

Blockchain benefits sustainable food production

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Associate Professor Michaela Balzarova is exploring blockchain technology as a tool to ensure sustainable food production for everyone. Credit: University of Canterbury

Adapting new data technologies may lead to fairer food prices for

consumers and producers, by increasing transparency.

Associate Professor Michaela Balzarova of Te Rāngai Umanga me te Ture | College of Business and Law is conducting [theoretical research](#) into eco-labelling schemes and voluntary environmental systems that businesses adopt to mitigate their environmental and social impacts. She is also exploring alternative schemes and to what extent [blockchain technology](#) helps to address sustainability challenges that arise from problems of production and consumption of goods and services.

Using blockchain in future, she suggests, could be a way of ensuring transparency of transactions, gathering more [accurate data](#) and eliminating the need for intermediaries. Associate Professor Balzarova believes that once present problems related to trust and a lack of experience with blockchain technology are addressed, using blockchain platform for future transactions could result in reduced prices for consumers and fairer returns for farmers.

For example, Fair Trade labels have been developed to improve the livelihoods of farmers in developing countries. In the case of coffee, the problem with this approach is that products may have gone through as many as 26 intermediaries that may have added no value to the product or service and consumers have no way of knowing if the price they have paid is fair. The transactions are not transparent and are not direct.

Limited benefits to current labelling schemes

Eco-labels were created to address increased consumer demand for environmentally sound and ethical production processes and to provide the consumer with better information about the product, allowing them to make more environmentally friendly purchases. However, literature is inconclusive about the social, economic and environmental effectiveness of eco-labels. In other words, it is not clear whether eco-labels deliver

what they promise—that is, creating conditions for indefinite sustainable production and overcoming inequalities within the supply chain—or if they are promoting unsustainable trends in the consumption of goods. Eco-labels are facing challenges in terms of measurability. This is mostly due to a lack of data, inconsistent record-keeping and confidentiality issues, with the result that it is not possible to assess the entire programme's economic, environmental and social impact.

This is where blockchain technology promises improvements. It provides a novel way of recording data and confidence in peer-to-peer trading transactions. It keeps records of digital asset transactions in a decentralised manner, based on mathematical algorithms and [financial incentives](#).

"We need to focus models on how we can feed everyone on a fair basis, improving comfort and standard of living for everyone on this planet. It's not just an issue of getting rid of intermediaries. We need to encourage users to take ownership of data stored on their behalf and blockchain enables this," says Associate Professor Balzarova.

"Right now, I have been exploring benefits of blockchain technology in sustainable food production theoretically, by looking at what blockchain offers versus experiences with labelling schemes that try to mitigate adverse production impacts. In the field of food production and agriculture, I see a clear overlap of my research interests with UC's Kia Tōpū programme."

Associate Professor Balzarova first discovered [blockchain](#) during a short visit to Vienna in 2017. She is returning there in 2019 to join a team of colleagues from the University of Natural Resources and Life Sciences (BOKU) that will assist Grüne Erde GmbH—the first Austrian company certified under Fair Wear Foundation—to set up a system for monitoring and remediating the labour conditions of its suppliers.

Furthermore, Associate Professor Balzarova will be presenting the outcomes of her conceptual study at an international conference of the European Academy of Management, EURAM 2019, in Portugal later in the year.

Provided by University of Canterbury

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