

# Adapting to climate change or being proactive in reducing its onset?

Dr David Bek is a Reader in Sustainable Economies at Coventry University (UK) and works very closely with horticultural entrepreneurs, whom he says, should not miss the scope of mounting risks from climate change. He says the industry needs to cut emissions to reach the UN's 1.5-degree pathway rather than work out how to live with it. "There has to be an awareness that the policy environment could shift markedly against 'non-essential' items with a high carbon footprint."



**B**ek's official job title is Co-Lead of the Sustainable Production and Consumption research cluster within Coventry University's Centre for Business in Society (CBiS). This cluster focuses on the ultimate goals of living within environmental limits and the attainment of social justice, through the delivery of responsible business and ethical consumption practices. He, and his colleague Dr Jill Timms run the 'Sustainable cut-flowers project' which works very closely with industry stakeholders to identify and deliver initiatives that will ensure the industry's footprints are more sustainable. His team collaborates with organisations such as the Fairtrade Foundation to increase awareness of ethically sourced flowers.

#### THE CLIMATE CRISIS HAS MANY DIMENSIONS

The most recent period in Earth's history, when the humans' activity started to have a significant impact on the planet's climate and ecosystems, has set the planet on course for a 1.5 degrees Celsius rise in temperature.

The 1.5°C of warming is a given, Bek stresses and will occur a decade earlier (2040) than previously projected by the Intergovernmental Panel on Climate Change IPCC (the UN body for assessing the science related to climate change, founded in 1988).

"Most scientists agree climate change is a crisis. And there are many dimensions to this crisis in terms of soil, water, and air. The temperature reading of 1.5°C warming might conjure up long hot enjoyable summers in Western Europe but the reality of the impact upon the systems that drive the weather is so problematic. Ultimately, climate change will totally alter the dynamics of weather systems with shifts in jet streams. Subsequently, different types of weather systems will start occurring in other places and in a much more intense form, causing all kinds of chaos."

#### THE GOOD NEWS BEYOND THE SEVEN PLAGUES

There are many challenges we need to grapple with, such as floods, droughts, changes in crop viability and emerging of new pests and diseases, and soil depletion. At times, it feels like the horticulture world is suffering the seven plagues. But Bek is happy also to share some good news, saying, "Technological advances are remarkable in the horticultural arena. The rate of technology change is unprecedented and as we have seen with the development of Covid-19 vaccines when the pressure is on, it is extraordinary what can be developed. So, in horticulture we are seeing many improvements in water usage systems, nutrient development, growing media, pest and disease control, and energy systems. And within all these developments there is a definite trend towards more sustainable options which will enable production to continue and which will reduce risk for producers. It is important that an enabling environment is created to facilitate the development and rollout of more sustainable technologies. Research

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and development is essential and support with innovation processes and costs is critical."

#### MULTI-DISCIPLINARY RESEARCH

Multi-disciplinary research is essential to drive forward the sustainability agenda in a way that will increase resilience. Bek adds, "Technology is key, but this cannot happen in isolation. We also need research that looks at developing socially acceptable technologies and that helps drive positive consumer behaviours. We also need to be wary of unintended consequences – the steps taken to mitigate one problem can exacerbate another."

He illustrates his words by giving an example from the fruit sector. "We are seeing a proliferation in massive net cages built to protect plants from extreme heat and wind damage. These structures not only are eyesores they are also creating a huge issue with plastic pollution, both immediately as overtime the plastic damages and shreds off into the environment, and, in the longer-term concerning eventual disposal. During my research, I have seen many of these structures erected in South Africa in the last five years in response to increasing heatwave conditions. We need to assess its full sustainability impacts."

#### CLIMATE CHANGE FROM A LOCAL PERSPECTIVE

The conclusion that does emerge from impact studies is that climate change has the potential to change the productivity of agriculture and floriculture significantly at most locations. A slight change in one environment could be disastrous, whereas more significant changes may not be so troublesome in others.

