Agribusiness Facility for Africa (ABF) & ICT4Ag

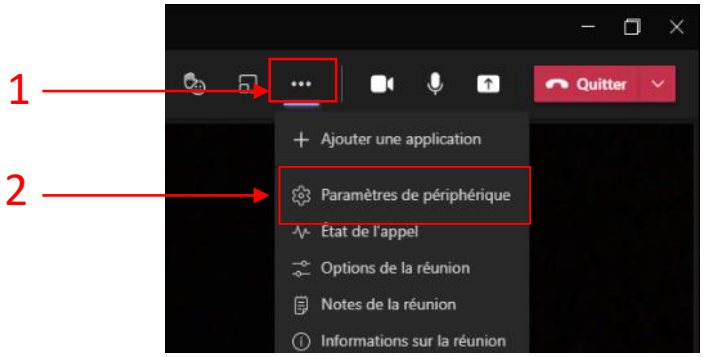
ABF Expert Talk No. 6 / 8 & ICT4Ag Data Series No 3

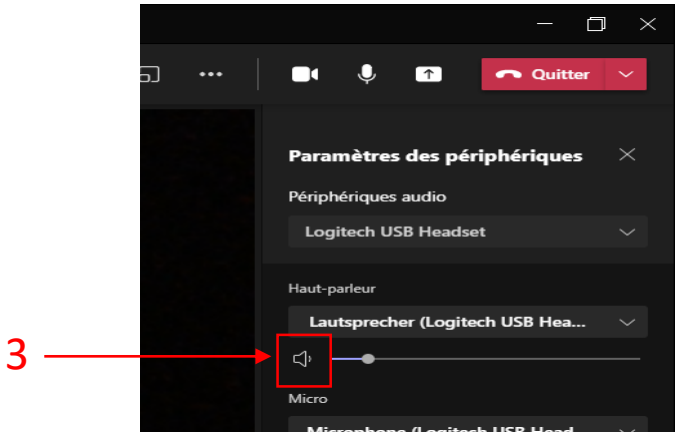
Distributing the value of data equally: How to ensure that smallholders and MSMEs benefit?

La valeur des données : Comment la distribuer équitablement pour que les petits exploitants et les MPME en profitent ?

Traduction

Étape 1 : Mettre MS Teams sur silencieux





Étape 2 : Ouvrir interactio

1. Cliquez sur le lien dans le chat : https://app.interactio.io/Search/DirectedSearch?eventCode=DATA2021

2. Cliquez sur le bouton  et sélectionnez la langue

Housekeeping

REC

Please note that this session will be recorded!

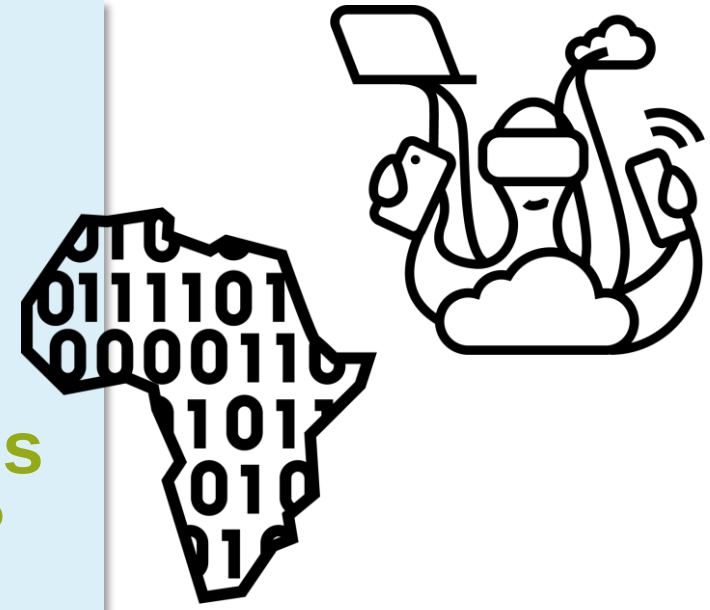
Mentimeter

https://www.menti.com/teyopa3rre

Click on the link in the chat and let us know what you think!

What in your view are the most critical issues related to “Data” in agribusiness?

Quels sont, selon vous, les problèmes les plus pertinentes liés aux "données" en agrobusiness ?



Your views: issues related to „Data“ in Agribusiness

Votre opinion: problèmes pertinentes liés aux "données" en agrobusiness

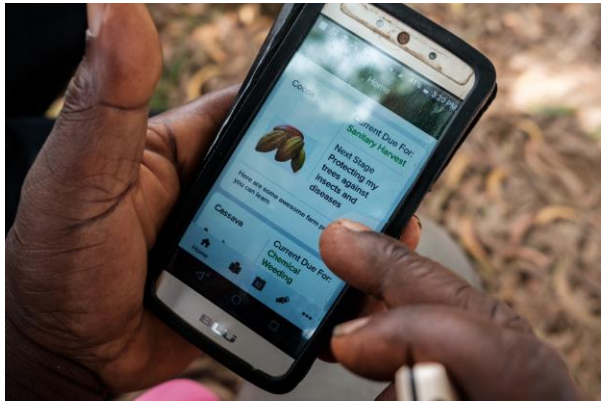
Agenda / Ordre du Jour

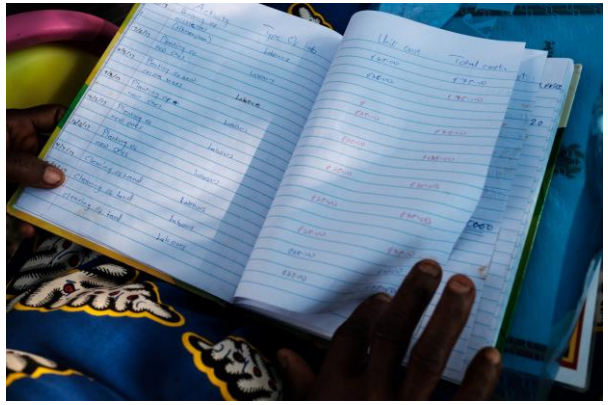
1. Opening remarks
2. Agenda and objective
3. The economic value of data - guiding principles on ethics, ownership and transparency
4. Data sharing to the benefit all? FarmStack and the Farmer Data Wallet
5. Practices, policies and code of conducts in support of open data
6. Discussion, Outlook & Closing

1. Mots de bienvenue
2. Agenda & objectif
3. La valeur économique des données - en considération d'éthique, de propriété et de transparence
4. Valeur d'échange des données: FarmStack et le « portefeuille de données » pour des microentreprises agricoles
5. Pratiques, politiques et codes de conduite en faveur de l' « open data »
6. Discussion, perspectives & clôture

Objectives of today‘s session

1. Understand the **economic value of data** in agriculture
2. Deep dive into **legal & ethical considerations, ownership and transparency of data** along agricultural value chains
3. Clarify why **data sharing** is important and how it may **benefit agricultural micro enterprises**





Our speakers today

1 **Mr. Jean Brice Tetka**,
Advisor, openIMIS initiative, GIZ
jean.tetka@giz.de

2 **Mr. Vineet Singh**,
Platform Architect, Digital Green
vineet@digitalgreen.org

3 **Ms Foteini Zampati**,
Lawyer & Independent Consultant on Open Data
foteini.zampati@godan.info

Introduction of keynote speaker 1

Mr. Jean Brice Tetka

Advisor to the openIMIS initiative, GIZ

Jean Brice Tetka works for GIZ as an Advisor to the Open IMIS initiative and in this capacity is dealing with Open Data approaches to improve management and financing processes in the health sector. He is a data and technology expert who, before joining GIZ, has worked on technology and data systems to fight land corruption for Transparency International.

DATA VALUE FOR ICT4AG

BY JEAN BRICE TETKA / ADVISOR, GIZ

7 DECEMBER, 2021 / JEAN.TETKA@GIZ.DE

PRESENTATION OUTLINE

- The Economic Value of Data
- Ethics, Ownership and Transparency related to data
- The Data Value Chain in Agriculture
- Guiding principles & questions

THE ECONOMIC VALUE OF DATA IN AGRICULTURE

The economic value of the data refers to whether data has economic advantages or disadvantages for agriculture.

