

# Tokenization in the Agri-Food Value Chain (AFVC)

What tokens are we talking about?

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# Blockchain @Wageningen University & Research

<http://www.wur.eu/blockchain>



Making the food chain blockchain-ready



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MSc

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# Wageningen =

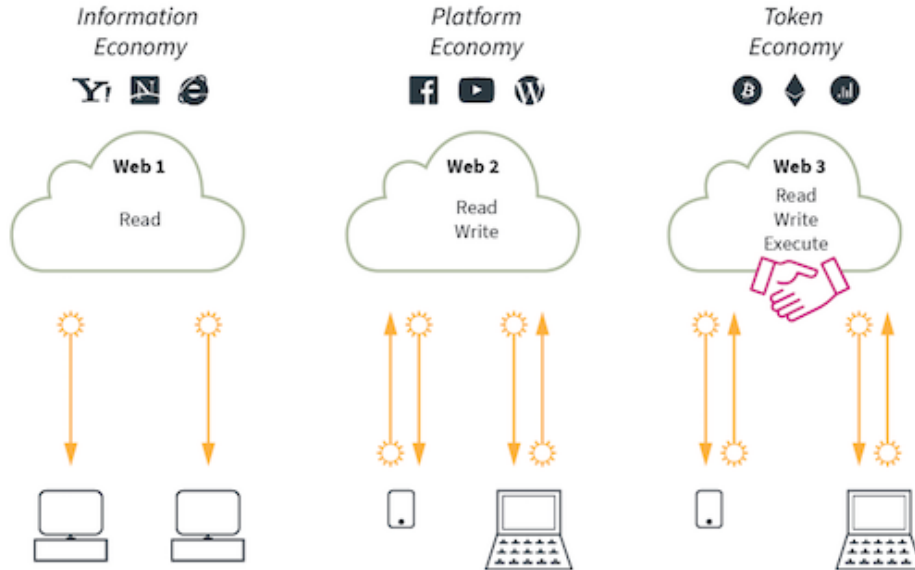
# Wageningen University & Wageningen Research



# We are in the 'Token Economy'

## History of the Web

From the Book "Token Economy" by Shermin Voshmgir, 2019  
Excerpts available on <https://blockchainhub.net>



A token is an object that represents or signifies something else.

Examples:

- Food tokens at fairs and festivals
- Game tokens
- Ownership (deeds)
- Rights and access permissions
- Etc.

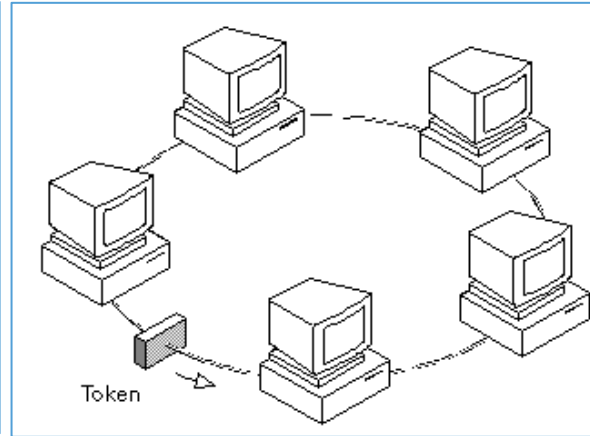


Image Source:

<https://blog.liquid.com/coin-vs-token>

# Tokens in computers and programming

- Keywords
- Operator
- Punctuation mark
- ...

