

# The value of science for critical decisions

March 26 2020, by Prof. Reto Knutti

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Credit: AI-generated image ([disclaimer](#))

In times of crises, people suddenly come together in solidarity and support each other. Political parties unite behind the Federal Council and the government, who decided, within the space of just a few days, to implement drastic measures to protect the nation. This was the right decision. Nonetheless, coronavirus is hitting us hard.

In isolation, there is time to reflect. Why do we act decisively in a

pandemic, but in other contexts, we don't? To be clear, my expertise is not medicine and I can't provide guidance on the epidemic. But the crisis we now face has nonetheless astonishing parallels to [environmental problems](#): [climate change](#) and sustainability.

## **Shared patterns**

First, these threats are global and invisible, which makes them difficult to grasp. The danger seems small at first, and does not affect us personally. We find it difficult to react to predictions of things we cannot relate to our own experiences. We mostly learn through our own experience, less so from numbers or newspapers.

Second, both the health of our society and an intact environment are [public goods](#), which need binding regulations to be protected. Technology and individual responsibility alone won't solve these problems. Opportunists will appear, ignore recommendations and put short-term individual benefit above the common well-being. The weakest among us often feel the impact first and most in a crisis. Solidarity with the vulnerable is essential.

Third, it pays to address these threats with early and decisive action. The short-term costs are higher, but in the long-term, nearly everyone benefits. "Wait and see" inevitably and rapidly limits the scope for action. Finally, in both crises—coronavirus and climate change—experts have long pointed out the consequences, but were only listened to much later.

## **Action only when time runs out?**

But there are differences, too. Now we are seeing governments, in a matter of days, abruptly moving to emergency operation and shutting

down public life and the economy—dramatically, and with surprising compliance—despite the enormous cost. This is only possible because the situation, in our country and throughout the world, is rapidly deteriorating. Danger is imminent. There is no time to debate, lobby or sow doubt.

In contrast, the environment and the climate have a longer time horizon. Problems appear less acute, and developing countries will feel the impacts first. The threats feel distant.

## **What science can do**

Meanwhile, the pandemic mercilessly demonstrates that ignoring or trivialising facts can be deadly. There is much to indicate that, despite warnings from experts, we underestimated the situation. Even powerful voices in the *Neue Zürcher Zeitung*, a newspaper known for its autonomy and liberalism, feel the government has acted too late.

This is not an accusation—rather, it's an insight. Decision-making in situations that involve high uncertainty and high risks is always hard. For both climate and coronavirus, authorities and politicians have to weigh the risks, costs, benefits and common sense. Experts aren't trying to preempt this; even science doesn't have all the answers, and cannot prescribe what to do.

Physics (in the case of the climate) and epidemiology (in the case of coronavirus) can, however, provide a factual basis for decision-making. It can show what is likely to work in various scenarios, and what definitely won't work. But for that, scientists must be consulted, and the appropriate committees and channels must be established. Only those who understand the key relationships and vulnerabilities in advance, and who in critical situations can rapidly assess a [threat](#) and correctly weigh crucial information will succeed in the long term.

## Evidence-based action

We were poorly prepared for this pandemic and reacted too hesitantly, despite warnings from experts. Nonetheless, the response to the coronavirus strikingly shows how as a society we are capable of reacting to a threat collectively, in a coordinated way and in a spirit of solidarity. And that's encouraging. Coronavirus won't be the last crisis. From this, we can learn to take [global threats](#) seriously and to act proactively on the basis of scientific facts.

### **More information:** (in German)

1 NZZ Meinung (16.03.2020): Zu spät, zu zögerlich

2 Sonntagszeitung (15.03.2020): Die fünf Phasen der Verharmlosung

3 SRF (20.03.2020): Versäumnisse bei der Vorsorge

4 Tagesanzeiger (13.03.2020): Wir brauchen sofort drastische Massnahmen

Provided by ETH Zurich

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