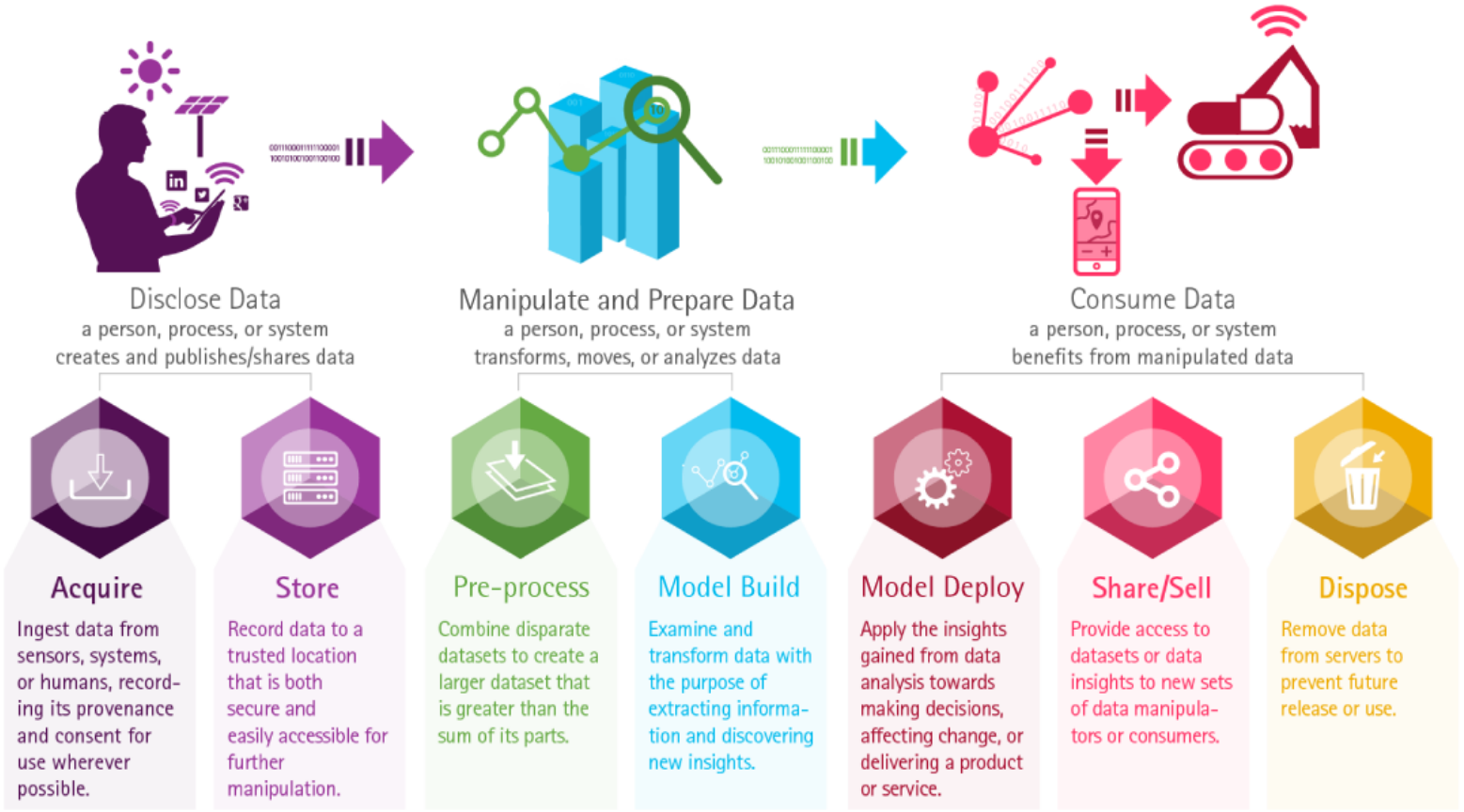
- Using data facilitates the generation of the information contributing to increase the profits and crop yields while minimizing the production costs
- Big Data as a tool in decision making that can lead to implementing sustainable business practices (Gupta et al., 2019)

CountrySTAT provides countries food and agriculture data on 9 domains from various sources with the objective to improve investments and policy making in agriculture.

- 1. Population and employment
- 2. Economy and Public Expenditure
- 3. Agriculture and rural development
- 4. Forestry
- 5. Fishery
- 6. Alimentation (FBS, food security and poverty…)
- 7. Price
- 8. Environment
- 9. Social (IDH, education, health, gender, rurality……..)

(https://www.fao.org/in-action/countrystat/background/en/)

ETHICS IN DATA



- **Transparency**: Are data gathered transparent ?
- **Consent**: Are the consent been given by the source to exploit the data?
- **Ownership**: Who can claim ownership in data in an agriculture value chain?
- **Data privacy**: Are the private data secured and not accessible by everybody?
- **Bias:** Is the data analysis subject to bias?
- **Outcomes**: Are the outcomes of the data hurting or weakening any individuals
- **Environment**: How to produce the data in a more environmentally friendly way?

Source: AI Ethics vs Data Ethics

Data Value Chain				Agri Value Chain
Data collection	• Structured and unstructured data collected • Multisensory data	• Collect data from farmers and extension agents using mobile devices • Sensors • Spatial data		• Seed production • Water supply • Draught power	**Pre-Production**
Data analysis	• Cross-sectorial data analysis • Statistics computation • Time-series analysis • Machine learning • Deep learning	• Data analysis to support smallholder farming and farmer groups		• Land preparation • Use of fertilizers, pesticides and herbicides • Labor • Harvest	**Production**
Data curation	• Data quality • Data bias	Verify: • Incomplete or missing data • Wrong sample data • Wrong model • Extreme data / outliers • Hidden factors		• Bulking • Transporting • Quality control • Packaging	**Processing**
Data storage	• Cloud • Local server • Security and privacy • Access to internet and Electricity	• Review the data storage policy • Find the suitable storage solution • Have a rescue plan		• Sorting • Packaging • Sale	**Marketing**
Data usage	• Decision making • Forecasting • Simulation	• Time-Critical Decision Modeling and Analysis • Cost/Benefit Analysis • Marketing and Modeling Advertising Campaign • Economic Order and Production Quantity Models for Inventory Management		• Purchase • Cleaning	**Wholesale and consumption**

The data value chain can apply to every step of the Agriculture value chain

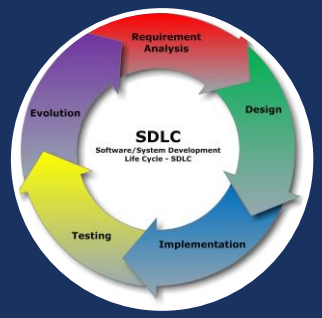
DATA & AGRI VALUE CHAIN

giz

SOME TECHNOLOGY GUIDING PRINCIPLES

Resources (data): Are the data collected in respect for the human dignity, the environment and following the laws and regulations?

Tools: Are the tools used the most efficient and cost effective?



Products: Is the product a response to THE need?

Transport: Where would the data be hosted? and who owns the data?

Workforce: Are the salaries fair and equitable?

Moral justification: Is the initiative creating additional problems?

"THEY SAY DATA IS THE NEW OIL. WHILE I PREFER A MORE SUSTAINABLE ANALOGY, FOR AFRICA IT IS CERTAINLY THE CASE THAT DATA MIGHT BE THE FUEL THAT DRIVES THE TRANSFORMATION OF SMALLHOLDER FARMING AND KEEPS THE CONTINENT ON TRACK TO MEET ITS FOOD AND NUTRITION DEMANDS INTO THIS CENTURY AND BEYOND. ALL THE INDICATORS POINT TO A MARKET THAT IS RIPE FOR INVESTMENT NOW. AND AS LONG AS WE LEARN FROM LESSONS, DO IT RIGHT AND ***MANAGE RISKS AND TAKE INTO ACCOUNT DATA SOVEREIGNTY, INCLUSIVITY, SUSTAINABILITY,*** *WE WILL ALL BENEFIT."*

MICHAEL HAILU, DIRECTOR, CTA

(DIGITALISATION IN AFRICAN AGRICULTURE REPORT 2019)

THANK YOU

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Introduction of keynote speaker 2

Mr. Vineet Singh

Platform Architect at Digital Green

Vineet Singh has been involved and leading technology development and strategy for a number of digital innovations. At Digital Green he is working as a Platform Architect for the FarmStack data sharing protocol and in this capacity aims to empower agricultural microenterprises through equitable data sharing models.

FarmStack

farmstack.co

farmstack@digitalgreen.org

BILL & MELINDA GATES foundation

UKaid from the British people

Digital Green

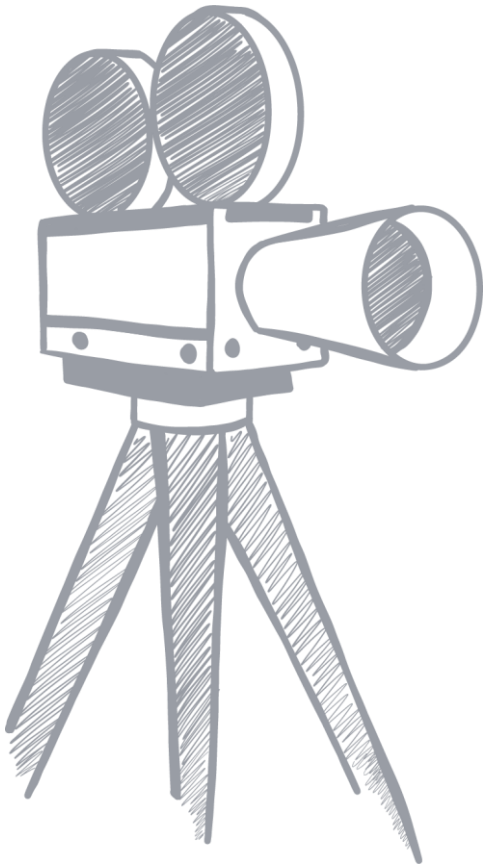
Walmart org

ግብርና ሚኒስቴር MINISTRY OF AGRICULTURE

Ethiopian ATA Agricultural Transformation Agency የኢትዮጵያ ግብርና ትራንስፎርሜሽን ኤጀንሲ



COMMUNITY VIDEOS



7,000
LOCALIZED
VIDEOS
in over 50
LANGUAGES

screened by over
46,000
FRONTLINE WORKERS
to more than
2.6 Million
FARMERS / 75%
WOMEN

