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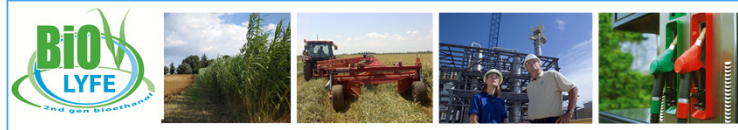


SEVENTH FRAMEWORK  
PROGRAMME

# Second generation bioethanol production

## EU policies and legislation

**BIOLYFE: Demonstrating large-scale bioethanol production  
from lignocellulosic feedstocks**



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search ID: jfa3360

"Six gallons of ethanol, three of it corn, two of it sugar cane  
and the rest cellulosic biomass."

- Various routes to sustainable biofuels – Complexity
- How this is being reflected into policy development?

# Facts:

Lignocellulosic ethanol is  
industrially ready.

Other 2G biofuels routes  
coming soon.



# Why from 1 to 2G Biofuels?

- Higher yield per ha, lower cost per t of feedstock
- No land competition with food (not HVO, unless UCO or marginal land) if areas not economically suitable for food crop production or wastes
- Production: higher CAPEX, but lower OPEX
- Possibility to become competitive without support
- High quality fuels (biodiesel vs HVO/FT-Diesel, etc)
- «Drop in» fuels
  - Higher/No blending walls
  - Not only road transport...also SPK/HEFA for air transport.
- Fully compatible with infrastructure and logistic

*→ These should be key motivations to 2G sustainable biofuels industrial deployment & policy....is it really so? To which extent?*

# GHG

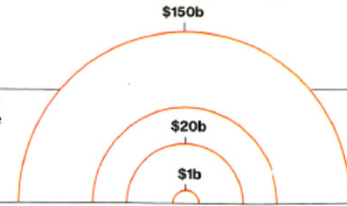
**Bloomberg Businessweek**  
**IT'S GLOBAL WARMING, STUPID**



