

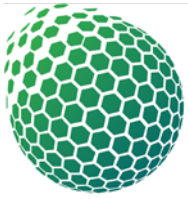
BLOCKCHAIN
CLIMATE
INSTITUTE

Satellite & Blockchain for upscaling natural conservation

Alastair Marke FRSA FRGS

Director-General, Blockchain Climate Institute

Member, ISO TC307 Blockchain (Use Case & Governance)
Standards Committee & ISO 14097 Climate Finance Standard
Committee



BLOCKCHAIN
CLIMATE
INSTITUTE

RELEASED ON 2 JULY 2018

Transforming Climate Finance and Green Investment with Blockchains

Edited by Alastair Marke

Transforming Climate Finance
and Green Investment with Blockchains

Edited by
Marke



Associate Editors:
Bianca Sylvester
Justin Macinante
Stefan Klauser



Blockchain Climate Institute

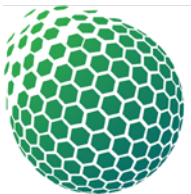


VISION

- ▶ Extensive deployment of Blockchain and other emerging digital technologies such as AI and the IoT in state and non-state climate and sustainability actions
- ▶ A not-for-profit entity combining the functions of a think tank and an advisory group supporting G77 countries in climate change policy development in the digital era

MISSION

- ▶ To raise awareness among stakeholders in the international climate change policy community of the tremendous potentials of Blockchain and emerging digital technologies to considerably enhance climate actions at multiple levels
- ▶ To provide a 'super scaling' platform among policy-makers, corporate executives and Blockchain innovators for experimenting and adopting the most viable concepts in an enabling environment