DATA GENERATED FROM COMMUNITY VIDEOS

- FARMER DATA (location, crops grown)
- ACTIVITY DATA (videos screened, viewed by farmer)
- BEHAVIOR CHANGE DATA (adopted practices)
- GENDER DATA

we're building an ecosystem where FARMERS can CONTROL their own DATA

and MAKE their own DECISIONS ✓

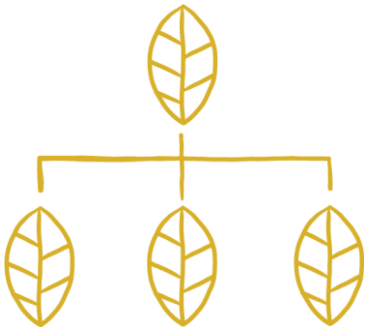

BUYERS
ADVISORY
CREDIT &
INSURANCE
ECOSYSTEM
MARKETS
DATA

FarmStack: A protocol, not a platform

system level

Open-source

Community governance



organizational level

Usage policies

Peer-to-peer data connectors

farmer level

Service discovery

Consent manager

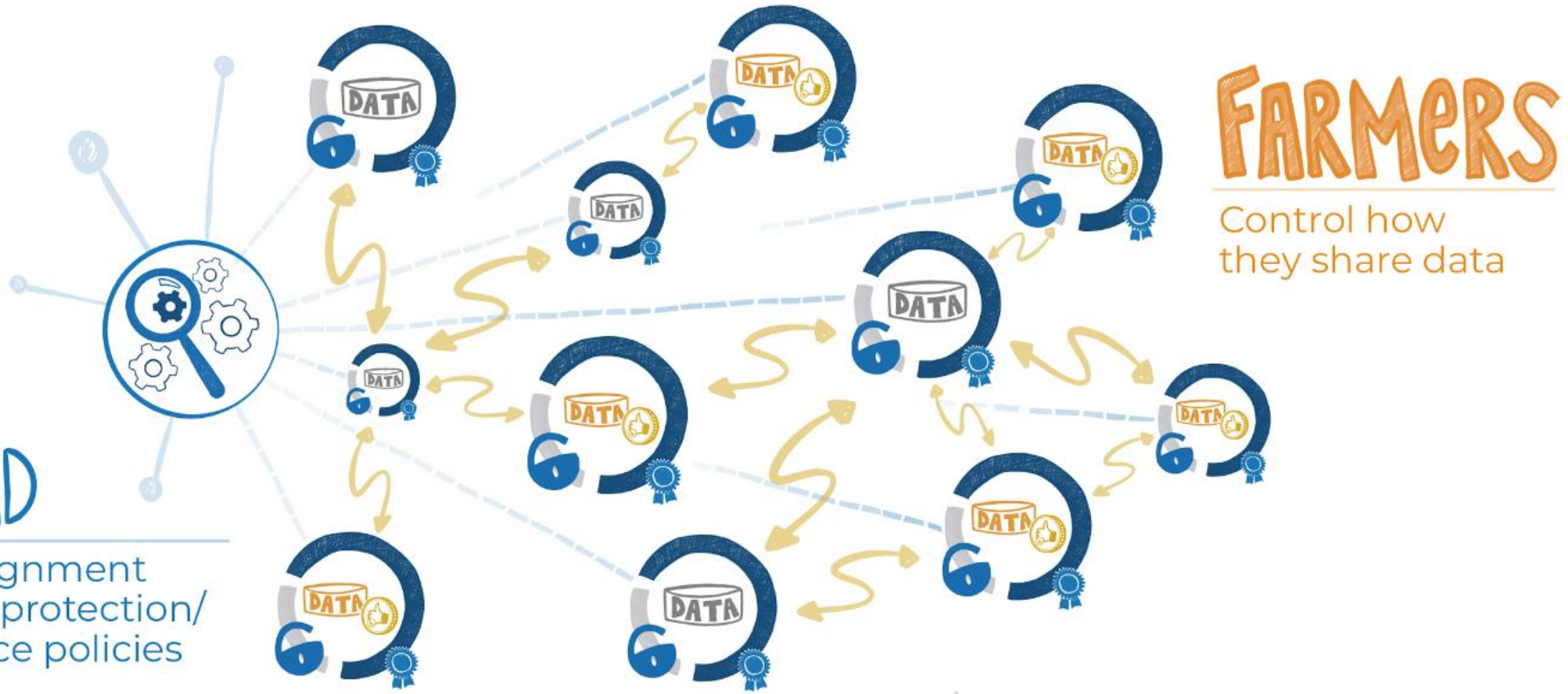
Usage policies allow for *flexible control*

Data access control

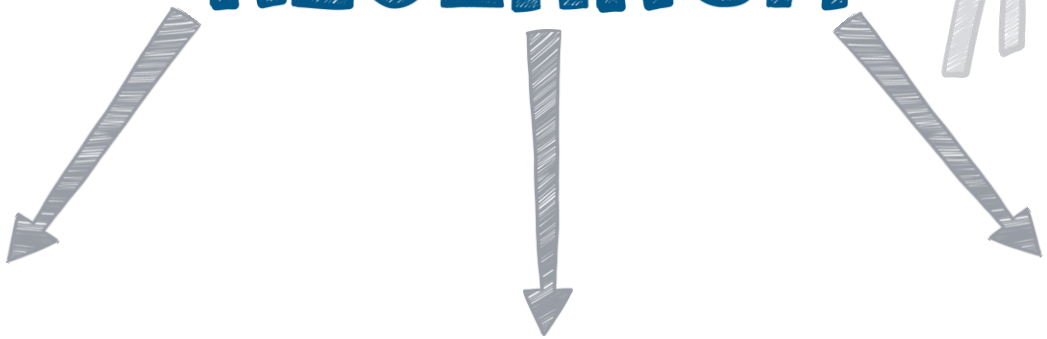
Data processing restrictions

DATA USAGE CONTROL

Community *governance*



How is RESEARCH typically done?



INTERNATIONAL RESEARCH

Network: CGIAR, IRRI, CIMMYT

SEED COMPANY PRIVATE RESEARCHERS

NATIONAL AGRICULTURAL RESEARCH SYSTEM

Network: NARS, state agriculture universities

How is RESEARCH typically done?

INTERNATIONAL RESEARCH

Network: CGIAR, IRRI, CIMMYT

SEED COMPANY PRIVATE RESEARCHERS

NATIONAL AGRICULTURAL RESEARCH SYSTEM

Network: NARS, state agriculture universities

SEED COMPANY SALES AND MARKETING

GOVERNMENT EXTENSION

Where are the FARMERS?

and the... WIDER ecosystem actors?

CONSUMERS

FARMERS ORGS

COMPANIES

Where are the FARMERS?

and the... WIDER ecosystem actors?

BANKS/ INVESTORS

START-UPS

NGOs

INSURERS

What we know:

