

# Supporting IPCC Reports

# Summary and Tools for teachers

*The Office for Climate Education (2018)*

Pierre Léna

Université de Paris & Observatoire de Paris PSL

An OCE Climate Education Event at COP25 - IPCC Pavilion - Dec 10, 2019



Paris, COP21, 2015

# COP 25 Madrid

*“People must understand the basics of climate science  
...science must be a common language”*

Patricia Espinosa, UN Climate Secretary , Dec 6, 2019

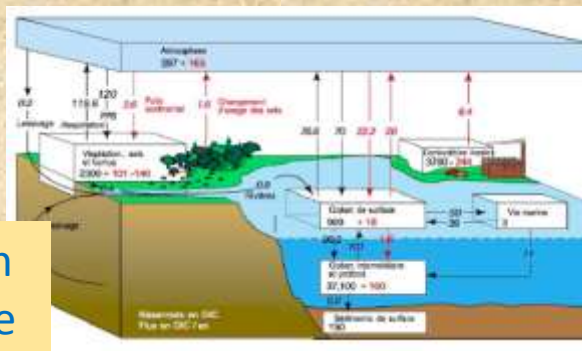
## Article 12 – PARIS AGREEMENT

*Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognizing the importance of these steps with respect to enhancing actions under this Agreement.*



### Marrakech, COP22

Education & Competencies  
Valérie Masson-Delmotte



A systemic vision  
based on science





The youth, all over the world  
Emotion, fight, anxiety , rationality ...

Excess? Sixth extinction... Death of the planet...  
End of the civilisation... Collapse of humanity...

# A PRECISE MESSAGE FROM THE YOUTH

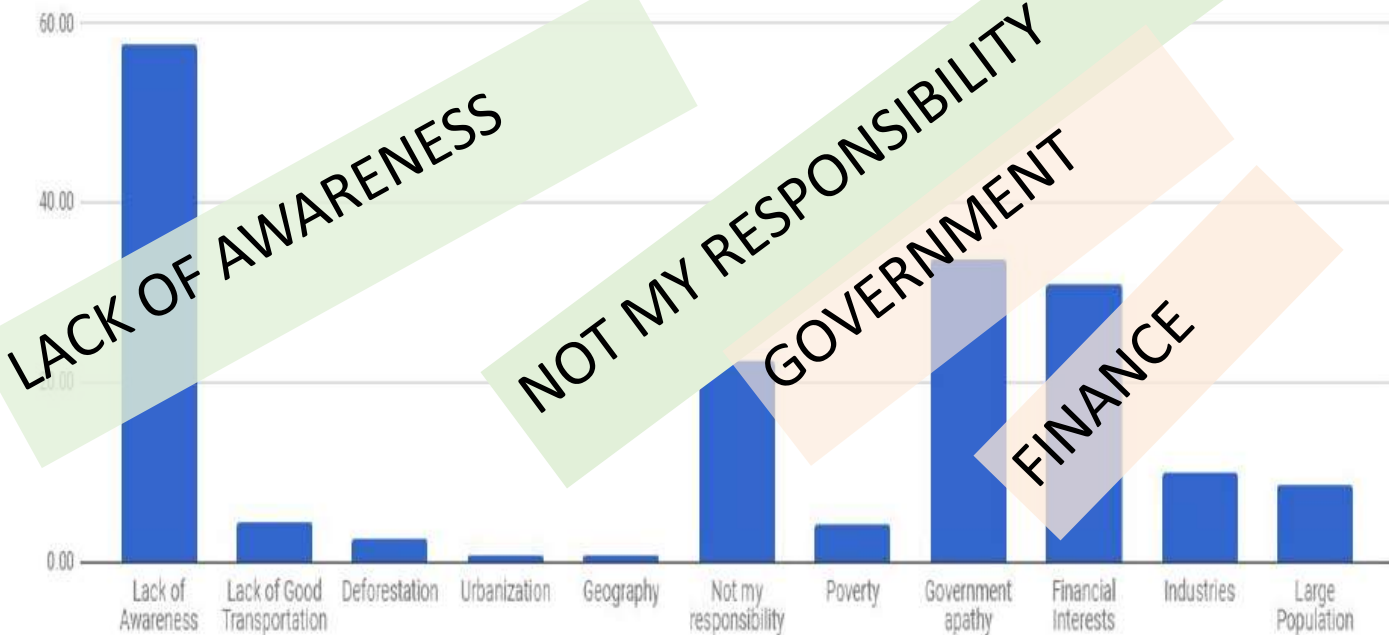
International Youth  
White Paper on  
Climate Change  
2018  
EDUCATION AND CITIES IPCC 2018

*... our schools prepare us to be  
they do not teach us how to ad*

*This must be taught across eac  
assist students in developing th  
more **in-depth solutions**.*

*However, we must acknowledg  
economic and social barriers fa  
involving students, communitie  
solutions to diminish the obsta*

III. The biggest barriers to addressing climate change are:



\* NOTE: Comments within the category, "financial interests," most frequently reference the dominance of corporate interests over climate issues in government policy.

