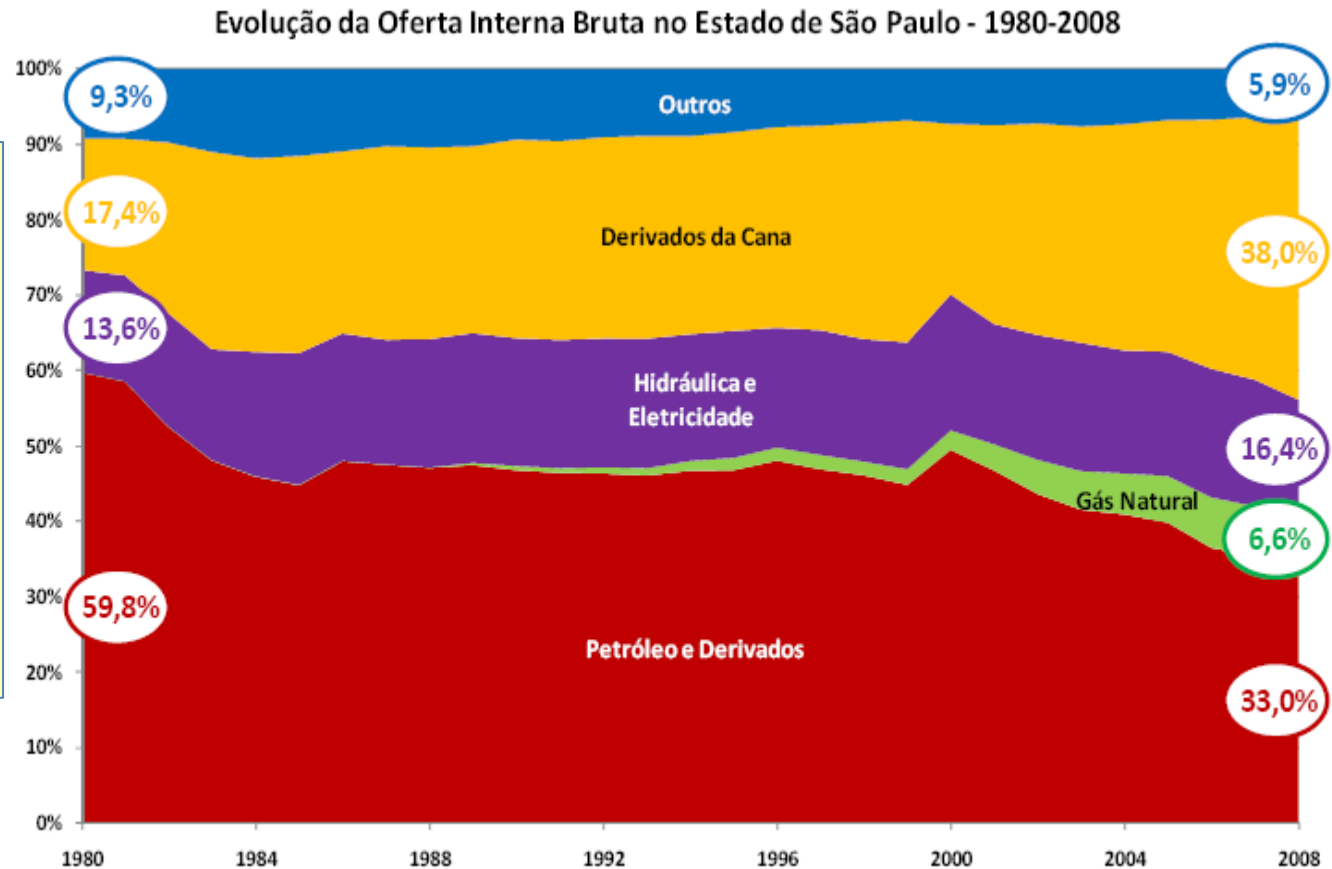
# Energy sources in the State of São Paulo, Brazil

