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# Promoting Transparency and Information Sharing along Agricultural Supply Chains - Insights of WeTrace Implementation in Sub-Saharan Africa and Asia

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## Agenda for this session

- Introduction of KIAG and the WeTrace application (15 min)
- Plug&Play Live Demonstration of WeTrace (5 min)
- Lessons learned and take aways (10 min)
- Q&A/Discussion (10 min)



# Knowledge Intelligence Applications GmbH (KIAG)

- Founded in 1999, KIAG is a company bringing together competencies in I(C)T, training, processes and different vertical markets
  - Our customers operate in supply chains, international cooperation and agricultural production in Africa and Asia
- When we build I(C)T-based solutions we either
  - start with a green field approach providing the system with all source codes or
  - base ourselves onto in-house frameworks or
  - use other existing software (OpenSource or commercial)
- Our in-house frameworks include
  - Web-based knowledge portals
  - **WeTrace data gathering and analysis framework**
  - Interfaces for mobile apps

## Our customers



Mercedes-Benz



we trace projects worldwide

KIAG  
Transparency first



WeTrace builds a bridge between producers, their value chain partners, the information and data they need and the improvements they want to achieve. WeTrace comprises consultancy, training and IT-based services for the whole process of value chain development and operation:

## Key applications of WeTrace in agricultural value chains:

- Mobile companion for data collection, management and analytics
- Blended learning to bridge between classroom trainings and field activity
- Crop cycle and input management (GIS-based)
- QR-code based traceability system with full transparency for the entire value chain
- Market-information systems
- Weather and other sensor data (GIS-based)
- (Automated) messaging and improved communication
- Forecasting of hazards (weather, pests)



# Special features of WeTrace

- **Fully customizable**  
adaptable to different crops, countries and languages
- **Off- and online usage**  
allowing for data capture in remote areas with no or low connectivity
- **Integrated data quality checks**
- **Full data security**  
Data is stored **confidentially, securely and according to applicable data privacy standard** with fully customizable access rights according to regional or organizational structure and groups of data
- **Intuitive and inclusive design**
- **Relevant reporting**  
for all members of the value chain - integrated in WeTrace or using external software



# we trace – an interactive learning tool for farmers

Let's learn – What is important to know about this topic?

Watch the video to learn how to properly prepare a plate for seeding:

Once the plate is properly prepared, it is ready for seeding.

Innovations

Innovation 1 (à remplacer par le titre de la vidéo)

Dominiks Vegetabl... Hygiene and Safety

**Test your knowledge**

Answer all questions to find out how good your knowledge is.

**Take the test**

**Learn the answers**

To refresh your knowledge, you can read all the questions and check your answers before taking the test.

1. Hygiene and safety instructions and signs
2. First step to improve personal hygiene on a farm
3. Hand washing best practice
4. Animal and pest control on a farm
5. Signs of illnesses
6. Hygiene and safety basic rules
7. First aid kit contents
8. Hygiene in post-harvest processes
9. Hand washing facilities

Dominiks Vegetabl... Hygiene signs

The first and easiest step to take for better hygiene conditions is to have good instructions and visible and clear signs on hygiene and safety to teach people what they can do for better hygiene and constantly remind them to follow the necessary routines. In order to help all people on the farm the signs need to be kept in easily readable condition:

- affixed in a height where everyone can read them fine,
- clean and not covered,
- in places where they make sense and remind the farmer and his/her family and workers to follow the instructions before handling the food products or the chemicals.

See here some example for good hygiene and safety instruction signs:

This is a food production area  
Protective clothing must be worn  
Wash your hands before commencing work

Example from: <http://www.hi-litesigns.com/acatalog/4285.jpg>

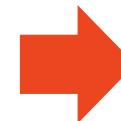
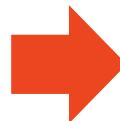
Wash hands before handling food