November 5 — November 11, 2012  
 Bloomberg Businessweek

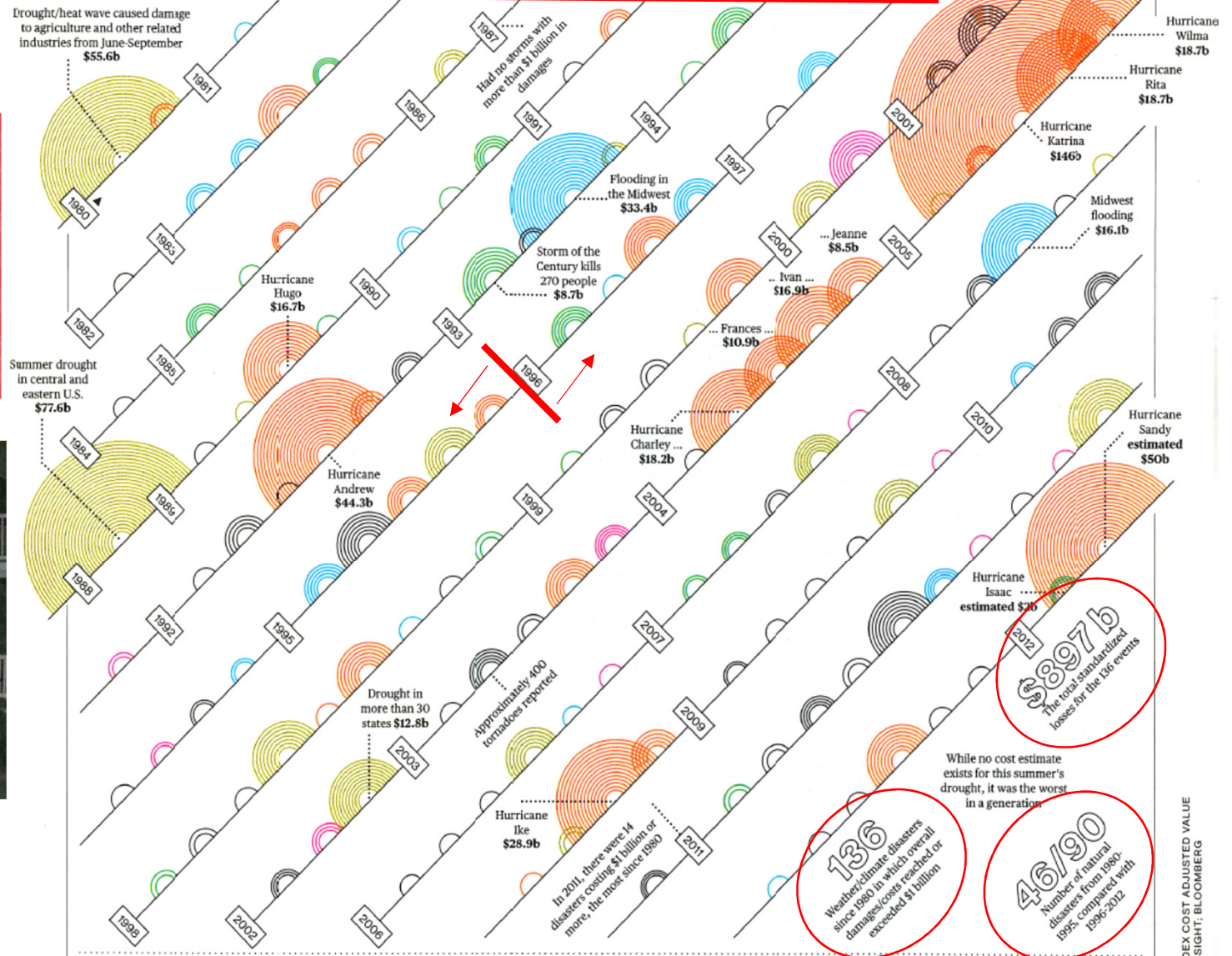
Key

- Blizzard/freeze/ice
- Drought/heat wave
- Fire
- Flood
- Hurricane
- Tornado/storm



## Rising Tide

The number of natural disasters since 1996 costing \$1 billion or more doubled compared with the previous 15-year period. —Jennifer Daniel



# Which are the driving factors today?

- Is it still **GHG** saving only? ...yes and no...
- Other factors entering into discussion on policy development
- **Land use**: direct and indirect (GHG + also large impacts on agriculture, food vs fuel, land protection-abandonment, etc)
  - This is the key point to be elaborated now
- **Socio-economic** impact of Bioenergy/Biofuels (a «chain»!)