1

One player can’t do it all

2

Knowledge exchange needs to flow in all directions

3

Networks and leads evolve over time

4

Digital and data can amplify efficiency and protect rights

notes

UPSTREAM COMBO DOWNSTREAM

DONORS & INTERNATIONAL RESEARCH

FARMERS

BUYER CUSTOMERS

BANKS/ INVESTORS

INSURERS

FARMERS ORGS

START-UPS

CONSUMERS

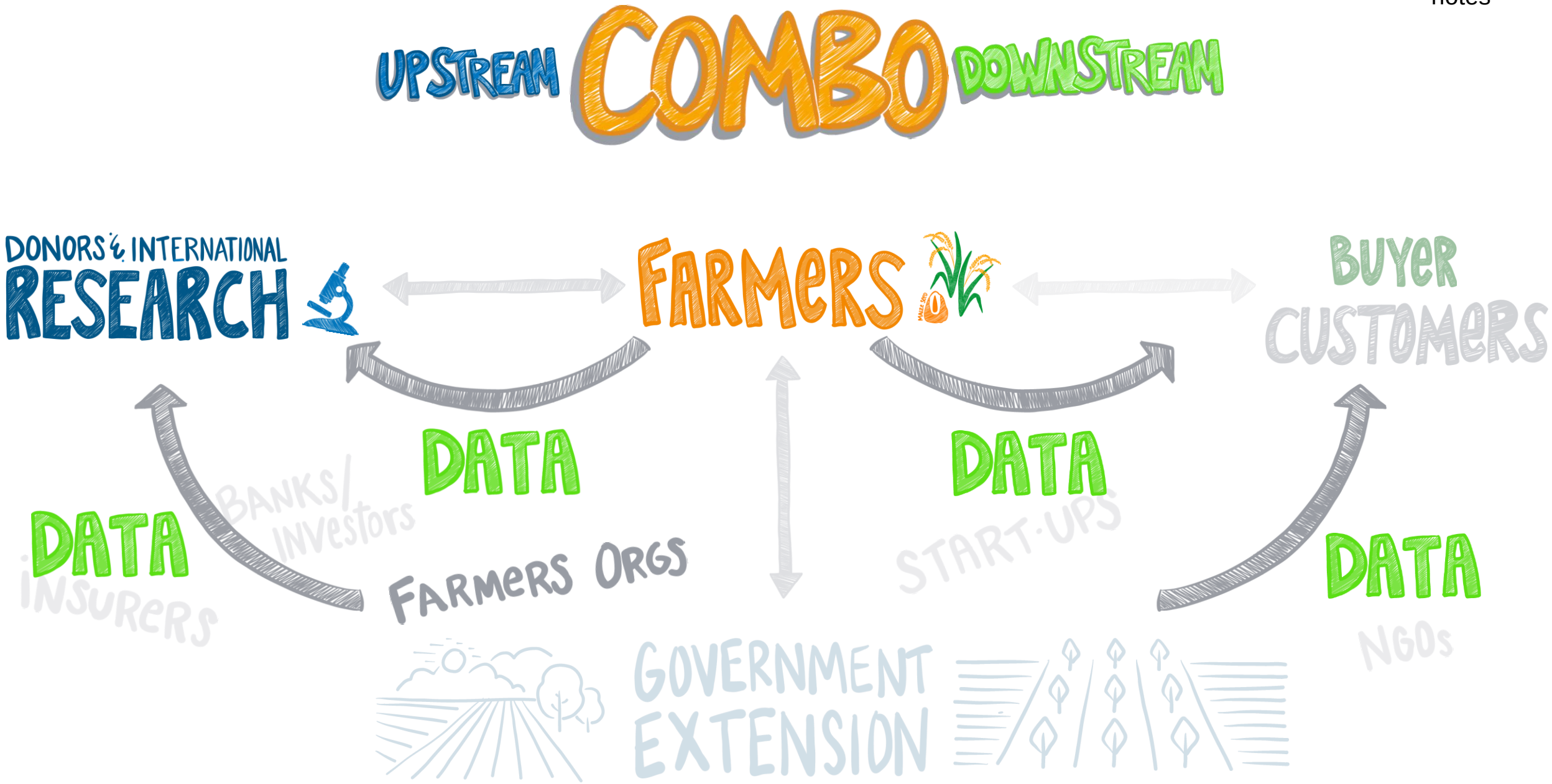
NGOs

RESEARCH

GOVERNMENT EXTENSION

COMPANIES

notes


UPSTREAM
COMBO
DOWNSTREAM
DONORS & INTERNATIONAL
RESEARCH
FARMERS
BUYER
CUSTOMERS
DATA
DATA
DATA
DATA
BANKS/
INVESTORS
INSURERS
FARMERS ORGS
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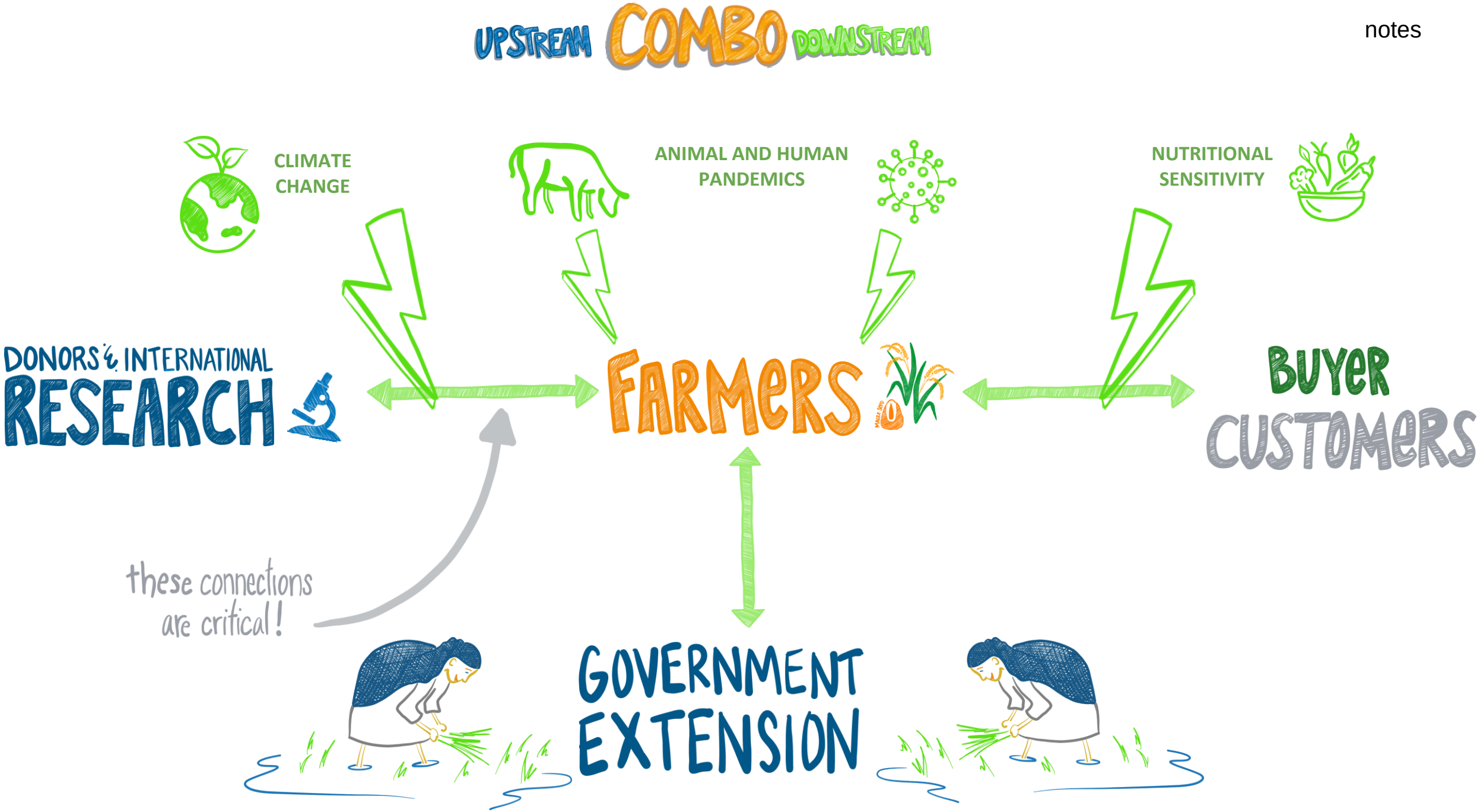
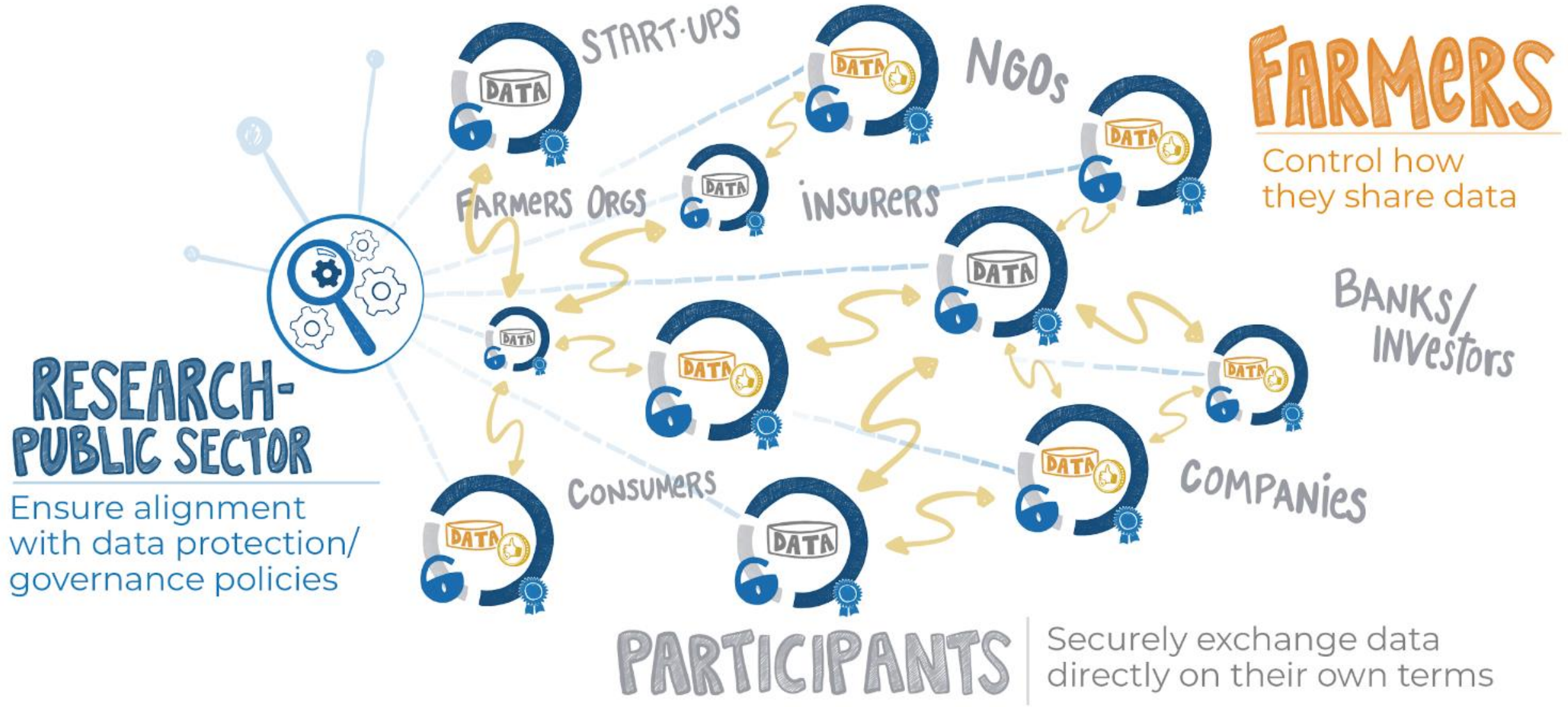
NGOs
GOVERNMENT
EXTENSION

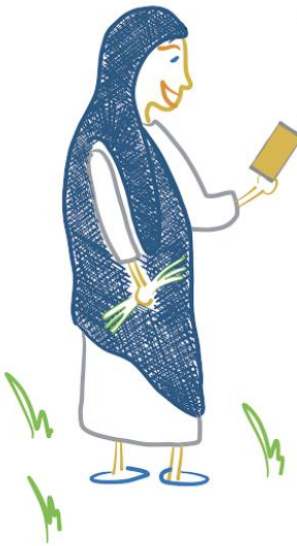
notes


UPSTREAM COMBO DOWNSTREAM
CLIMATE CHANGE
ANIMAL AND HUMAN PANDEMICS
NUTRITIONAL SENSITIVITY
DONORS & INTERNATIONAL RESEARCH
FARMERS
BUYER CUSTOMERS
these connections are critical!
GOVERNMENT EXTENSION