Example from: <http://www.tcob.co.uk/hyg13.htm>

# We trace based traceability for full transparency

KIAG  
Transparency first

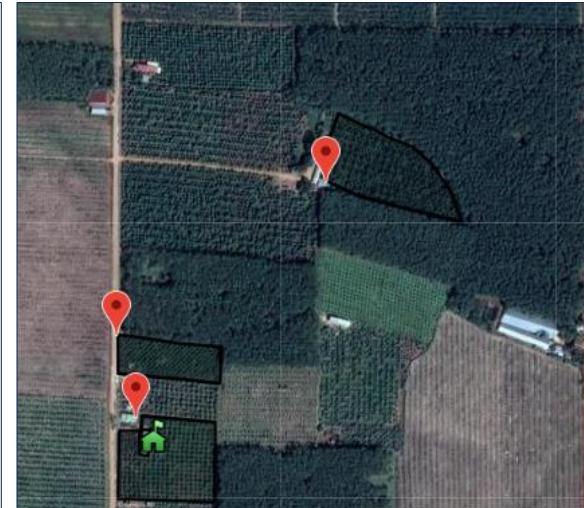
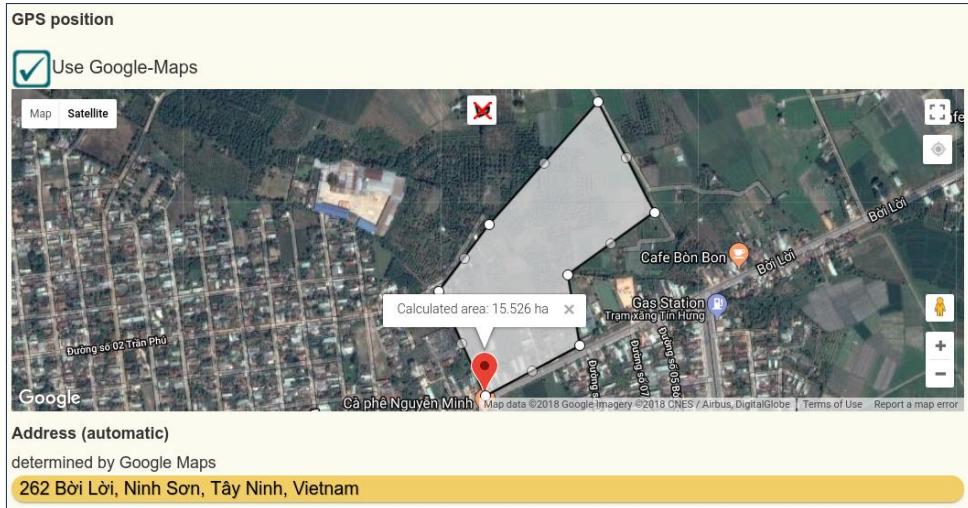
- From the farm to the fork
- Transparency for consumers in Vietnam



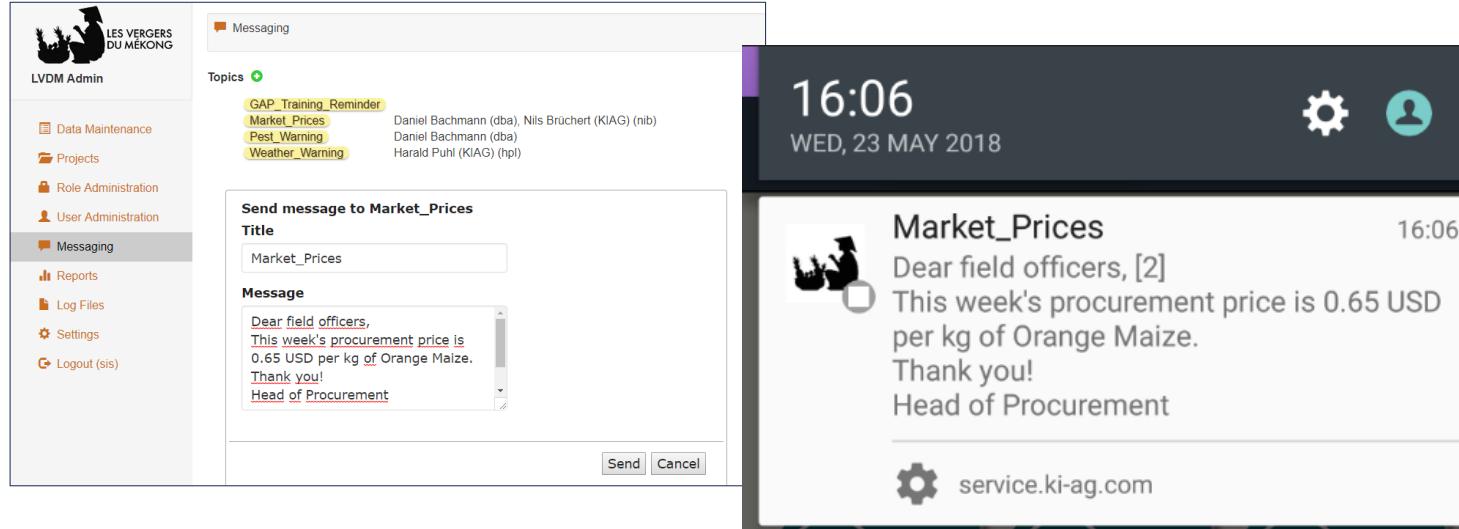
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# we trace geodata and GIS