State of São Paulo

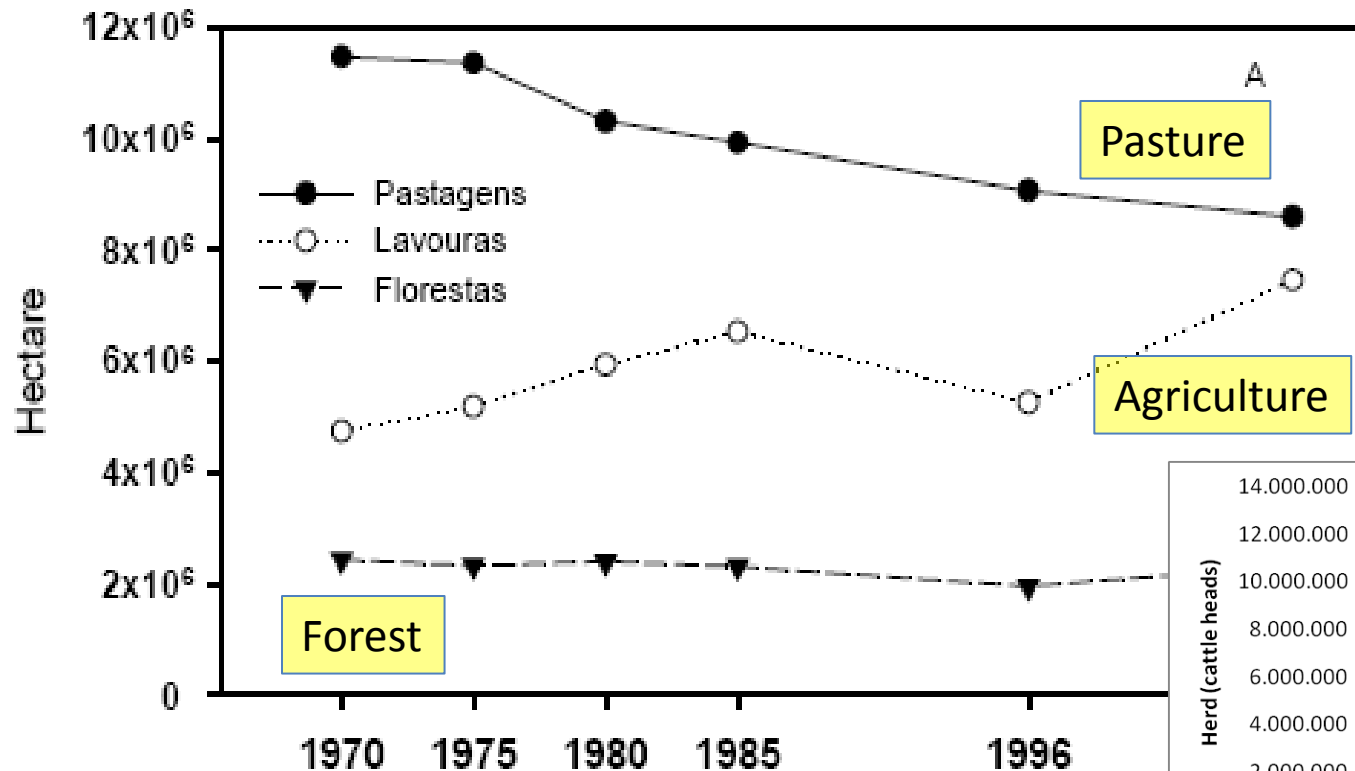
- 41 million people
- 35% of Brazil's GNP