*however,*

*that will  
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# Which messengers does the youth trust ?



Among the general population, **SCIENTISTS** continue to be perceived as highly trusted messengers on climate change.

Among young people and besides youth-driven communications, **TEACHERS** rank highly in messengers successfully facilitating climate awareness.



Corner et al. (2015),  
“How do young people engage with climate change?”

*Wiley Interdisciplinary Reviews*, 6, 523-544

A Review of international studies, mostly in Europe, US and Australia

1995 - 2019

## Projects in Inquiry Based Science Education (IBSE)



Bruce ALBERTS



Mario MOLINA  
Nobel 1995



Georges CHARPAK  
Nobel 1986



LEE Yuan Tseh  
Nobel 1986



WEI Yu



## Inquiry Pedagogy

primary & secondary school

← **Trained Teachers**

**Active Students** →





# The inquiry process Curiosity & Science in action



1. Questioning



2. Hypothesis



3. Experiments & Observations



4. Communication and conclusions



# Climate Education

Four goals to prepare the Youth for its future

Primary, Secondary, University

*Building 'a critical mind and an hopeful heart'*

1. Understanding Earth & Climate as a **complex system**
2. Trusting Science results
3. Becoming a creative actor of the climatic transition : solutions
4. Developing empathy & solidarity

Veer Ramanathan, UC San Diego  
Climatologist





# Teachers are key actors, but....

- ..Unprepared to master the knowledge
- ..**'Silo'** knowledge of scientific disciplines
- ...Lack of **systemic** thought : science + social sciences
- ...**Ethical** & political issues are sensitive



IPCC

InterAcademy Partnership (IAP)  
Recommendation of Science Academies  
2017

Assessment Reports

Special Reports

1.5°C, Land Use, Ocean & Cryosphere

Summary for Teachers

Resources and Tools for Teachers

Summary for Policy Makers

Creation of OCE 2018





David WILGENBUS  
OCE Executive Director

### Enabling Teachers in Secondary & Primary Schools

Giving students *a critical mind and an hopeful heart*  
= helping students to understand and to act

Fostering & Contributing  
to **Regional Events**,  
in order to help implementing  
**Climate Change Education**

[www.oce.global](http://www.oce.global)

2018 - 2023

## The OFFICE FOR CLIMATE EDUCATION

An Executive Secretariat in Paris  
A Global Network for Climate Education Worldwide



Disseminating **Resources & Tools** for teachers  
Multilingual, Free access, **Inquiry** based  
**In phase with IPCC Reports**



# Education Challenges

## Understanding the complexity of the climate system

*Integrating knowledge in astronomy, physics, chemistry, geology, biology, demography, agriculture, industry, transports*

- Earth system and **interdependencies** ; *Sistema Tierra y interdependencias*
- **Multifactorial** causes; *Causas multifactoriales*
- Span of **scales** in space and time for effects ; *Escalas de tiempo y espacio*
- **Orders of magnitude**; *Magnitudes*
- **Feedbacks** (positive & negative) ; *Retroalimentación*
- Instabilities, catastrophies, phase transitions ; *Inestabilidades*
- Analysis of **risks** (human, biodiversity) ; *Análisis de riesgos*
- **Modélisation**, projections and probabilities. *Modelado y probabilidad*



# OCE Executive Secretariat, Paris

*6 full time persons*

*PhDs, Educators*

Curricula

Syllabus

UNESCO

Category 2 Center

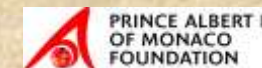
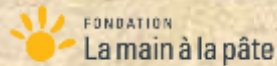
Launch 2020

## International Network

- *Latin America*
- *Europe*
- *Africa*
- *South-East Asia*

## Climate Scientists Partners

- *IPSL in France*
- *PIK in Germany*
- *Local Climate scientists*



## Training workshops

10 national or regional events

430 teachers and teacher trainers  
involved

1340 man-days of trained persons

## From 20 countries

Africa : Algeria, Benin, Cameroun,  
Morocco, South Africa, Tunisia

Southeast Asia: Cambodia, Fiji,  
Indonesia, Lao, Malaysia, Myanmar,  
Philippines, Seychelles, Thailand,  
Timor Leste

Europe: France, Italy

Pacific: New Caledonia, New  
Zealand

## Summaries and Tools for Teachers

[www.oce.global](http://www.oce.global)