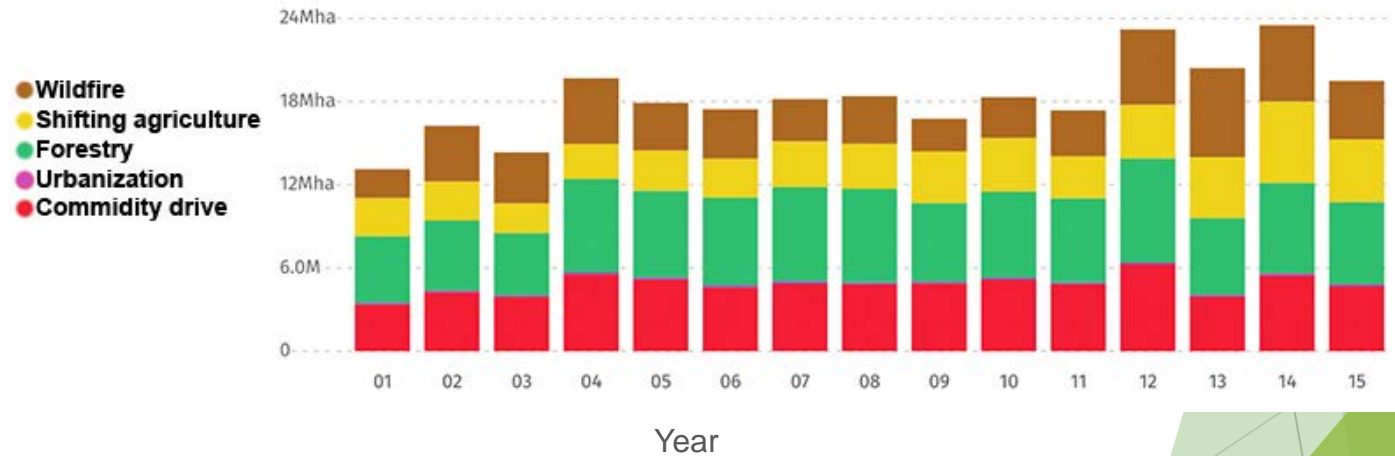


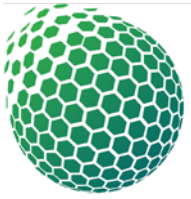
BLOCKCHAIN
CLIMATE
INSTITUTE

Deforestation and climate change



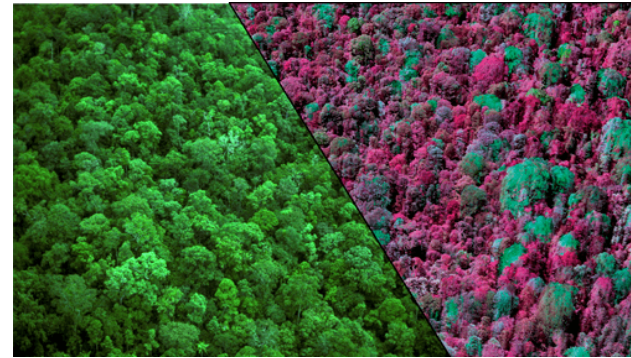
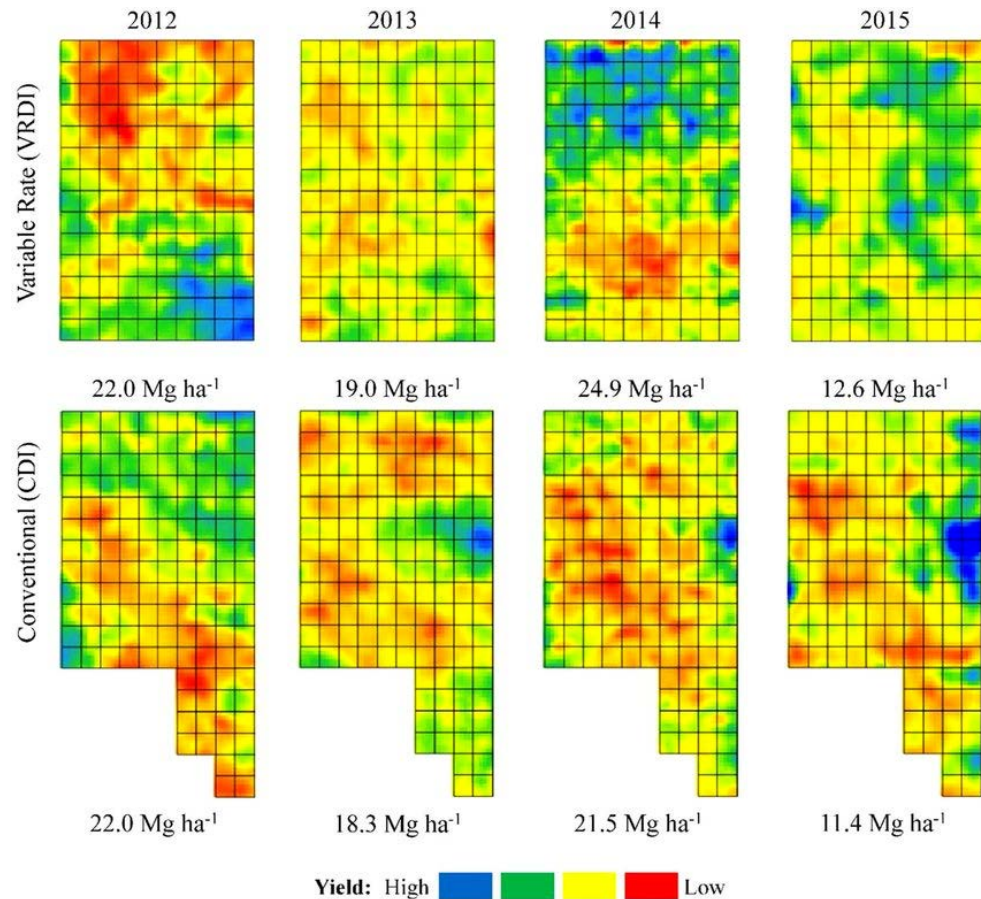
Globally from 2001 to 2015, 27% of tree cover loss occurred in areas where the dominant drivers of loss resulted in permanent deforestation.

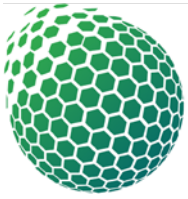




BLOCKCHAIN
CLIMATE
INSTITUTE

Satellites, sustainable forestry and agriculture





Drones to complement satellite imagery

Satellites



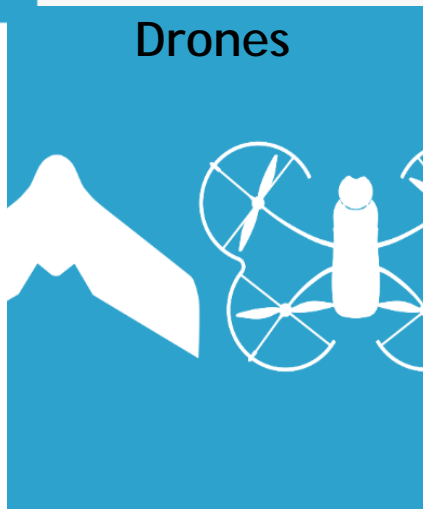
Advantages

- + Extensive coverage
- + Wide spectral capabilities including LIDAR

Disadvantages

- Relatively low-resolution (down to 30 cm/pixel)
- Image timing controlled by provider
- Limited coverage in some regions
- Imagery susceptible to cloud cover