Bek notes, "The predictions certainly indicate that countries in Africa, Asia and Latin America will face considerable changes and that some of these will be extreme. For example, significant increases in temperature which will make agricultural production almost impossible. But there will be locations where the average changes will not be great but severe events will become more common, which could be catastrophic and of course much harder to mitigate against. There will also be areas of the world where horticultural production may become possible on a scale that is not currently possible, i.e. areas of northern Europe. Certainly, the projections do not look good for countries such as Kenya and Ethiopia."

#### WORKING WITH 'REAL-LIFE BUSINESSPEOPLE'

To achieve meaningful changes in the field of climate change (sustainability), CBiS draws from a broad range of



David Bek is a Co-Lead of the Sustainable Production and Consumption research cluster within Coventry University's Centre for Business in Society (CBiS).

knowledge and stakeholders, including 'real life businesspeople'. In the past, Bek has worked with protea growers Fynbloem and Intaba Flowers from South Africa. Here he has seen how the country's cut flower industry has made exciting strides in sustainable production. "A high proportion of stems are cut from wild landscapes. This has been a concern as species are under pressure. So, efforts have been made to introduce sustainable harvesting protocols and train harvesters, so they do not damage the seedbanks. This has triggered a broader concern for sustainability within the industry there. Fynbloem's pack shed is a remarkable structure, carefully designed to save energy and water. Management continually reviews sustainability metrics to ensure that improvement is ongoing. A push from retailers has been important – Fynbloem started with Marks & Spencer who were influenced by the Plan A sustainability programme, whilst Intaba have had close relationships with Woolworths in South Africa. They are potent proponents of sustainable farming. Supply chains that do not serve major retailers tend to be laxer about sustainability issues." Closer to home, FleuraMetz UK says Bek and his colleagues work is an eye-opener. "FleuraMetz UK are part of Coventry University's Sustainable cut-flowers project and have been very engaged and active. The project is multi-stakeholder

meaning that we have people representing various businesses and organisations involved, which exposes members to ideas and perspectives they might not otherwise come across. FleuraMetz has been very interested to learn more about what sustainability means in practice and are looking to be very pro-active. For example, during a project workshop they realised that it would be a good idea to communicate which certificates were held by their suppliers – they added this information to their website overnight."

**HOW SHOULD THE FLORICULTURE SECTOR POSITION ITSELF?**

Climate change risks are not equal. To ensure that low-income groups have access to critical resources and decision-making processes, more engagement, and more work via multi-stakeholder groups is needed. Bek comments, "On site audits need to be more focused on 'the workers' voice' and community input. These are not just a 'nice to have' – but can be vital for picking up early signals of problems, which can disrupt supply chains." Legislation, regulations, taxes, and subsidies are all ways that governments can influence the speed of climate friendly production and trade. How should the floriculture industry position itself to be part of the conversation that drives change? "Acting together is

'DON'T JUST KICK THE CAN DOWN THE ROAD'

key. Being open to the issues and challenges that exist – don't just kick the can down the road. The industry has shown incredible agility this year in responding to the pandemic crisis. Climate issues will be more intractable and needs work now to mitigate. The key thing is to try and reduce the impacts of climate change (i.e. cut emissions) rather than just work out how to live with it. The latter approach may be OK for some in the world but for others it will be catastrophic."

**EMISSIONS, EMISSIONS, EMISSIONS**

In terms of climate change policies, Bek says reducing carbon emissions must be a priority. "And this will require cross-industry work to balance issues such as air-freight versus producing out of season flowers in European greenhouses. It is vital to get ahead of the game rather than responding to crises. Change must be meaningful and not marketing-spin. There has to be an awareness that the policy environment could shift markedly against 'non-essential' items with a high carbon footprint. I was told very bluntly by a leading carbon footprint expert that flying flowers around the world was not acceptable! The industry needs to get ahead of the game before such views take over the policy space." If business success depends on knowing your numbers, the question is whether any scientific research is pinpointing the global ornamental



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PHOTO: DIMITRIOS FOS

horticulture's contribution to climate change?