Community *governance*



Use Case current: *Chilli quality assessment*



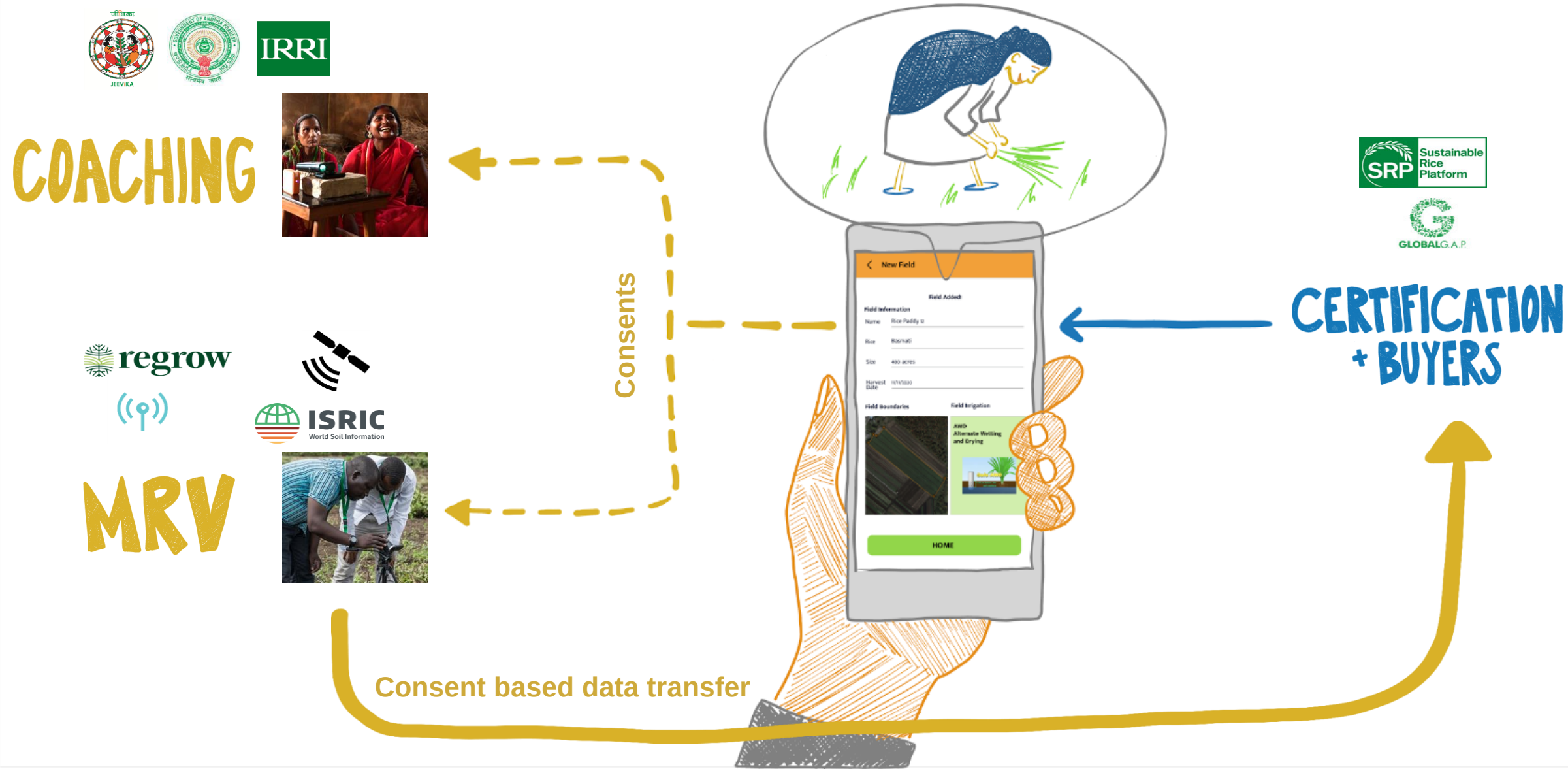
In-person consent collection

Quality certification

Customized advisories via video & IVR

Premium prices from buyers

Consent manager use case



Introduction of keynote speaker 3

Ms. Foteini Zampati

Lawyer and independent consultant on Open Data

Foteini Zampati is a legal professional with over 18 years of experience. She has been working as a data rights research specialist to support the Global Open Data for Agriculture and Nutrition (GODAN) initiative on Ethical and Legal aspects of Open data. She is responsible for the research and analysis of national and international legislation on Open Data and Intellectual Property, ownership issues and data rights, compliance and best practices across all aspects of national and European privacy and security, as also data protection law and regulation (GDPR) in the agricultural sector.

Foteini holds an LLB in Law and a Master Degree in European Union and Business Law.

Open Data in Agriculture

Agricultural codes of conduct, a paradigm of fairer data governance

Foteini Zampati
E-Mail: foteini.zampati@godan.info
7 December 2021

Types of data

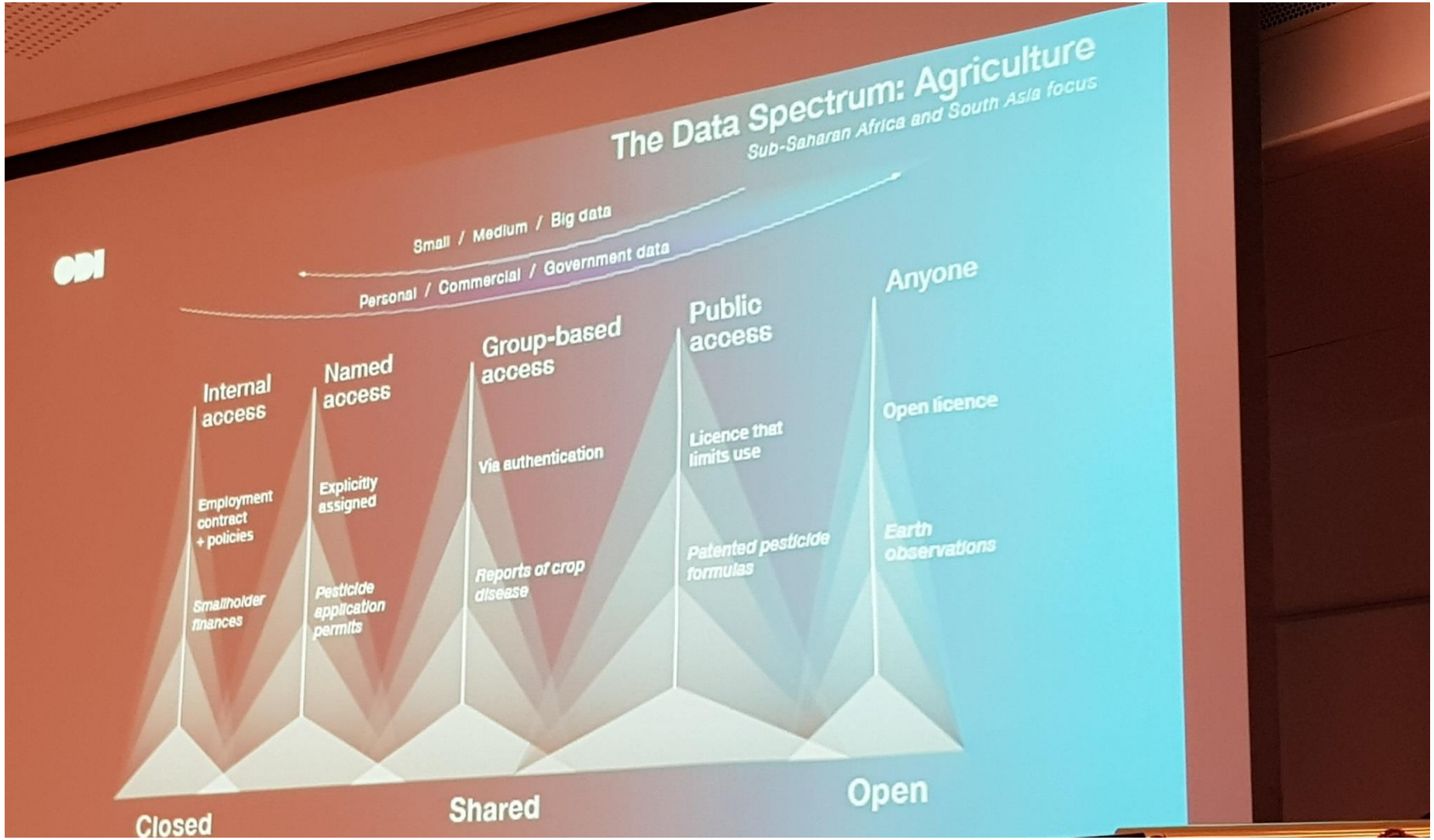
Open data: is data that is available for anyone to access, use and share. It is published under an open licence that allows it to be used for any purpose.

Some data cannot be made open, because it may contain sensitive information about individuals or groups. But it may still be possible to share that data with specific organisations, so long as there are appropriate safeguards in place.

Shared data: is data that is only available to certain people or groups, such as researchers. Data that is shared will typically be made available for specific purposes that are defined by a data sharing agreement.

Closed data: is data that is held privately within an organisation, such as employment contracts and policies or sales reports.