# we trace messaging and communication



The screenshot shows a messaging interface. On the left, a sidebar for 'LVDM Admin' includes links for Data Maintenance, Projects, Role Administration, User Administration, and Messaging. The Messaging section is selected. A list of topics is shown, with 'Market\_Prices' highlighted. A modal window titled 'Messaging' shows a message being sent to 'Market\_Prices'. The message title is 'Market\_Prices' and the message content is:

Dear field officers,  
This week's procurement price is 0.65 USD per kg of Orange Maize.  
Thank you!  
Head of Procurement

The message is timestamped at 16:06 on WED, 23 MAY 2018. The recipient information is also visible.

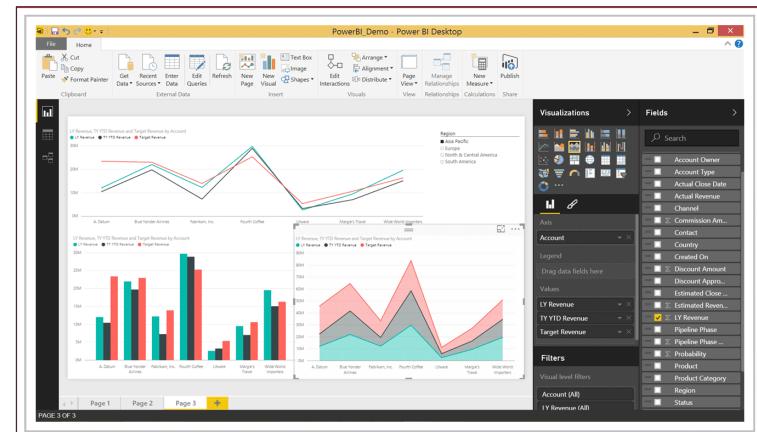
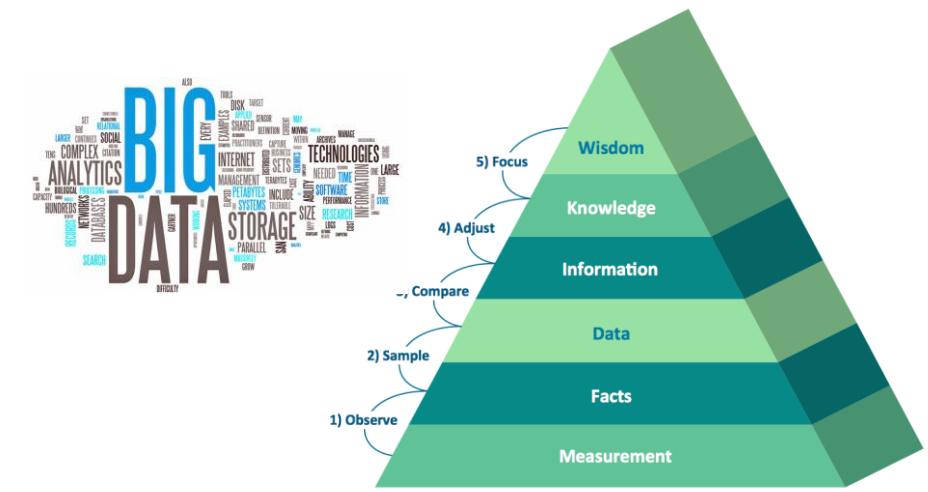
```
#####
### Others used in store
### Farm (Nông trại)
Farm Name (Tên nông trại): OR-HG-QUOC
Farm Region: Việt Nam
Farm Operator: Nguyen Kinh Chi Quoc
Farm Owner: Nguyen Kinh Chi Quoc
Purchase Date: 2019-02-12
Resource Type: Fertilizer
Reporting (người báo cáo) : quoc28
Reported at (Thời điểm báo cáo) : 2019-02-12 08:54:03

### Product (Sản phẩm)
Product (Tên sản phẩm): Phân Bò tự ủ
Formula: <Empty>
```

