

## **Blockchain for bio-based value chains**

*- Using blockchain technology to accelerate sustainability, transparency and traceability in bio-based value chains*

### **Project purpose**

The purpose of the project is to assess the potential of blockchain technology to address challenges with traceability and credibility of information on sustainability in bio-based supply chains, as well as to demonstrate real-world applicability of the technology in this domain.

### **Partners**

The project is led by COWI A/S, Business Unit 3 (Water and Environment) with support from Business Unit 1 (Planning and Economics), and involves the following partners:

- University of Copenhagen, [DIKU](#) and [IGN](#)
- European Blockchain Center at IT University of Copenhagen (DK/EU)
- Chalmers University of Technology (SE)
- WWF (DK and International)
- Peter Larsen Kaffe (DK and SE)
- Nordic Approach (NO)

### **Using blockchain**

In non-technical terms, Blockchain technology is a chain of information packages called blocks that are all interlinked and public. The code in each block describing the data is called a hash and this is unique and cannot be modified by anyone but the owner. This technology holds potential for reliable, non-reputable transfer of information between parties that do not meet in time or place. This way the technology offers opportunities for increasing transparency and traceability in supply chains. Currently, information on producer and production of a product or goods is shared as paper file, email or filesharing, but at any stage such documentation can be manipulated. Using blockchain instead, it cannot be hampered with, and producer and user can be virtually connected and allow consumers, retailers, and intermediates to directly reward sustainable production practices.

### **Strategic relevance**

Many large-scale corporations are already experimenting with using blockchain in their supply chains to reap efficiency gains, increase transparency, and enable rewarding alternative production methods. Succeeding in building trust and transparency in sustainability can help trigger transformation of consumer behaviour in support of Sustainable Development Goal 12.1. However, blockchain is not a one-size-fits-all solution to the challenges of unsustainable supply chain practices but could provide a key step towards this. The project uses coffee as a case commodity, but findings will have wider applicability in other (bio-based) value chains.

### **The next step?**

The next step for blockchain technology is application at scale. The blockchain technology is behind bitcoins and other innovative real-world applications. However, blockchain is not applied at scale yet. This project will help food companies understand how blockchain can help them manage complex supply chains and tough consumer and regulatory demands. Once the test cases have been run and experiences gained, dissemination to businesses is crucial.