The Data Spectrum in Agriculture-Open Data Institute



Source: https://theodi.org/about-the-odi/the-data-spectrum/

Open Data Initiatives and Policy examples worldwide and specifically in Africa

The Open Government Partnership (OGP)	The Organisation for Economic Cooperation and Development (OECD)	The Open Data Charter	The Global Open Data For Agriculture and Nutrition (GODAN)
Food and Agriculture Organisation of the United Nations (FAO)	World Trade Organisation	Open Up Guide for Agriculture(Ag Pack) launched by GODAN-Open Data Charter	Open Data for Africa
Nairobi Declaration	The Edo State Government in Nigeria	Kenya Open Data Portal (KILIMO)	Ghana Open Data Portal

What rights exist

Personal Privacy - Confidential Information

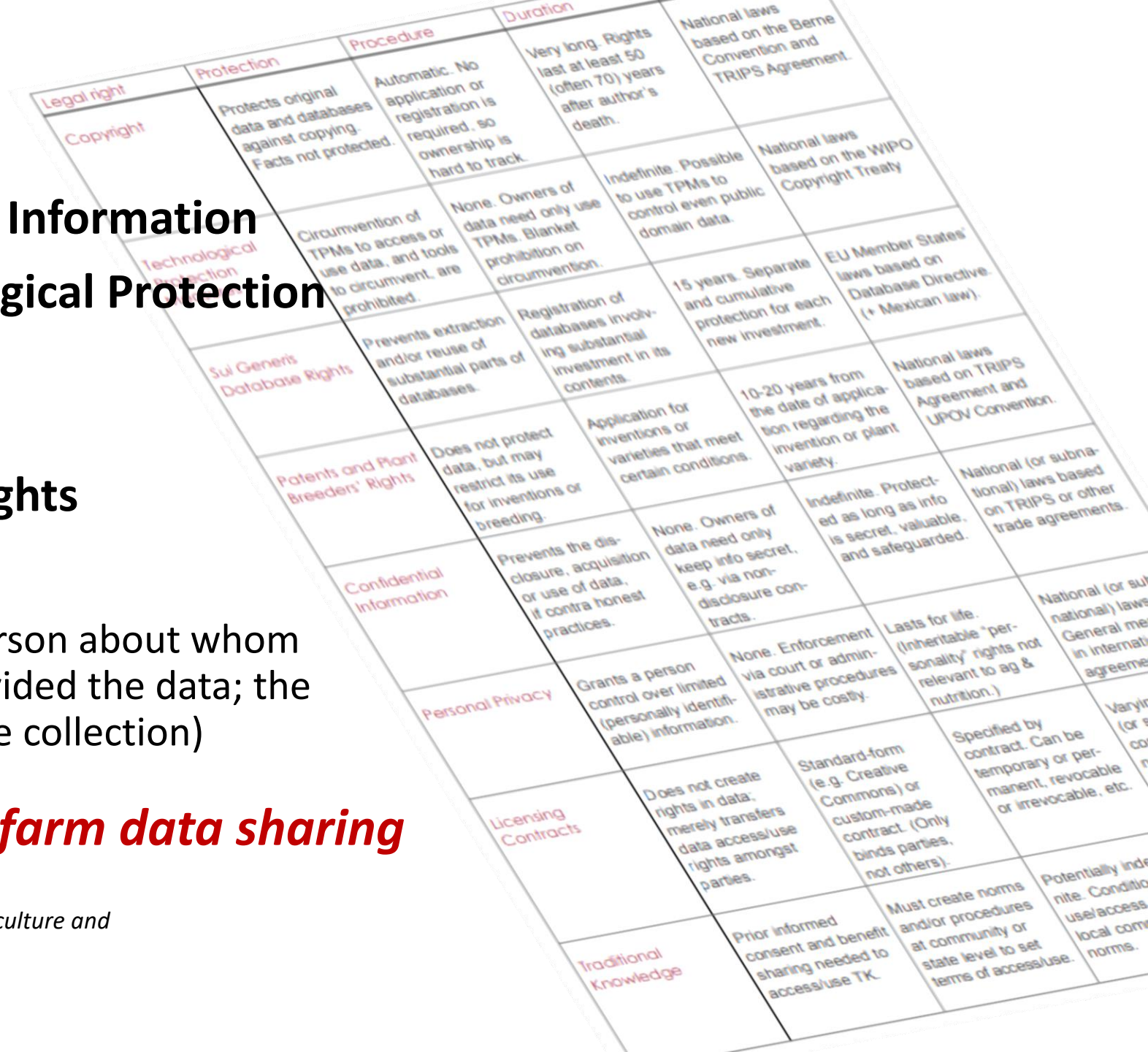
Copyright - Licenses - Technological Protection Measures

Sui Generis Database Rights

Patents and Plant Breeders' Rights

Traditional Knowledge

Who exercises the right? (e.g. the person about whom data pertains, the person who provided the data; the entity that made investments in the collection)



Legal right	Protection	Procedure	Duration	
Copyright	Protects original data and databases against copying. Facts not protected.	Automatic. No application or registration is required, so ownership is hard to track.	Very long. Rights last at least 50 (often 70) years after author's death.	National laws based on the Berne Convention and TRIPS Agreement.
Technological protection measures	Circumvention of TPMs to access or use data, and tools to circumvent, are prohibited.	None. Owners of data need only use TPMs. Blanket prohibition on circumvention.	Indefinite. Possible to use TPMs to control even public domain data.	National laws based on the WIPO Copyright Treaty
Sui Generis Database Rights	Prevents extraction and/or reuse of substantial parts of databases.	Registration of databases involving substantial investment in its contents.	15 years. Separate and cumulative protection for each new investment.	EU Member States' laws based on Database Directive. (+ Mexican law).
Patents and Plant Breeders' Rights	Does not protect data, but may restrict its use for inventions or breeding.	Application for inventions or varieties that meet certain conditions.	10-20 years from the date of application regarding the invention or plant variety.	National laws based on TRIPS Agreement and UPOV Convention.
Confidential Information	Prevents the disclosure, acquisition or use of data, if contra honest practices.	None. Owners of data need only keep info secret, e.g. via non-disclosure contracts.	Indefinite. Protected as long as info is secret, valuable, and safeguarded.	National (or subnational) laws based on TRIPS or other trade agreements.
Personal Privacy	Grants a person control over limited (personally identifiable) information.	None. Enforcement via court or administrative procedures may be costly.	Lasts for life. (Inheritable "personality" rights not relevant to ag & nutrition.)	National (or sub-national) laws. General me... in internati... agreeme...
Licensing Contracts	Does not create rights in data, merely transfers data access/use rights amongst parties.	Standard-form (e.g. Creative Commons) or custom-made contract. (Only binds parties, not others).	Specified by contract. Can be temporary or permanent, revocable or irrevocable, etc.	Varyin... (or s... co... n...
Traditional Knowledge	Prior informed consent and benefit sharing needed to access/use TK.	Must create norms and/or procedures at community or state level to set terms of access/use.	Potentially inde... nite. Conditio... use/access ... local com... norms.	

No clear legal framework for farm data sharing

de Beer J. Ownership of Open Data: Governance Options for Agriculture and Nutrition [version 1; not peer reviewed]. F1000Research 2017.
https://f1000research.com/documents/6-1002

Why Codes of Conduct

- **Trust**
- **Normative gaps**
- **Simplifying the assessment of behaviours**
- **Awareness building**
- **Participation and inclusiveness**

Sanderson, J., Wiseman, L., Poncini, S. What's behind the ag-data logo? An examination of voluntary agricultural-data codes of practice. In: International Journal of Rural Law and Policy, no. 1 (2018)

Ag Codes of conduct

Farmers and agri-businesses are more than willing to share data with each other and engage in a more open data mind set if the potential benefits and risks are made clear and they can trust that these issues are settled in a proper and fair way through contractual agreements

1. EU Code of Conduct on Agricultural Data Sharing by Contractual Agreement (2018)

https://copa-cogeca.eu/img/user/files/EU%20CODE/EU_Code_2018_web_version.pdf

2. American Farm Bureau Federation's Privacy and Security Principles for Farm (2014)
https://www.fb.org/issues/technology/data-privacy/privacy-and-security-principles-for-farm-data

3. New Zealand Farm Data Code of Practice (2014)

www.farmdatacode.org.nz/wp-content/uploads/2016/03/Farm-Data-Code-of-Practice-Version-1.1_lowres_singles.pdf

4. Australian Farm Data Code by the National Farmers Federation of Australia (2020)

https://nff.org.au/programs/australian-farm-data-code/

Certification/compliance tools

American Farm Bureau Federations' privacy and Security Principles

- The Ag Data Transparent seal of approval is to recognize that technology companies follow the core principles in their agreements with farmers.
- To become certified the participants must answer 10 questions about collection and usage of ag data.
- The Ag Data Transparent organisation, operated by the Janzen Ag Law

New Zealand Farm Data Code of Practice

- Self audit-statutory declaration-review panel assessment by Farm Data Accreditation Ltd
- If companies' application is approved then they receive an annual license and certificate as well as the FZ Farm Data Code trade mark to use.