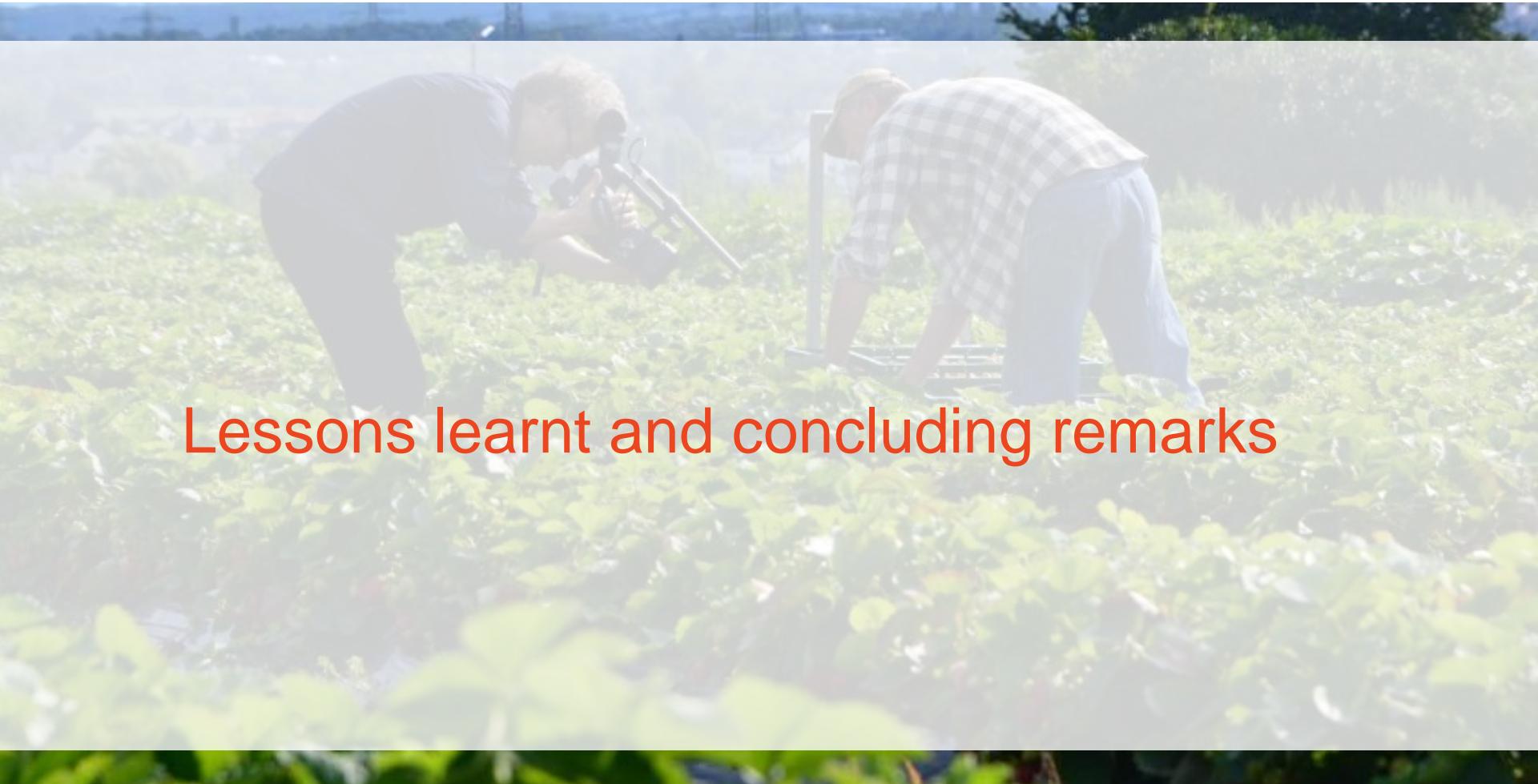
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# We trace reporting facilities

- Reports within WeTrace or generated through external software (e.g. PowerBI) provide information to:
  - Producers/farmers
  - Local and international value chain stakeholders, including public institutions and certification bodies
- Data can be aggregated and analysed following a business intelligence logic
- Reports paint a picture of the what, when, how etc. (transforming data into knowledge and wisdom)