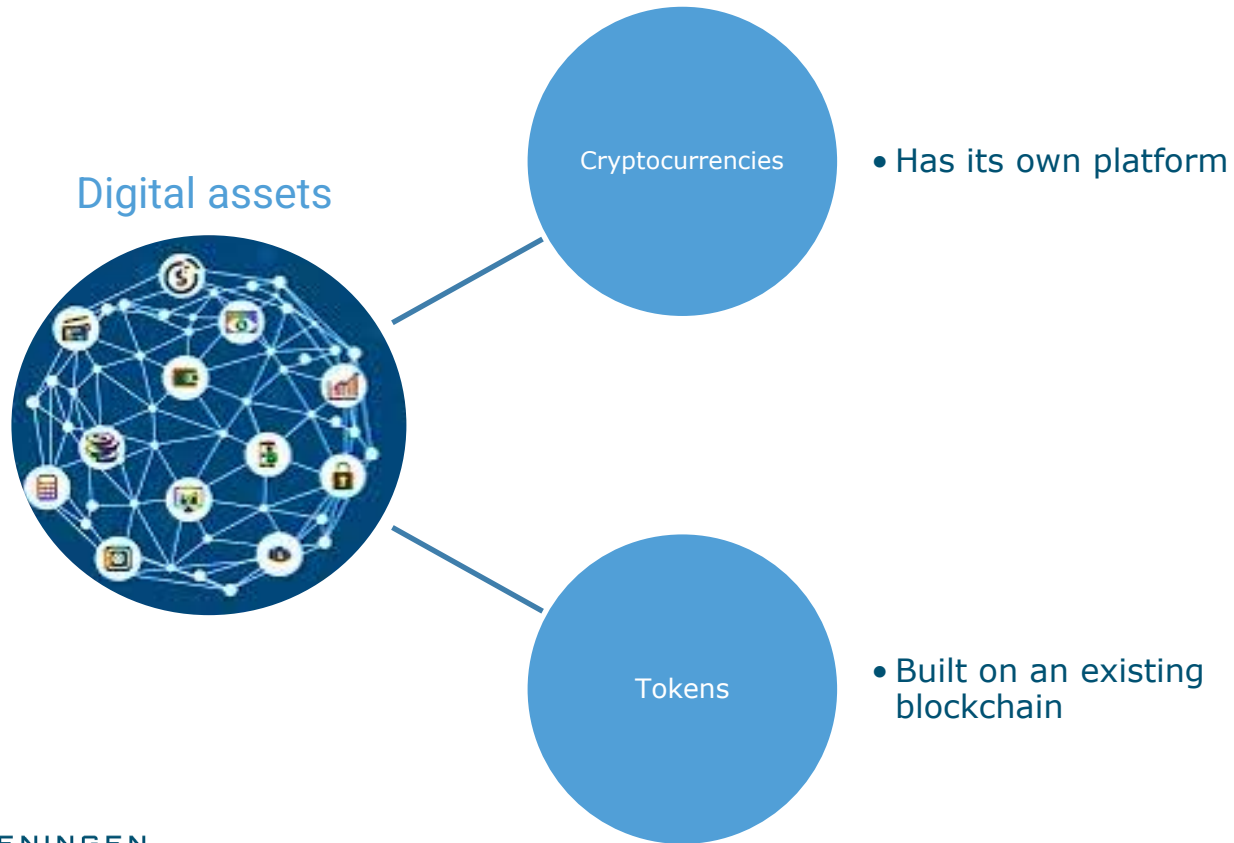


A single element of a programming language

Token-ring network

Security systems

# Tokens in the context of blockchain



















# Many tokens are being traded

coinbase.com/price

coinbase Prices Learn Individuals Businesses Developers Company Sign in Get started

BICONOMY (BICO) +138.5% price change  
Powerledger Added Nov 16  
Wrapped LUNA Token +199.8% views  
Bitcoin €31.09B volume (24h)  
Stellar Lumens Earn \$10

All assets Tradable Gainers Losers 1H 1D 1W 1M 1Y

Name	Price	Change	Price chart	Volume (24h)	Market cap	Supply	Trade
 Bitcoin BTC	€51,729.68	+2.20%		€35.2B	€975.7B	18.9M	<a href="#">Trade</a>
 Ethereum ETH	€4,153.38	+2.62%		€26.9B	€491.9B	118.6M	<a href="#">Trade</a>
 Ethereum 2 ETH2	€4,153.38	+2.62%		€26.9B	€491.9B	118.6M	
 Binance Coin BNB	€570.01	+4.29%		€2.8B	€95.0B	166.8M	
 Tether USDT	€0.88	-0.35%		€79.1B	€65.1B	73.6B	<a href="#">Trade</a>
 Solana SOL	€201.39	+9.03%		€3.0B	€61.9B	305.5M	<a href="#">Trade</a>
 Cardano ADA	€1.42	+1.88%		€1.6B	€47.2B	33.3B	<a href="#">Trade</a>
 XRP XRP	€0.90	+1.24%		€2.4B	€42.2B	47.2B	

