

## On sustainability ... A grain of humility

### To the editor:

As scientists, we are trained to address the vital challenges of mankind. We believe that we will advance the well-being of people by providing available resources, warmth, communication, and mobility, and for this reason we chose this profession.

Some of us work on application-oriented problems to provide answers to societal needs, or at least needs society is convinced it needs. Other scientists solve basic scientific challenges, either for the thrill of challenging discovery or to lay the groundwork for new approaches to solving application-related questions.

Therefore, it seems natural that we consider ourselves vital in solving mankind's quest for ever-lasting sustainability.

### Two worries come to mind.

1. We may have read the "Limits of growth," published 50 years ago by D. H. Meadows et. al.<sup>1</sup> We also may have read the last report of the International Panel on Climate Change.<sup>2</sup> Why, then, if scientists are educated about the limits of our planet's resources and the futile combat to keep the problem at bay, do we still expect ourselves to be the true heroes?
2. If our politicians are correct that we need at least 2% of economic growth (in China, the number was said to be 9%) to keep going, then we are certainly worried about our laws of thermodynamics and about our simple mathematical understanding that an exponential function is prone to hit a ceiling in a confined sample. Right?

The answer to these worries is rather simple: Scientists will not provide the solution to an unsolvable, ill-posed problem. In traveling from international conference to international conference, meeting in new fancy hotels, we may have an enormous carbon footprint and may be a part of the problem ourselves.

So, what to do?

Science is not the complete answer to the world's most pressing quest for eternal sustainability. It is, however, a key junction to connect economic models to reality and can provide a reality check for the latter.

If we had guts, we would confess to a grain of humility and would say we can assist to reduce the imbalance between resources and mankind's abuse of resources, but the problem is a socio-political one in the end. As Mahatma Gandhi put it in 1992, "The world has enough for everyone's needs, but not everyone's greed."

More so, if we would accept that every nation and every human being is entitled to the same energy consumption and same mineral resources, we would realize all that's required is *a grain of humility and a generous share of empathy*.

This knowledge may not increase our research dollars; possibly we should even reduce our own carbon footprint to retain some credibility.

Does that sound rough and awfully inconvenient?

Yes, but as researchers we are still needed on two fronts.

1. Apply our understanding and application-oriented research to power toward sustainability.
2. Persevere on basic research as, in the end, true innovations may stem from goal-oriented basic science where—with an open eye—we discuss new phenomena desperately needed for lasting sustainability.

But we also have responsibility as educated citizens, communicators, and teachers. Specifically,

1. Discuss the biggest challenge of this planet in your colleague's circles, in your community, and with other groups, and pledge to limit your carbon footprint by reducing your mobility, heating/cooling, consumption, etc. For example, forfeiting

an international return flight from Los Angeles to London reduces carbon footprint by 2.9 tonnes, the equivalent of more than the carbon footprint of an Indian or Brazilian citizen per year.

2. Get vital interest groups into the discussion. For example, why are high-school students forming powerful interest groups while undergraduate and postgraduate students are only slain with our demands to study lecture notes? Why are they not standing up as they did some decades ago?

In the end, the path is blatantly clear: Scientists need to move society onto a straight—but rocky and long—path to sustainability. The alternative is a path that is convenient only for a short distance and leads to the wide-spread disaster you may read about in other documents.

Beyond the simple suggestions, here are some recommendations.

- Read the three references provided.
- Embrace "A grain of humility and a generous share of empathy."
- "Come on!"<sup>3</sup>

Sincerely,  
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### References

<sup>1</sup>Donella H. Meadows, Dennis L. Meadows, Jorgen Randers and William W. Behrens III, "The limits to growth," Potomac Associates (1972)

<sup>2</sup>Intergovernmental Panel on Climate Change, "Climate change 2022—Impacts, adaptation, and vulnerability," IPCC website [www.ipcc.ch](http://www.ipcc.ch)

<sup>3</sup>Ernst Ulrich von Weizsäcker, Anders Wijkman, "Come on! Capitalism, short-termism, population, and the destruction of the planet," Springer, New York (2018) ■