Food System Impact Valuation Initiative (FOODSIVI)
A collaborative initiative among food businesses, NGOs and academia

FOODCAPITAL Project Paper

With core funding support FOODSIVI seeks to realise public funded research projects with private partnerships and pilots

FoodCapital

Driven by investor concerns and environmental and social governance (ESG) incentives, corporate reporting and financial agencies are asking for more quantitative information about the externalities produced by food companies and retailers. Currently only a minority of food companies know the environmental and social impacts and risks in their value chain. Through simple apps that collect data from farmers, to more sophisticated solutions such as smart farms and smart processing facilities integrating their data collection with a digital ledger technology like blockchain, there is great potential for companies to use technology to transact environmental and social impact data along their value chains – and to have the data captured and formatted in an automated way for private sector reporting.

At the Second Oxford Meeting one company gave a presentation on how they leveraged a discounted interest rate on a half billion dollar loan by promising to meet ESG criteria, and the development of an app to collect data from their farmers to go toward certification that the ESG criteria had been met. This demonstrated an avenue to incentivise, by directing a proportion of the capital dividend/saving up the value chain, the recording and transaction of environmental and social impact data (and the building of digital infrastructure to do so) down a company value chain for the purpose of reporting and ESG.
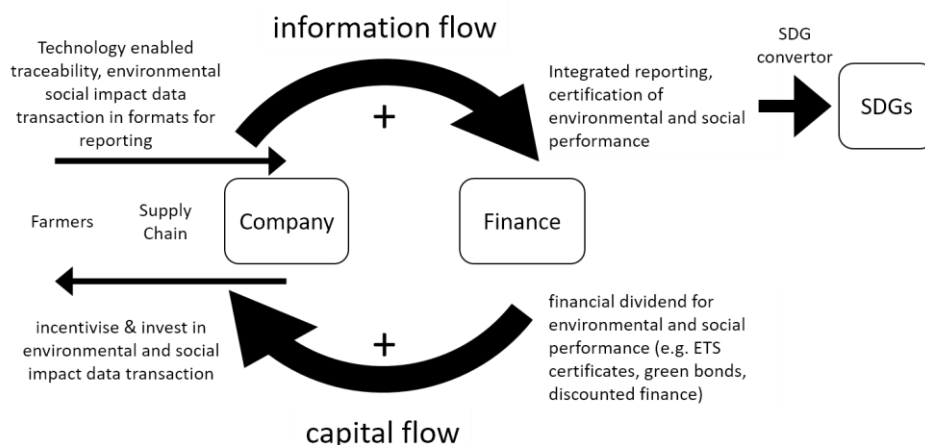
While research projects on "smart farms" concerning big data and sensors for data collection abound, the focus almost exclusively has been on environmental efficiency or increasing yield at the farm level. There has been little research on incentivising data collection for upstream uses, formats

for the transaction of such data, and technology to automate corporate reporting and ESG considerations down the value chain.

Aims of the project:
- Research technologies that, with capital investment, could incentivise farmers, processors and supply chains to transact environmental and social impact data in the form that companies need for integrated and SDG reporting.
- Investigate mechanisms by which major food companies and food retailers can obtain financial capital (directly, e.g. ETS trading, or through capital savings, e.g. lower interest loans and green bonds tied to environmental and social performance) and pass back along the supply chain a proportion of that gained/saved capital to: i) acquire the environmental and social data needed for reporting against the capital conditions; ii) invest in the development and use of technologies to transact environmental and social impact data.
  - Technologies can act in two capital raising or cost reducing ways, decreasing the cost of compliance by automating or formatting data acquisition exactly for integrated or SDG reporting, and increasing ETS stock or access to cheaper capital. In turn a proportion of these savings fund the technologies and their implementation.
- Report on opportunity/feasibility for a virtuous, accelerating cycle where reporting improves in quality and transparency, thereby making financial capitalisation of ESG more likely and more prevalent, which in turn improves the value of, and infrastructure for, transacting environmental and social data in formats for reporting, and so on.
- Demonstrate through pilots implementations of technology enabled information flow for reporting and capital flow from finance

Components of project:
- Integrated reporting research. What data is required for integrated reporting, in what formats, for which reporting agency, which metrics, what ESG certification is required, at what level of transparency, what accounting system does transacted information have to be imported into. This shapes what is to be collected and transacted.
  - Additionally, develop a SDG convertor/exporter that can take environmental and social performance data and match/report against SDG indicators
- Business and finance research. Fundamental research is required on the elements and feasibility of capital flow back in the virtuous cycle
  - What are current and future ESG financial dividends and their criteria, including a review of examples
  - Potential mechanisms for business to incentivise and invest in their value chains
  - There are many claims that "the data on a farm will be worth more than its production in the future". Yet there has been little research on how farmers will be able to control the data on their farm and (be a part of) its monetisation. Research focussed particularly on incentivising and investment for farmer information and capital flow
    - E.g. solutions through potential financial instruments. Individual blockchains are tradeable commodities whose blocks increase in value as the data is accessed (increase in demand), data contributors to the chain (e.g. farmers) can hold or sell their share in the blockchain.
- Technological development
  - Trust and traceability through digital ledgers and certification of performance
  - (software engineering) development of API
    - Companies can develop their own front-ends
    - Sensor/hardware companies/third party providers can import from their own systems to the blockchain
    - Operability with reporting and accounting software

- Estimating environmental and social change in the food system
  - How much capital gain or dividend can be expected to flow toward incentivising environmental and social performance and impact data collection, what amount of transformation can be expected from that capital incentive, in what parts of the food system? How much non-capital incentive does reporting pressure produce, what amount of transformation is it likely to produce, in what parts of the food system?
- Case studies/Pilots
  - Pilot research on ledger-to-integrated reporting in a many-supplier, global, value chain.
  - Bord Bia and Origin Green. Ways for Origin Green to automate and certify environmental and social data, monetise it by transacting with reporting companies using Irish commodities and establish mechanisms to reimburse Irish farmers.