# Creating your own token?



<https://moralis.io/how-to-create-your-own-erc-20-token-in-10-minutes/>



# Token Taxonomy Framework

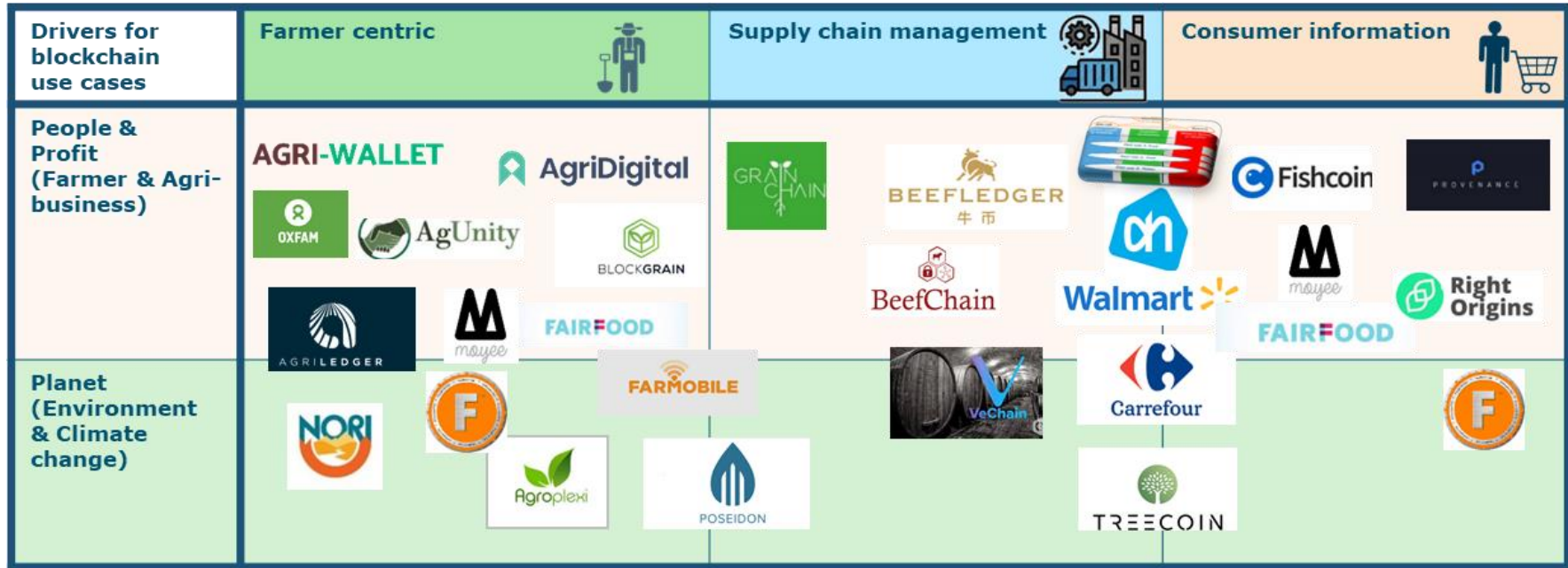
<b>Purpose Parameters</b>	<b>Class</b>	Coin / Cryptocurrency		Utility Token		Tokenised Security	
	<b>Function</b>	Asset-Based Token		Usage Token		Work Token	
	<b>Role</b>	Right	Value Exchange	Toll	Reward	Currency	Earnings
<b>Governance Parameters</b>	<b>Representation</b>	Digital		Physical		Legal	
	<b>Supply</b>	Schedule-based	Pre-mined, scheduled distribution	Pre-mined, one-off distribution	Discretionary		
	<b>Incentive System</b>	Enter Platform	Use Platform	Stay Long-Term	Leave Platform		
<b>Functional Parameters</b>	<b>Spendability</b>	Spendable		Non-Spendable			
	<b>Tradability</b>	Tradable		Non-Tradable			
	<b>Burnability</b>	Burnable		Non-Burnable			
	<b>Expirability</b>	Expirable		Non-Expirable			
	<b>Fungibility</b>	Fungible		Non-Fungible			
<b>Technical Parameters</b>	<b>Layer</b>	Blockchain (Native)		Protocol (Non-Native)		Application (dApp)	
	<b>Chain</b>	New Chain new Code	New Chain, forked Code	Forked Chain, forked Code	Issued on top of a protocol		