# Live-Presentation of *we*trace

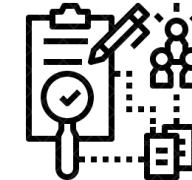


## Lessons learnt and concluding remarks

# Possible areas of partnership

- **Field studies**

Establish IT-based framework for data collection and analysis



- **Traceability solutions**

Provide traceability from the farm to the fork (e.g. with QR-codes)



- **Knowledge platforms**

Web-based multi-media and live-feed data access for different stakeholder groups



- **M&E and data management**

Integrate data in standardized multi-layer architectures and provide data analysis (BI)



# Cooperation models

- **Short-term consultancies**  
e.g. for configuration of surveys, process analysis, establishment of requirement documentation, configuration of OpenSource components
- **Fully commercial long-term cooperation**  
with traders, cooperatives and exporters
- **Establishing partnerships**  
joint implementation with local service providers and IT-firms
- **PPP with local partners**  
co-funded through the develoPPP.de facility by the German public sector

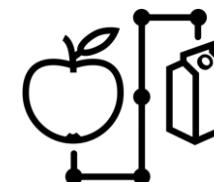


## Lessons learned from WeTrace implementation

- Commercially- and export-oriented small-scale producers, cooperatives and traders see the value of ICT and traceability
- ICT requirements may differ substantially depending on gender, age and commodities grown by beneficiaries
- Pictures, audio and video are largely preferred over printed information
- Quick benefits are crucial for long-term success
- Small-scale producers need backstopping and close oversight for data collection
- Data gathering and analysis in development projects is often based on old-fashioned processes rather than streamlined and integrated ICT-based systems
- There is often no provisioning in projects for recurrent cost regarding ICT solutions. This is an absolute show stopper!