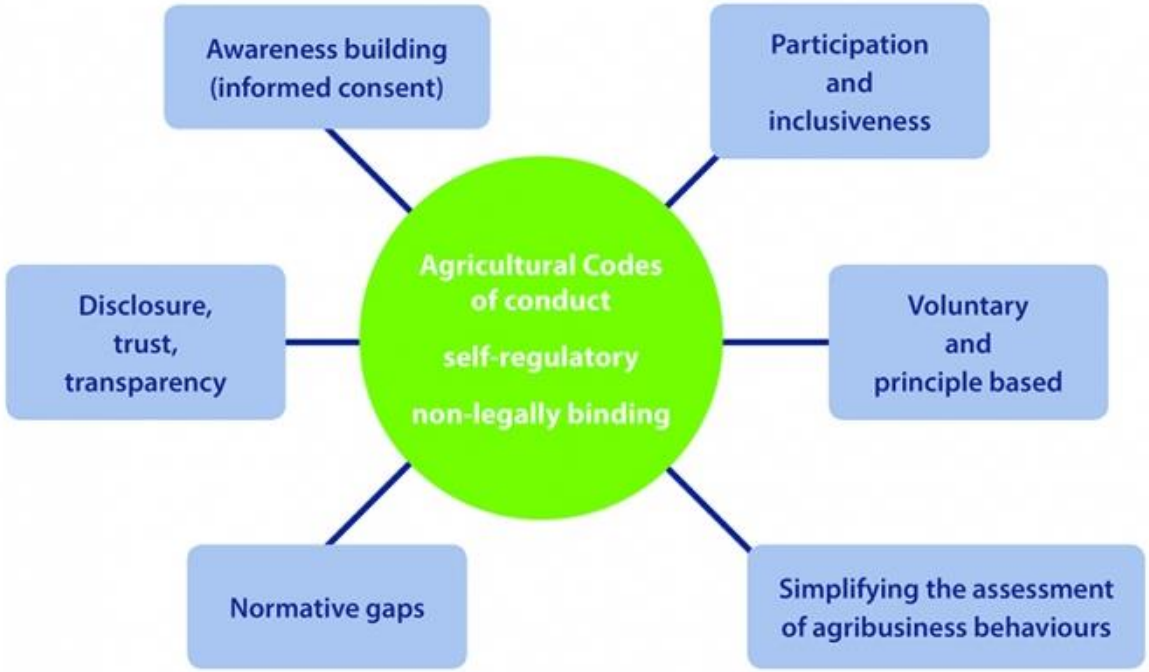
EU Code of Conduct on Agricultural Data Sharing by Contractual Agreement

- No certification scheme-only a checklist with 10 questions

Data Certification Schemes

- Can develop transparency and trust around data uses.
- Can enhance trust because producers can be certain that an independent authority has evaluated the provider's practices and accredited them worthy of certification.

Ag codes of conduct



- These codes cover central issues such as terminology, data ownership, data rights (right to access, data portability, and the right to erasure/right to be forgotten), privacy issues, security, consent, disclosure and transparency.
- In addition, they all attempt to harness the benefits of agricultural data while protecting producers' privacy and security.
- While they are not legally binding and rely on self-regulation, these codes are building awareness around the importance of transparency in agricultural data flows, changing the way agribusiness views data and making data producers (primarily farmers) more aware of their rights.

Challenges

- **Possible overlap or even conflict with existing legislation**
- **Who is in the best position to design, implement and administer the ag-data code**
- **Ensuring adequate adoption (and enforcement?)**
- **Legitimacy**
- **Credibility**
- **Risk of watering down the principles**

Important aspects for success

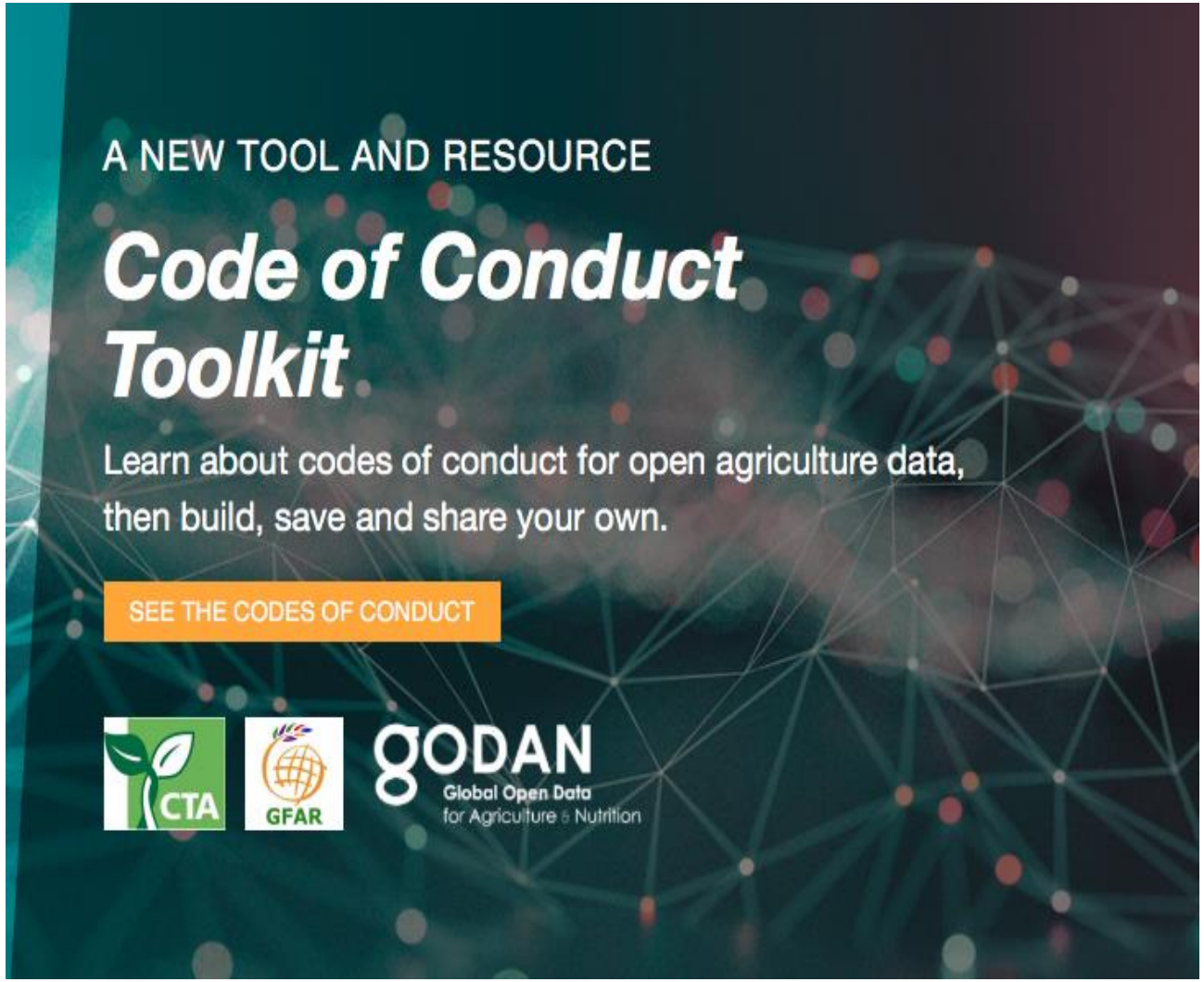
- Effectiveness
- Adoption
- Balance between attraction and high standards
- Credibility
- Clear direction
- Representation and inclusiveness
- Independence and external auditing
- Alignment with the broader ag-data normative framework
- Farmers' perspective
- Roles of stakeholders
- Scope and content

GODAN/CTA/GFAR toolkit on codes of conduct

- A CTA working paper on “Review of existing codes of conduct, voluntary guidelines and principles relevant for farm data sharing” was produced as a result of the GODAN/CTA sub-group on codes of conduct (https://cgspace.cgiar.org/bitstream/handle/10568/106587/2113_PDF.pdf?sequence=1&isAllowed=y)

- May 2020 the launch of the **GODAN/CTA/GFAR online tool on codes of conduct** where everyone can learn about the codes of conduct for open agriculture data, then build, save and share their own

- Development of a general, scalable and customizable code of conduct template that addresses the needs of all actors in the agricultural data ecosystem



Learn more about this tool at
https://www.godan.info/codes

GODAN/CTA/GFAR toolkit on codes of conduct

The tool features the following clauses from which the users should be able to select a clause if they think it is relevant and proceed to a checkout where the selected clauses can be used as an output to a document.
These clauses are not intended to be exhaustive and are no substitute for a robust institutional framework to guide and operationalize decision making concerning privacy, ethics.

1. Definitions
2. Ability to control and access
3. Consent for collection, access, control
4. Purpose Limitation
5. Notice
6. Transparency and Consistency
7. Rights of the Data Originator
8. Right to Benefit
9. Disclosure, use and sale limitation
10. Data retention and availability
11. Contract Termination
12. Unlawful or anti-competitive activites
13. Data protection safeguards
14. Liability and Protection of IP rights
15. Simple and Understandable Contracts
16. Certification Schemes
17. Compliance with National and International Laws

Get involved!

Join us and contribute to GODAN's efforts worldwide

We welcome your ideas and contributions

Data Rights and Responsible Data Working Group

https://www.godan.info/working-groups/data-rights-and-responsible-data-working-group-0

Sub-group on codes of conduct

https://www.godan.info/working-groups/sub-group-data-codes-conduct


Спасибо
Gracias
شكرا
Obrigado
Спасибо
Dank U
Grazie
Ευχαριστώ
Danke
Merci
Obrigado
Diolch
Thank You
Ngiyabonga
Dank U
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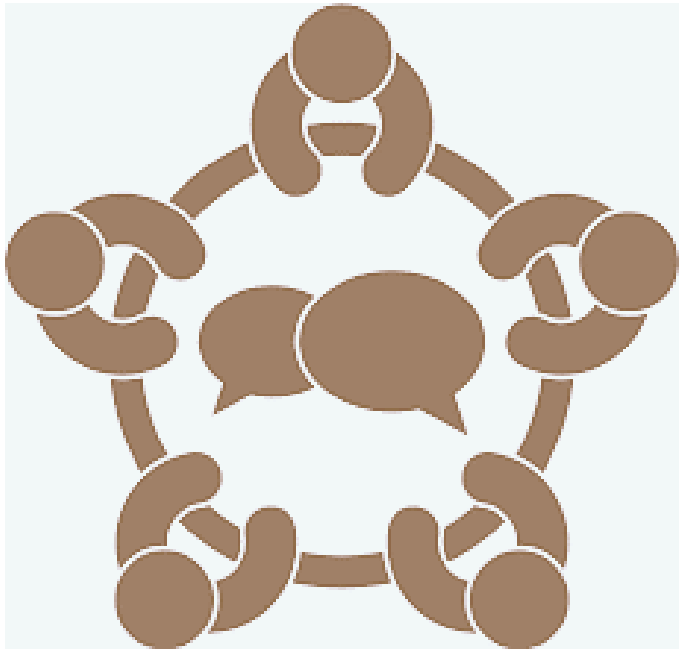
You
Merci
Tack
Ευχαριστώ
Dziękuję
Dziękuję
Danke
Grazie
תודה
Diolch
Dank
U
Diolch
Terima Kasih
Grazie
Tack
Tack
Ευχαριστώ
Diolch
Gracias
Merci
תודה

Discussion

- What do you take away from the inputs today?
- Challenges and opportunities related to data in your day-to-day work?
- How to achieve „informed consent“?