Source: Oliveira et al. 2018 "To token or not to Token: Tools for Understanding Blockchain Tokens", <https://doi.org/10.5167/uzh-157908>

Token Taxonomy Framework (TTF):

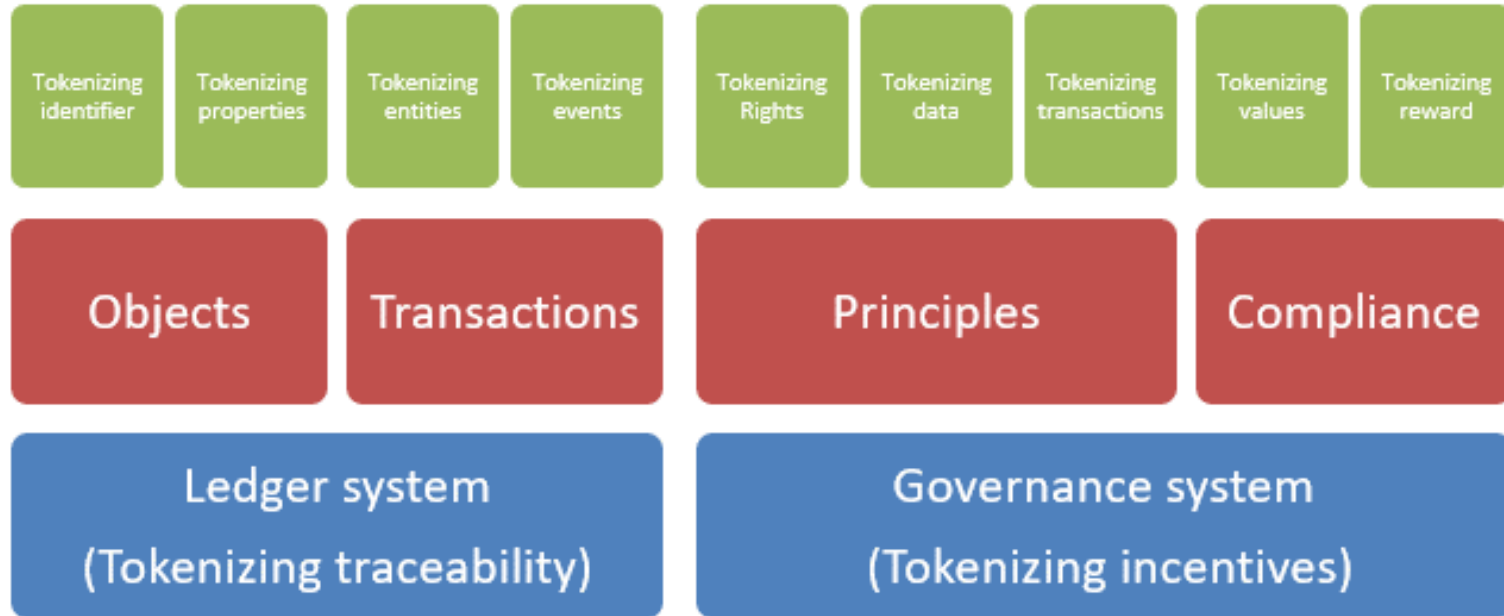
<https://github.com/InterWorkAlliance/TokenTaxonomyFramework/blob/main/token-taxonomy.md>

# Tokenization in AFVCs – blockchain use cases




Source: Blockchain voor agrifood: tussen droom en daad. <https://edepot.wur.nl/535127>

# There are many ways to tokenization



**Source:** Lan van Wassenae\*, Cor Verdouw, Ayalew Kassahun, Mireille van Hilten, Koos van der Meij, Bedir Tekinerdogan (2021) Tokenizing circularity- A conceptual framework (manuscript to be submitted)

Thank you for  
your attention!



To explore  
the potential  
of nature to  
improve the  
quality of life