1980 – 2008

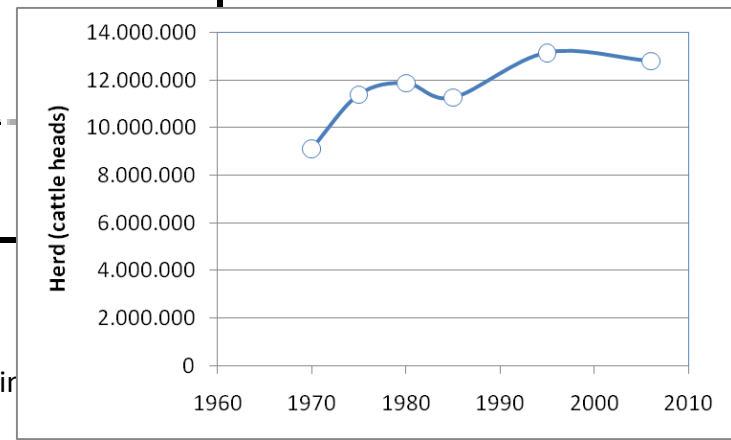
- Oil down from 60% to 33%
- Cane up from 17% to 38%



# São Paulo: Land Use Change, 1970-2006

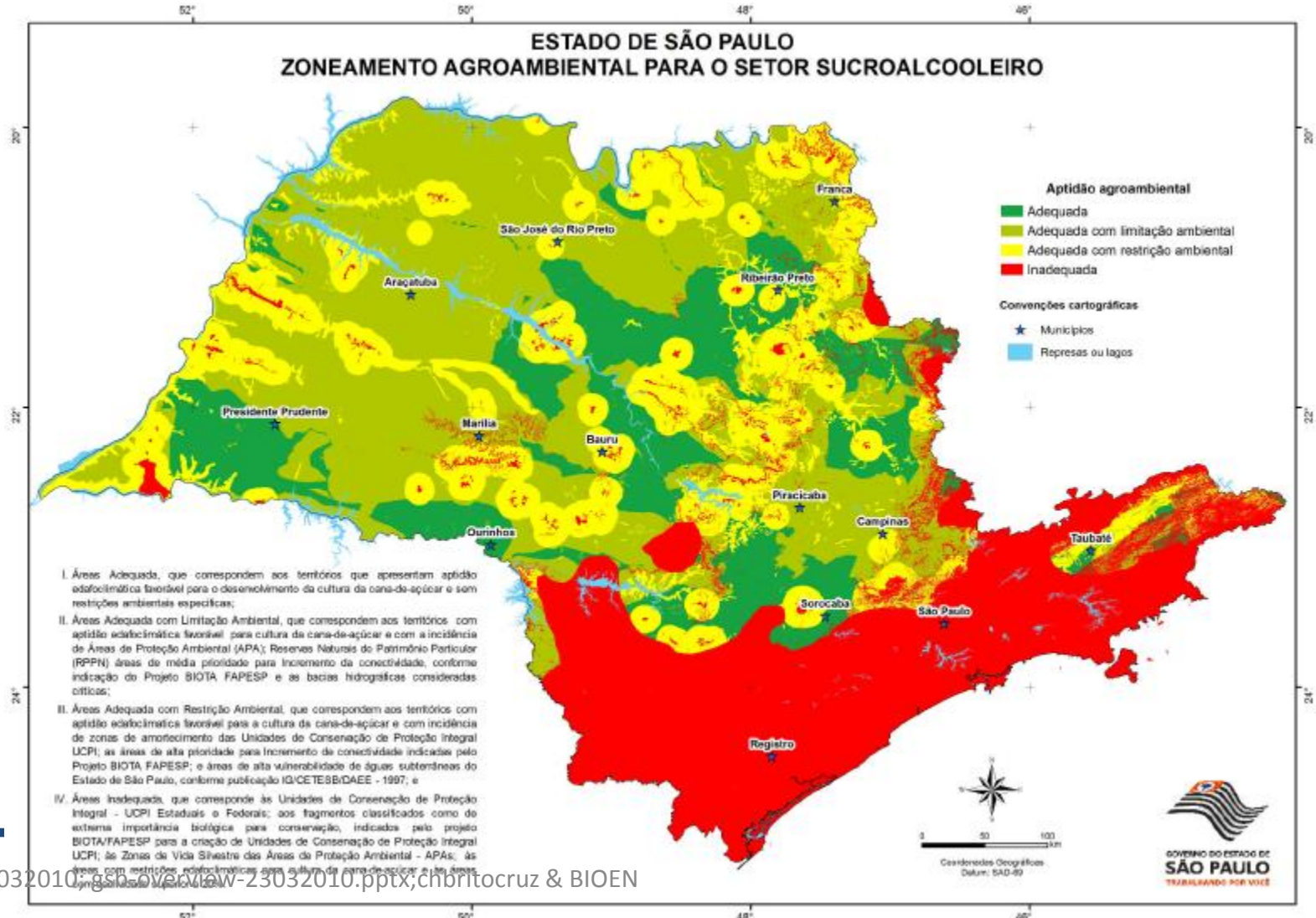


Sugarcane x Pasture:  
fixation of 0,5 Mg C/ha.yr



Source: Boddey, R.M., "GHG Emission Mitigation Through Ethanol from Sugarcane in São Paulo"

# Sugarcane Agroecological Zoning in São Paulo







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# *The plan for the GSB LA three days*

- **Tuesday afternoon 23 March:** Familiarize ourselves with the challenges on bioenergy/biofuels.
  - Goldemberg/Lee Lynd/Nathanael Greene/Cortez.
- **Wednesday morning 24 March** we will:
  - Get an overview of the GSB project and hear from each continent regarding the first stage meetings and unique challenges each experience.
  - Hear about the challenges for bioenergy in Latin America
- **Wednesday afternoon 24 March:** From here on we would like to involve all of you.
  - We plan three breakout groups that will discuss issues and inputs for the Draft Latin American Continental Resolution on Bioenergy.
  - We will elect a team that will start drafting the resolution on behalf of the convention



# *The plan for the GSB LA three days*

- **Thursday morning 25 March:** We will again have breakout groups to discuss Latin American specific recommendations for stages 2 and 3. At the same time the drafting team will work on the Latin American Resolution for Bioenergy.
- Late morning the drafting team will present the draft Latin American Resolution for Bioenergy during a plenary session where it will be open for discussion and refining.
- **Friday afternoon 19 March:** We will break for lunch and after lunch present the draft Latin American Resolution. Finally, Lee, Goldemberg and I will make some concluding remarks and the convention will adjourn.