Drones

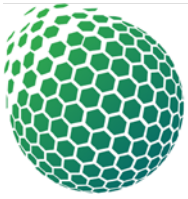


Advantages

- + Cost-effective (suits smaller projects)
- + Imagery can be acquired on demand
- + Very high-resolution (fixed-wing: 2.5 cm/pixel, rotary: sub-millimetre)
- + Typically unaffected by cloud cover (due to lower flight altitudes)
- + Excellent positional accuracy with GCPs or RTK

Disadvantages

- Relatively small single-flight coverage
- Drone regulations or bans can restrict usage
- Operations susceptible to bad weather
- No canopy penetration (unless heavy LIDAR payload)
- Difficult to reconstruct imagery with few tie points (for example, imagery of homogenous terrain or water)



BLOCKCHAIN
CLIMATE
INSTITUTE

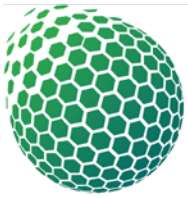
Drones for REDD+

► Role:

- Count wildlife and trees
- Monitor emissions and chemical sampling
- Analyse tree health

► Function:

- History of change over time
- Highlight areas of priority
- Evaluate the effectiveness of large and small-scale projects



BLOCKCHAIN
CLIMATE
INSTITUTE

Gainforest to reduce deforestation



Decentralized

We're in this together



Ready for takeoff

This MVP actually works!



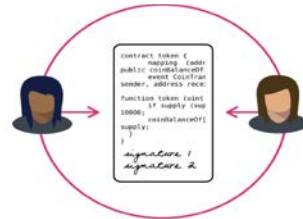
Sustainable

Help ensure future generations live
in a better world

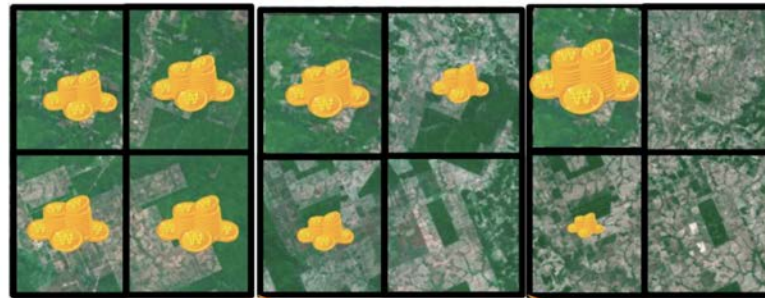


Sequestration machine

Turbocharge the world's best CO2
reduction engine



Staking System



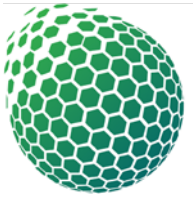
CarbonConservation: Blockchains, satellites and drones for forest fire reduction

A 'blockchain bounty fund' in demonstration

- ▶ Satellite and drone imagery provides real-time verification of preventative action taken
- ▶ Rewards facilitated through blockchain-based smart contracts
- ▶ Smart contracts streamline current paper-based procedures
- ▶ Distributed Ledger Technology to automate payment, monitoring and evaluation

Our vision – Broader than forest monitoring

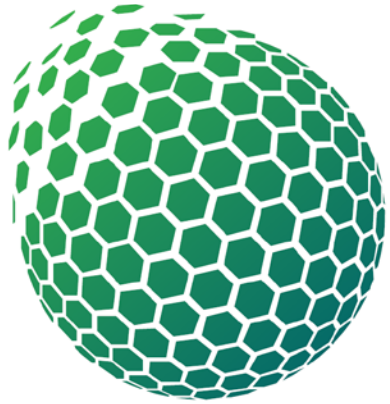
- ▶ Satellite imagery + Drones
- ▶ Blockchain to record biodiversity data
- ▶ AI for observation data analytics
- ▶ Blockchain for MRV (e.g. forest / coral reef monitoring)
- ▶ Integrated with the wider climate finance architecture and impact investing market



BLOCKCHAIN
CLIMATE
INSTITUTE

Proposed ESA-BCI Joint Working Group on Blockchain Technology for Satellite Earth Observation Programmes





BLOCKCHAIN
CLIMATE
INSTITUTE

Alastair Marke FRSA FRGS

Director-General, Blockchain Climate Institute

Regional Director for Western Europe, Blockchain Commission
for Sustainable Development

Member, ISO 14097 Climate Finance & TC 307 Blockchain
Standards Committees

alastair.t.marke@gmail.com