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Latest results and emerging issues on ocean acidification

Based on information provided by J-P Gattuso and L. Hansson-EPOCA Project



*UNFCCC side event, COP 16
Cancun, 2 December 2010*

Dr. Elisabeth Lipiatou
Head of Unit
Climate Change and Environmental Risks
DG Research, European Commission





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EPOCA- Fast facts

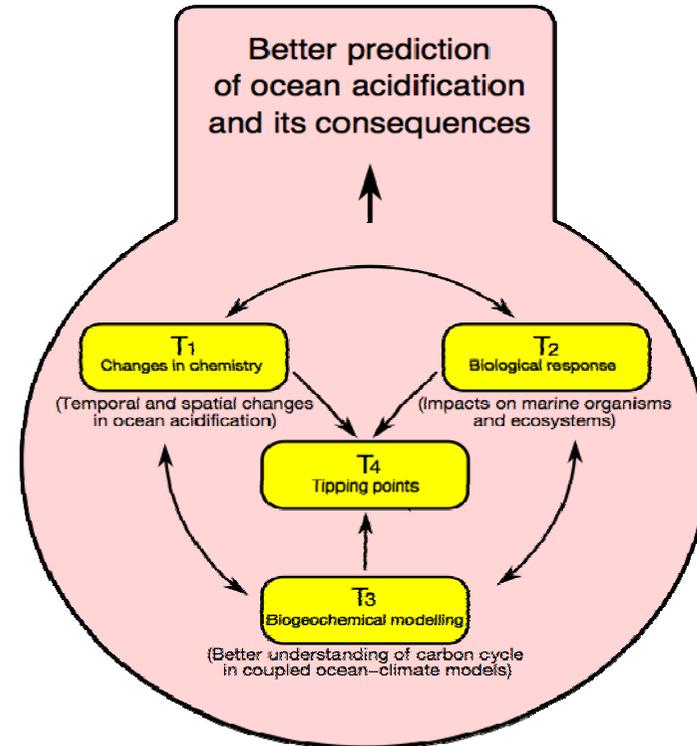
- A large-scale integrating project of the European Union which investigates ocean acidification and its consequences
- 100+ scientists from 31 laboratories and 10 countries
- Total budget of 16 M€, including 6.5 M€ from the EU (2008-2012)





What is EPOCA about?

- **Theme 1:** Improve the understanding of the **past and present changes** of ocean acidification
- **Theme 2:** Determine the impacts of ocean acidification on **marine biota**
- **Theme 3:** Improve understanding of **future changes in ocean chemistry** and biogeochemical feedbacks
- **Theme 4:** Synthesize information on **tipping points**; outreach; link with **end-users and policy makers** (RUG)



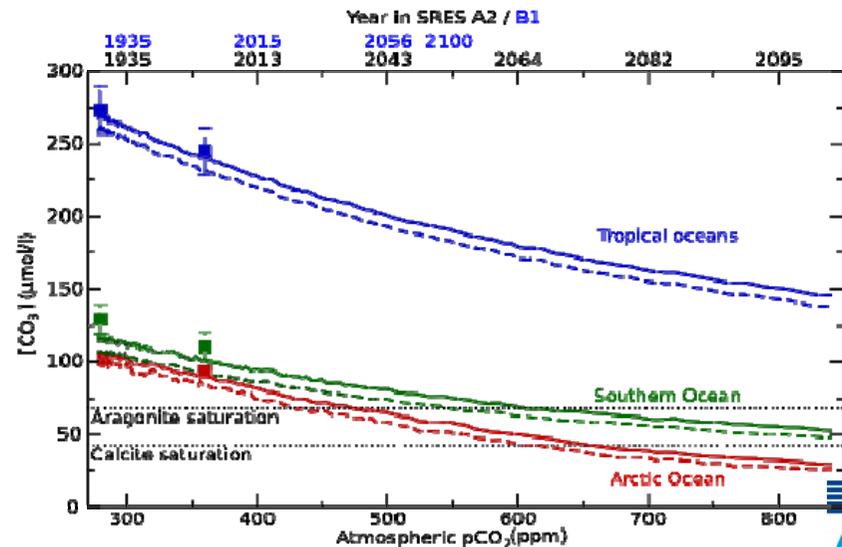
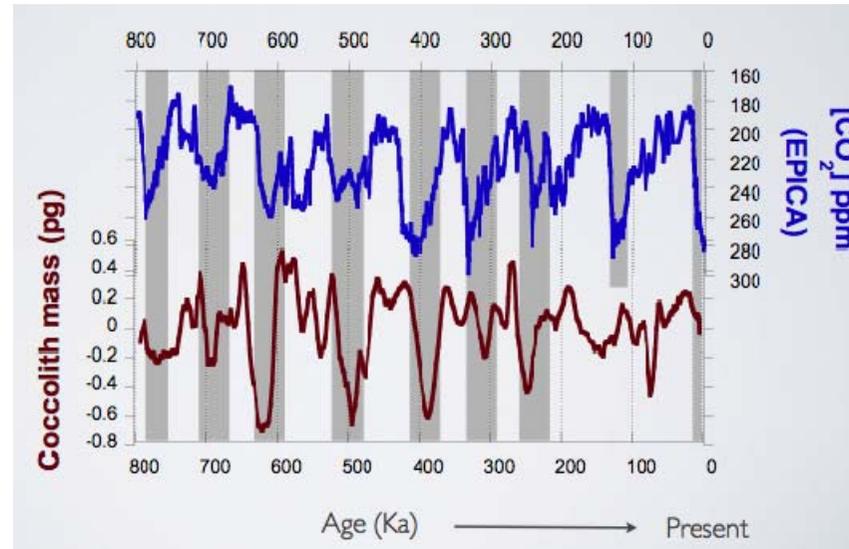