# *Wednesday: Break-out groups*

## *Continental resolutions - I*

- Discuss continent-specific perspectives on:
  - Needs and aspirations
  - Regional diversity within the continent
  - Constraints
  - Opportunities
  - Bioenergy solutions and opportunities
  - Vision for sustainable bioenergy in Latin America
  - Elect a representative to the resolution drafting team
- Reporters from each team will give feedback to the larger convention and briefly discuss the feedback.



# *Wednesday: Break-out groups*

## *Continental resolutions - II*

- The feedback will be given to the resolution drafting team consisting of one delegate from each working group, assisted by representatives of the GSB steering committee.
  - They will draft the resolution and present it to the larger convention late Thursday morning.
- The resolution will be discussed and a Draft Continental Resolution for Latin America will be adopted



# *Thursday: Break-out groups*

## *Inputs for GSB stages 2 and 3*

- On breakout and plenary sessions Thursday morning we would like to discuss and gather Latin American specific recommendations for stages 2&3
  - will be part of report to larger GSB project for future planning.
- Suggested discussion points in these break-out sessions:
  - What should be done to make the global analysis undertaken in GSB stages 2 and 3 responsive to Latin American needs and realities?
  - Key objectives and approaches for (meta) analysis in future research
  - Identification of key stake-holders and scientific expertise/experts that should be involved
  - Definition of the structure of the project and procedures for **dialoguing** effectively with society and decision makers