"Unfortunately, I do not have such information to hand. I would be very wary of such data as there would be a great many assumptions made in its calculation and technologies are changing rapidly. However, the studies I have seen generally point out that any form of production that involves heating or flying is going to be in the wrong territory with respect to greenhouse gases. Horticulture is intensive and by definition will have disproportionate impacts. Ornamental horticulture is a thornier issue than food production as one can debate whether the products are 'essential' and therefore what degree of justification there is for producing negative impacts on climate change. My view is that the industry needs to tackle this head-on and to not only look at ways of pushing more environmentally sound production and supply chains but also to really promote forms of horticultural practice that benefit the environment. Encourage people to plant trees and shrubs. And stop promoting clearly negative products. My personal bugbears are plastic grass and plastic pseudo plants. The industry can and should promote itself as part of the solution."

#### THE ELUSIVE GREEN CONSUMER

Bek's work also involves helping British growers to develop the market for more seasonal flowers. The pertinent question is whether local always means more sustainable? "No! Everything is local to somewhere! Unfortunately, the word 'local' has come to encapsulate many properties

and meanings. In reality it does not always stand up to scrutiny. Just because something has been produced locally does not mean that it has been produced and supplied sustainably. Flowers grown in heated greenhouses with inefficient irrigation systems and topped up with lashings of fertiliser grown in peat cannot be considered sustainable, even if they are grown next door! We must take a holistic approach. Being local reduces carbon usage through travel and provides local employment. But the overall impact may not be sustainable. We are involved in work with smaller scale flower producers in the UK to discuss ways of ensuring that local does mean sustainable. People have been engaging very closely with the project and are keen to ensure that they are sustainable in a holistic way. They also feel that this matters to their customers."

Speaking of consumers, Bek agrees that there is such thing as an elusive green consumer, responsible for the well-known gap between the values that people claim to hold and their actual behaviours. "But there is a clear and growing 'green' market. I do not see this slowing. As people become more aware of the issues so their behaviour will change. The growth of B Corporations\* is a hugely significant trend – businesses nailing their sustainability colours to the mast and saying 'come on then, scrutinise us'. This is a massive behavioural shift in capitalism. And we can see big shifts occurring in the world of venture capital, where some big players now look very carefully where they will put their money in terms of sustainability issues."

*David Bek (third from left) is frequently invited as keynote speaker as in 2019 when he gave a presentation at AIPH's Sustainability Conference.*

#### MEETING THE SDGS

Bek's research aligns with the UN's Sustainable Development Goal 12: 'Ensure sustainable consumption and production patterns'. He says, "Our research takes a 'whole supply chain' approach, examining activities, attitudes and behaviours at different points in the life cycle of products. Horticulture, in its widest sense, can be a big contributor to meeting the SDGs and providing cheap, accessible food, providing employment and other necessities. There is a whole debate to be had about how recreational horticulture needs to shift and be real leaders."

#### PEOPLE, PLANET...BUT WHAT ABOUT PROFIT?

True sustainability should focus on the famous triple bottom line People Planet Profit. Do climate change policies and measures and sustainable production undermine or improve the financial results of flower farms? "Well, done properly it should improve the financial bottom line. Reduce energy usage equals cost savings...maybe not immediately due to capital investments but in the medium term. I have interviewed farm managers in South Africa who have been pleasantly surprised by the cost savings resulting from sustainable practices. Sharing good practices is key so that people do not have to experiment and learn from getting it wrong first time. Frankly, it is in everyone's interests to make the shift."

From a consumer's perspective, values, ethics, concerns and beliefs may be necessary for making life decisions but perhaps never will be when you are picking your flowers and plants. What does Bek think? "I disagree, and there are plenty of florists who will disagree! More and more folk are bothered, and I think the flower growers/sellers who decide to be at the vanguard of change will reap rather handsome dividends. People want to feel good about their choices – well, what could be better than a nice bunch of flowers that improves your day and which genuinely makes the world a better place? The industry needs to be bold."