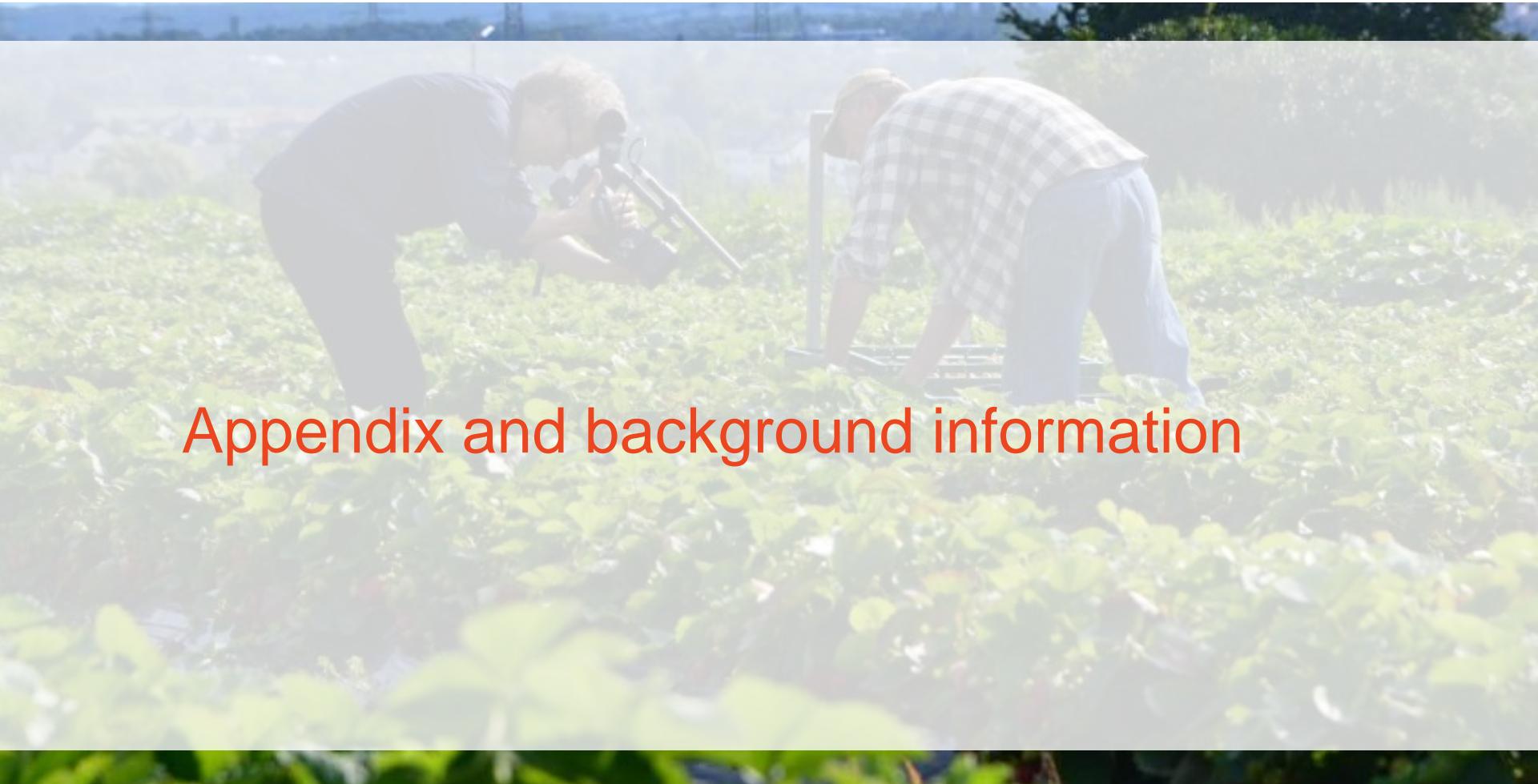
# Key Take Aways

- ICT along agricultural supply chains and in data analytics can make life much easier for everyone involved!
- If implemented appropriately, ICT can help achieve development (and business) goals
- The enabling environment for ICT will continue to improve (connectivity, devices, legal context etc.)
- Our vision: The value chain of the future is transparent



**Thank you very much for your attention!**  
**Je vous remercie de votre attention!**  
**Weebale Nnyo!**

- Get in touch with us or request a WeTrace demo at [sustain@ki-ag.com](mailto:sustain@ki-ag.com)
- Learn more on [www.ki-ag.com](http://www.ki-ag.com)

