



## **Communicating climate change: alerting versus stimulating action, a few "philosophical" interrogations from a marine biogeochemist**

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I'm a marine biogeochemist, working on diatoms and their role in the oceanic biological pump and climate. Since a few years, I'm placing a lot of time and energy in communicating science about climate change because I feel that, in addition to the remarkable work performed by the IPCC which has major implications on the political agenda, we also need to talk to each citizen to stimulate action towards mitigation. While doing so, many questions arise and I think it is very important that we share our experiences, so that each of us can continue the best he can. First, I try to experience different forms of communication. Science cafés, conferences, seminars with a group of adults to explore scientific controversies (e.g. carbon compensation, biofuels...), work with teachers to bring climate change in classes. My objectives are double: convey the most recent scientific information on climate change and stimulate action. And here arises the first question: what is the frontier between outreach and a more "political" engagement? Is there any difference between working with professionals towards integrated coastal zone management, and talking to citizens, which is an important scale, when addressing climate change?

During these interventions, I have realized the need to communicate about "numbers". Global numbers, in terms of gigatons emitted by human activities. But also individual numbers, to address questions such as: how important are personal emissions compared to the industry for example? And what about my own emissions? Compared to those of my neighbour... The mean individual emissions in France compared to England or Germany. In Europe compared to the US or Africa... And if I want to do something, should I act on my transport, the energy I use at home, my food? In fact, do I even know there is CO<sub>2</sub> in my plate? To help answering some of these questions, I have developed a calculator of personal CO<sub>2</sub> emissions, that I use in a "conference-workshop" where people can come to calculate their own emissions and then, replace them in a more global context. During the debates then, very rapidly, politics and ethics come into play. Beyond the question raised above concerning outreach versus engagement, I find it VERY DIFFICULT to find the right balance between alerting and stimulating action. On one hand, we need to alert on the reality of the numbers given (and it is hard to reduce our personal emissions by a factor of 4 in France or 10 in the US), the ethical problems they raise (we, in developed countries, are responsible for the majority of past CO<sub>2</sub> emissions and we should do the major effort, Ragueneau et al., 2008). And on the other hand, we need to remain optimistic and show that solutions do exist, if we do not want to discourage people to act.

There is debate between the ethics of fear (H. Jonas) and the ethics of hope (E. Morin) as best ways to stimulate action and I feel we need to share our experiences on how best navigate between these two lines. So I would be very happy to participate in such a session to discuss the role of scientists in essential issues such as societal debates related to climate change, the frontier between outreach and political engagement, and the attitude needed to convince that there is a problem, that this problem is big and we need to stress it, but that it can be addressed with very positive implications for each of us.