- Que retirez-vous des contributions ?
- Défis et opportunités liés aux données dans votre travail quotidien ?
- Avez-vous d'autres expériences à partager ?

We thank our speakers for their contributions!

1 **Mr. Jean Brice Tetka**,
Advisor, openIMIS initiative, GIZ
jean.tetka@giz.de

2 **Mr. Vineet Singh**,
Platform Architect, Digital Green
vineet@digitalgreen.org

3 **Ms Foteini Zampati**,
Lawyer & Independent Consultant on Open Data
foteini.zampati@godan.info

Our upcoming Agribusiness Expert Talks!

Let us stay in touch!

➲ Yes, return on Your investments in agricultural extension can be determined!	*20.01.2022 (tbc)*
➲ Winning future with agribusiness? Policy tools for employment and growth in African Agribusiness.	*04.02.2022 (tbc)*

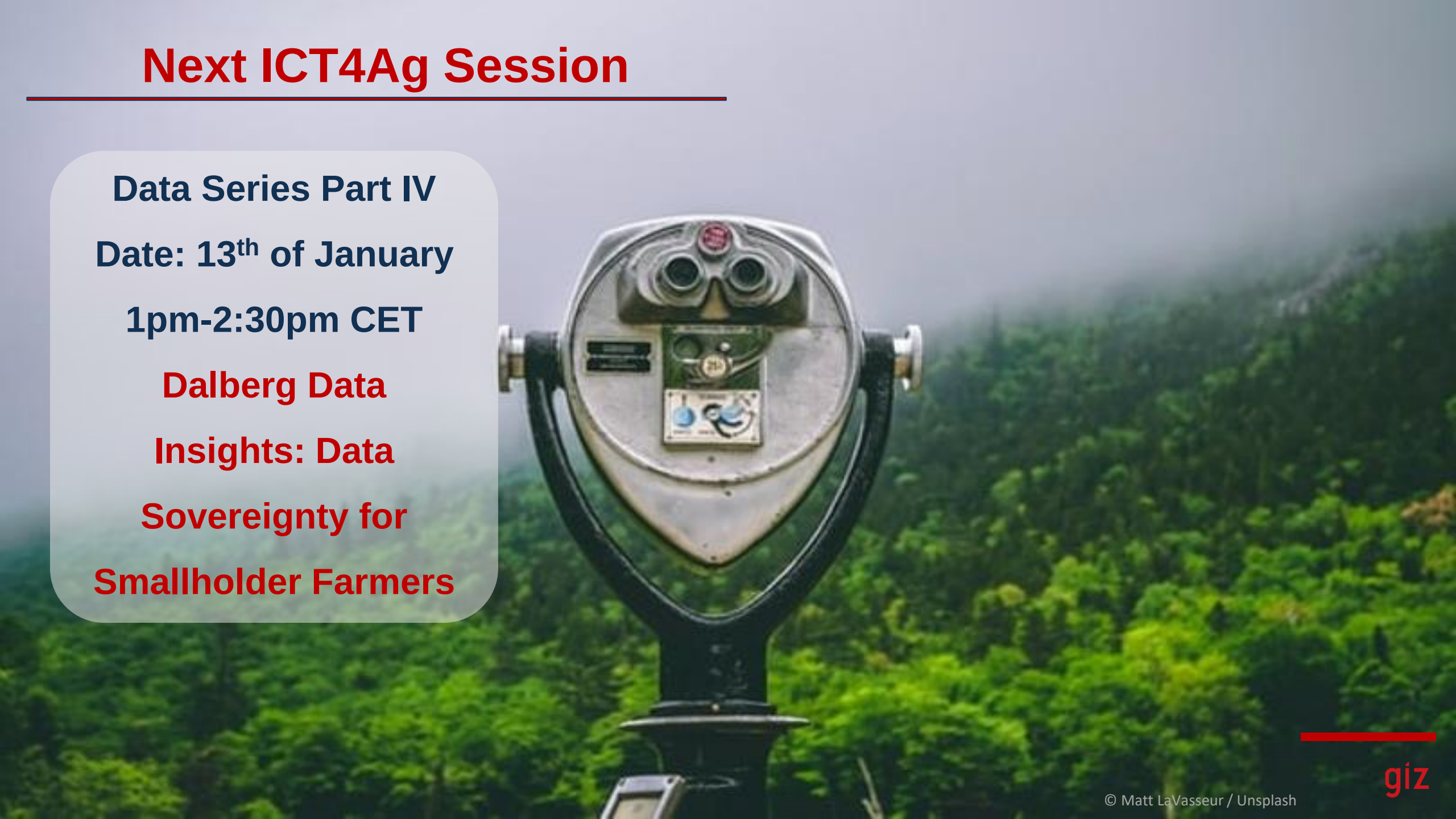
Next ICT4Ag Session

Data Series Part IV

Date: 13th of January

1pm-2:30pm CET

Dalberg Data Insights: Data Sovereignty for Smallholder Farmers



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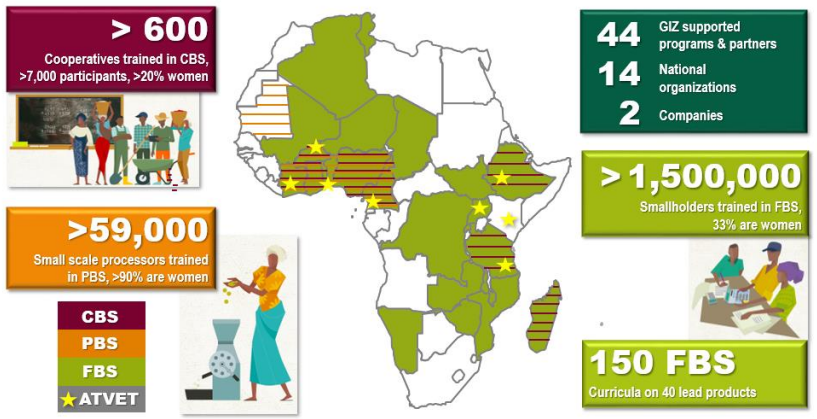
Agri-Business Facility for Africa

60 partners in 25 member states of AU

- Development programs (diff. donors)
- African national and regional institutions incl. AUDA-NEPAD
- Companies

- **01/2020 - 05/2023**
- **6.3 Mio EUR (BMZ)**
- **11 Advisors**



Objective: Better cost-effectiveness and scaling of measures provided by development programs, private and public entities to African agribusiness MSME

Advice upon request in the following areas:

Agri-Business Facility for Africa

- Adaptation and management of tried-and-tested agribusiness trainings for large scale delivery in line with needs, commissions, strategies and sustainability requirements
- Upgrading of selected ATVET institutions to qualify students and professionals in tried-and-tested agribusiness approaches
- Innovative approaches: Investment analysis, digital media & apps, African expert networks for South-South cooperation, capacity development and knowledge management incl. tutored and self-tutored e-learning

Contact – Agribusiness Facility for Africa

Dr. Annemarie Matthess

Head of Project
Agribusiness Facility for Africa (ABF)

annemarie.matthess@giz.de

Veronika Kling

Head of component
Agribusiness Facility for Africa (ABF)

veronika.kling@giz.de

Simon Striegel

Advisor Innovative Tools and Media
Agribusiness Facility for Africa (ABF)

simon.striegel@giz.de

www.giz.de

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... a place for exchange and learning on digitalisation and agriculture
... a vehicle for GIZ's digital by default approach and BMZ's framework for digitalisation in agriculture
... a network for strategic orientation and collegial learning

We offer different types of events:

SPOTLIGHT-ON

You have found a successful solution and would like to share it with interested colleagues?

50% PRESENTATION 50% DISCUSSION

BIRDS-VIEW

We do a joint deep-dive from the meta-level down to exchange of views on strategic issues

100% STRATEGY

HANDS-ON

You have a question and wish for collegial advice and knowledge exchange?

20% INPUT 80% OUTPUT

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Thanks a lot and we hope to stay in touch!

ICT4AG ···
Wissensmanagement und Austausch zu digitalen Lösungen

Lars Kahnert
Advisor, Initiative for Sustainable Agricultural Supply Chains (INA)

lars.kahnert@giz.de

Johanna Braun
Advisor, Fund to promote Innovation in Agriculture

johanna.braun@giz.de

Corinna Peters
Junior Advisor, Sector Project Agriculture

corinna.peters@giz.de

Klaas Grimmelmann
Advisor, Programm Agricultural Policy and Food Security

klaas.grimmelmann@giz.de

www.giz.de

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