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EPOCA key findings (1/2)

- In geological record, [heavier coccoliths at lower pCO₂](#)
- [Iceland Sea pH decline 1.5 times](#) that in temperate Atlantic
- 10% of surface Arctic corrosive to aragonite within 10 years
- [Some coastal upwelling systems appear as vulnerable as polar regions](#)
- [Ocean perturbed for century, by CO₂ emitted in the next decades](#)



SEVENTH FRAMEWORK
PROGRAMME



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EPOCA key findings (2/2)

- Negative effects (1st time):
 - key marine molluscs (*pteropods*)
 - deep-sea corals (1 study)
- Combined effects of T & CO₂ on cold-water spider crab
- Alterations
 - community composition (*bacteria & archaea*)
 - respiration rate (*mesopelagic prokaryotes*)
- 1st Arctic perturbation experiments (Svalbard 2009 & 2010)



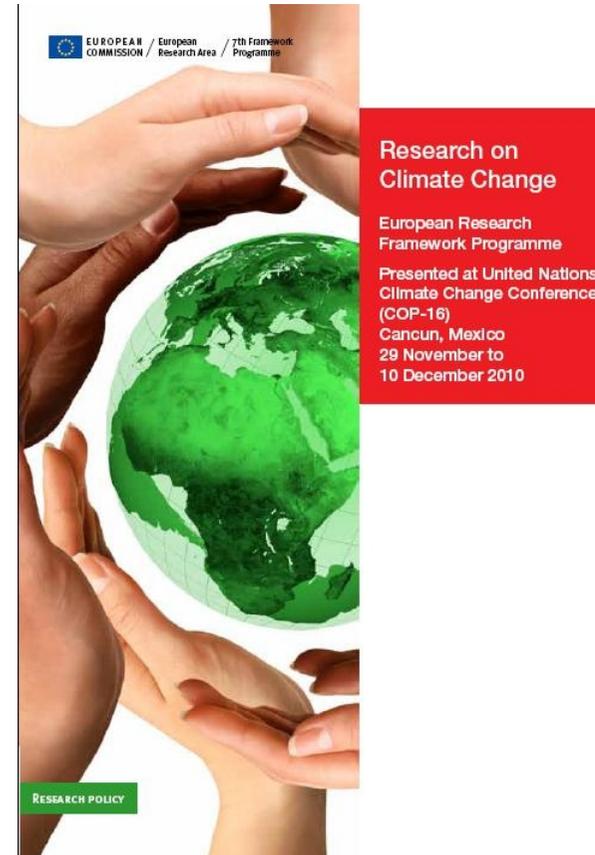
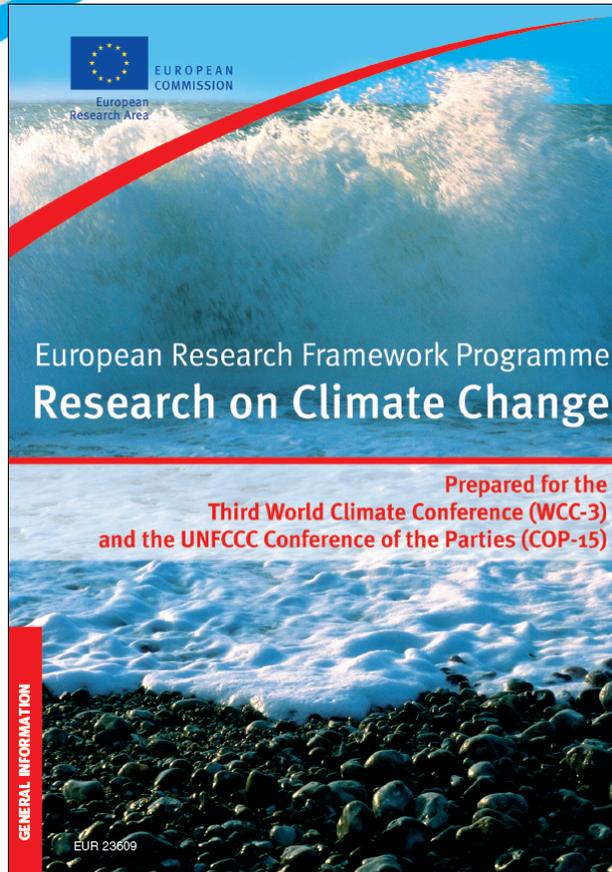
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<http://ec.europa.eu/research/environment/pdf/cop-16.pdf>



<http://ec.europa.eu/research/environment/pdf/cop-15.pdf>

Thank you for your attention

Contact: Elisabeth.Lipiatou@ec.europa.eu

Anastasios.Kentarchos@ec.europa.eu

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