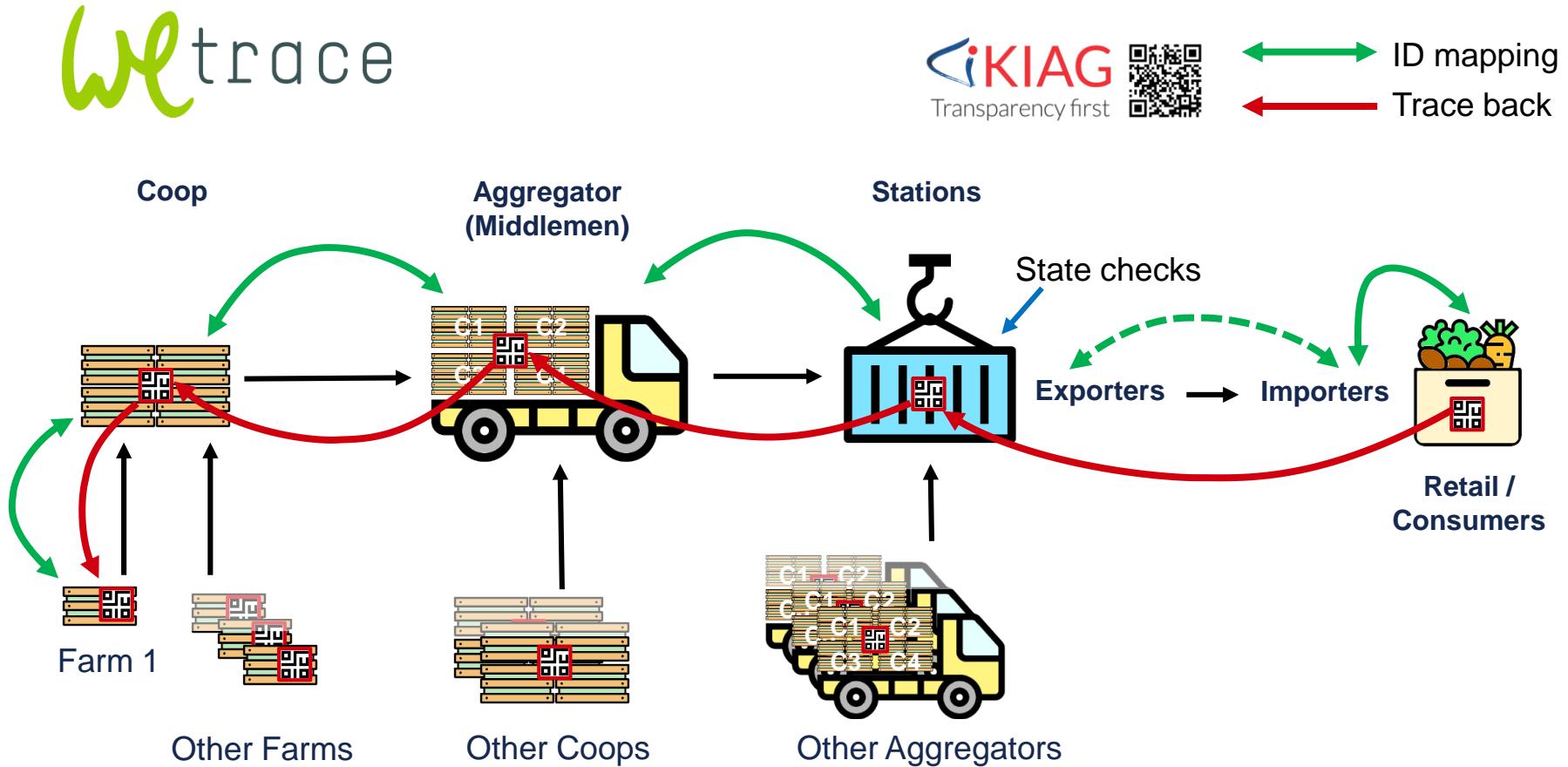


## Appendix and background information

# Pricing models for WeTrace

- **Option 1: WeTrace ,Open Source‘**
  - One-time cost
    - Build and configuration (depending on complexity/effort)
  - Periodic cost
    - No cost if fully implemented by partner
    - Optional cost on time&material basis if services are requested from KIAG
- **Option 2: WeTrace ,Software as a Service‘ (SaaS)**
  - One-time cost
    - Build and configuration (depending on complexity/effort)
  - Periodic cost (examples)
    - semi-commercial farming in Ghana: 1.1 € per farmer per year
    - fully-commercial export-oriented farming in Ghana: 0.01 € per Mango

# Traceability in the WeTrace framework



# we trace benefits for farmers

- Individual farmer reports provide deeper insights into cost drivers, turnover and profits - in total and per land unit or tree
  - Farm data enable access to services (inputs, credit)
- Better information on market prices and weather
- Easier knowledge uptake based on blended learning instruments
- Farmers understand how they perform compared to peers and learn from each other
- Farmers can optimize their farm practices and investment
- Corrective actions help to address and follow up on individual farm issues, ultimately paving the way for sustainability and certification



Photos: Copyright GIZ

# We trace benefits for implementing organizations

- Improved organization-level data and reporting with detailed supply chain analysis
- Optional cluster analysis of data to optimize service delivery to different segments of farmers
- More effective communication channel with producers
- Return-on-investment analyses of (project) interventions (e.g. input packages, training)
- Understand the relation between farming practices (pruning, weeding, etc.), input use and yield or income
- Insight into farmer loyalty (comparing recorded/potential production with deliveries)
- Build strong consumer and retail markets based on IT-based traceability



# WeTrace – A few insights into implementation



WeTrace is supporting producers in many segments of the agricultural sector in different countries in various crop sectors, amongst the following:

- **High-value fruit producers** associated with the company **Les Vergers Du Mekong (LVDM) in Vietnam** document and improve their compliance with good agricultural practices with the help of WeTrace to allow for EU export. The solution includes an ‘input store’ which tracks input orders (allowing for the flagging of forbidden substances)
- **Study on ICT requirements in Mali** of different agricultural value chains in the **the Green Innovation Centre (GIZ/AFC)**
- Operation of a QR-code based **traceability system** for high-value crops in the **Tay Ninh province** in Vietnam
- For **coffee producers in Vietnam** (and soon to be in Kenya/Brazil) under the framework of the **Global Coffee Platform**, WeTrace provides advisory services, **GIS mapping** and an IT-solution to document and analyse production processes, requirements for **extension services** and compliance with national sustainability curricula
- **Small-scale farmers in Togo** supported by the **Green Innovation Centre (GIZ/GFA)** are benefitting from a **market information system** which provides real-time information on prices paid at local markets

