

Thinking ahead – risk prevention instead of risk mitigation

Pollinators are in decline globally, unfortunately this becomes more and more evident. Until now, we approach this alarming fact with risk mitigation. For instance, habitat loss is one of the drivers for pollinator decline. Homogeneous agricultural landscape does not offer much for pollinators. Only few species profit from mass-flowering crops and there are not enough structures for nesting to build up stable populations. To help pollinators out, agri-environment schemes try to counteract this by flowering strips and other measures to restore the habitat. It has been shown in several studies that these measures can help. Though, there is not much data about the efficacy of single measures or how much they are generally valid. I have already [discussed](#) the need of evaluating these measures carefully. Some flowers or some trap-nests do not save pollinators, unfortunately the problem is much more complex.

Multiple drivers are responsible for pollinator decline: besides habitat loss and fragmentation, there are pests and parasites, climate changes, pesticide use or invasive species. We can address these current threats only by counteracting them. The cures may not be always the best, but many work on this and try to improve the situation. A recent [paper](#) from international experts, though, shows another approach. There may be future risks to come; instead of waiting that they arrive would it not be better to recognize them beforehand and prevent them?

To prevent is better than to cure

This paper is one of those which keep me thinking for a while, it is very stimulating because of this different way of addressing the issue of pollinator decline. In fact, as humans we are proud of our capacity of thinking ahead and planning. So why not apply this also for pollinators? A group of 17 international experts therefore discussed a long list of different issues that could impact pollinators in the future and finally identified six high priority issues:

1. corporate control of global agriculture,
2. next generation systemic pesticides,
3. novel RNA viruses
4. new managed pollinator species
5. more frequent heat waves and droughts
6. potential positive impact of reduced pesticide use in non-agricultural contexts.

There were also nine secondary priority issues which named things like changed disease epidemiology by climate change or invasive species in Asia. It would go too far to discuss all of these subjects in this post. But the very first one impressed me: corporate control of global agriculture. This is really thinking big; if I imagine all the different crop systems and traditions all over the world this is a very hard task. Which is no argument against: if we never name and begin with the big projects we never get anywhere. This issue addresses more than pollinator declines and biodiversity loss, it has a social and political dimension.

Vast areas are dominated by big agri-food industries which promote homogeneous production systems. Which means big monocultures with no (or little) pollinator habitat and an unadapted pesticide regime. The impact of these homogeneous production systems is worst in the southern hemisphere. In these regions, we also know so much less about the pollination systems. On the other hand, more people depend on agriculture and on pollination services. The authors state:

From an opportunity perspective, large-scale control over agricultural practices could, under appropriate management practices, enable sustainable pollinator management to optimize pollination with respect to consumer demands.

Oh, yes, please. Let's think big. There is much work to do and it surely will not be easy to get there, but it is so worth it.

Are risk mitigation measures obsolete?

I am still sorting this publication in my head, but a point that may be discussed is if prevention measures could substitute risk mitigation. I do not think so, we cannot predict everything. We are also not free of a certain bias in our judgements: what interests us or the things we know most about can seem most important. No one is absolutely objective, we have to be aware of this. Personally, for instance, I wondered why the invasive species issue was limited to Asia. But I did not perform an accurate analysis as the colleagues did, maybe the threats in Asia are especially big. In addition to the more frequent droughts, there may be also more frequent floods which affect ground nesting species. So wouldn't it be better to speak of "more frequent extreme weather events" that affect pollinators?

There is already much damage done. In these cases we cannot do other than trying to counteract the development in order to stop and perhaps reverse it. There are already some positive trends in some places where this happened. Though, of course, the original, undisturbed situation is lost. Risk prevention and risk mitigation must go hand in hand. With both concepts together we may be able to really change something.