# EU vs US, Brasil...

- **EU**

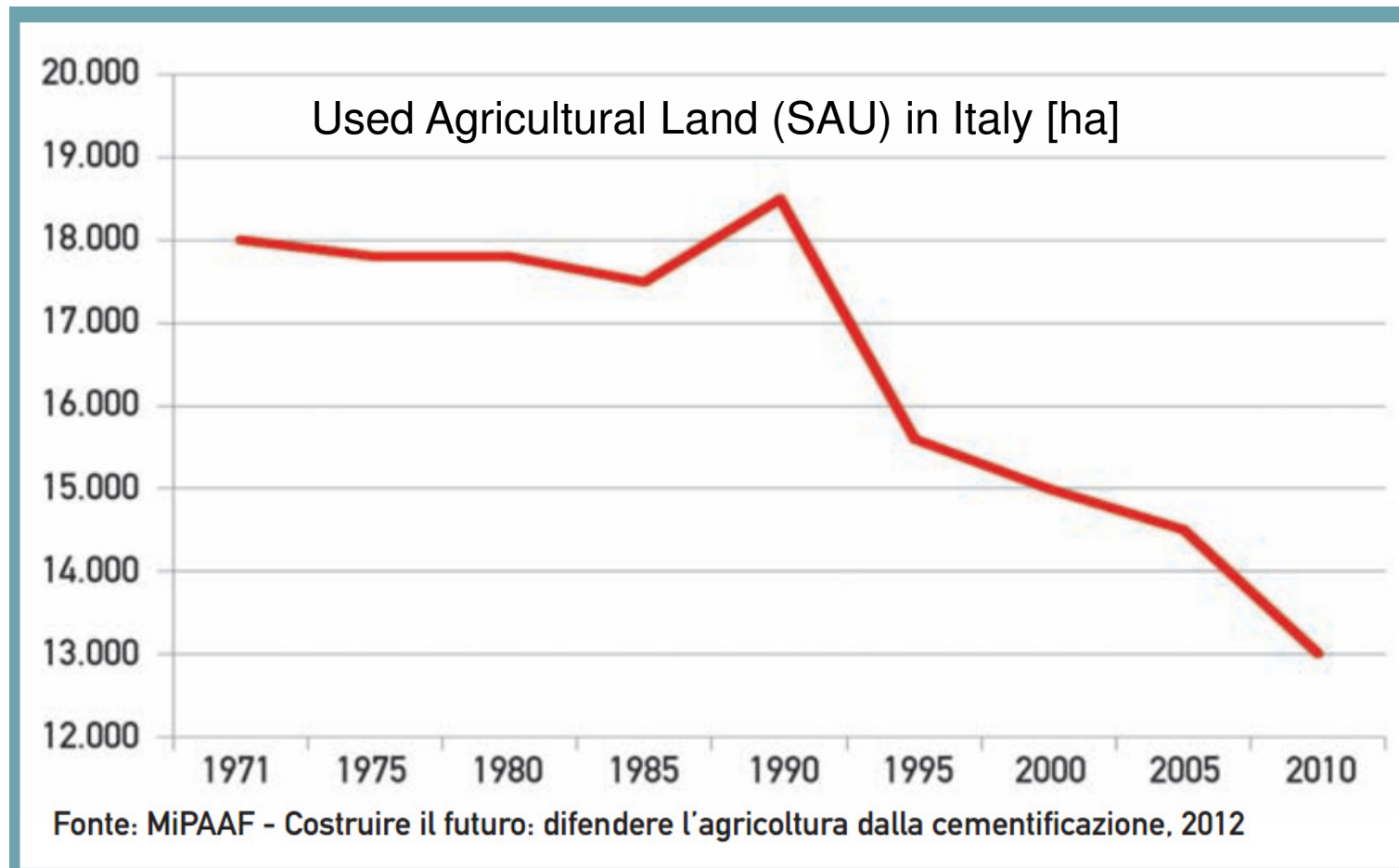
- Focus is still on GHG + food vs fuel (EP)
- No specific consideration for 2G biofues (Council)
- No «real» discussion still in place on
  - Agricultural implications (different situation among various MSs)
  - Economic development opportunities

- **US, BR**

- Sustainable biofuels as a strategic goal
- Socioeconomic development a major driver
- Financing measures accompanying this target



*...not all MSs are equal...*  
**Agricultural land use in Italy**







# Commission, EP, Council...

- Main steps
    - Proposal from EC (Oct 2012)
    - EP position (Sept 2013)
    - Council position (expected Dec 2013)
  - Fundamental differences, wide debate
    - Cap 1G, waste vs energy crops, advanced biofuels mandates, single/double counting, cascade use of wastes
- Stall to investments
- Major projects occurring elsewhere/abroad



# Conclusions

- Lignocellulosic Ethanol is ready, other Adv Biofuels coming + industrial Biorefining
- Policy framework is not yet following the R&D and industrial development achieved so far
- Other key issues (+GHG) not yet fully addressed
- Timing is important → EU is slow in deciding
- Investments and industrial development moving outside EU – more practical/applicable systems
- 2020 important, but medium term vision to 2030 even more relevant at the current stage

**Thanks for your attention**

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