Digital innovations for OneWorld without Hunger: GIZ approach and instruments

Presenting different pathways to identify, promote and fund innovative digital concepts, ideas and tools in sustainable rural development

What’s Cooking? Webinar by World Bank Group | May 27, 2021
Sector Project Agriculture: Setting the Scene

Dr. Heike Hoeffler, Project Manager
Potentials for Digitalization in Agriculture for Development

- Network + Exchange
- Land rights
- Financial services
- Reducing inequalities
- Education (e.g. good agricultural practices)
- Living Incomes
- Traceability Systems
- Sustainability of agricultural commodities
- Job creation and promotion of entrepreneurship
- Access to innovations
- Information gathering on challenges in the agricultural sector
- Participation of smallholder farmers in decision-making processes
- Data management
- Monitoring
- Data aggregation platforms
- Information and knowledge management
- Monitoring
- Living Incomes
- Traceability Systems
- Sustainability of agricultural commodities
- Job creation and promotion of entrepreneurship
SEWOH – Special Initiative ONE WORLD no Hunger

• Started in 2014 by The German Federal Ministry for Economic Cooperation and Development (BMZ)
• BMZ invests around 1.5 billion euros annually in activities on food security and rural development, a third of this budget goes into SEWOH
Digitalization Portfolio: SEWOH
21 agricultural projects implementing or planning 259 digital measures

Target groups:
- rural farming population
- partners
- intermediaries

- Monitoring & Data Analysis, 21%
- Financial Services (3%)
- Supply Chain Management (7%)
- Market Connectivity (12%)
- Advisory and Information Services (46%)
- Other (11%)
Reference Framework for Digitalization in Agriculture

Overarching goal
The rural farming population seizes the opportunities of digitalization and deals responsibly with its risks in order to operate in an economically, ecologically and socially sustainable manner.

Strategic goals
1 – The rural farming population and relevant partners have *digital skills*.
2 – The rural farming population and relevant partners have *low-threshold access* to digital data, services and applications.
3 – *Legal frameworks* promote the development of digitalization in agriculture and protect the rural farming population from the associated risks.

Areas of Action:
1. Education, training and advisory services
2. Policy advice and policy development
3. Promotion of analysis, evaluation and innovation
G500 INFORMS ON

ICT4AG NETWORK

Agriculture, IT, Know-How and lots of fun

We are...

... 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?

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

**HANDS-ON**
You have a question and wish for collegial advice and knowledge exchange?

50% PRESENTATION 50% DISCUSSION

100% STRATEGY

20% INPUT 80% OUTPUT
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Fund for the Promotion of Innovation in Agriculture (i4Ag)

Gender-sensitive innovations for a sustainable agri-food sector

Dr. Elke Sümnick-Matthaei, Advisor Digitalization Portfolio
At a glance
Fund for the Promotion of Innovation in Agriculture

Duration: 01/2021 – 08/2026

From brand new to tried and tested
- Scouting
- Competitions
- Call for Tender

Not restricted to a specific region, technology or value chain
- Smallholders
- SMEs along the VC
- Young people and women

Criteria-based evaluation

Innovation Partnerships:
Private sector, NGOs, associations, foundations, research & extension

GIZ approach and instruments

- Digitalization
- Agricultural Research and Extension
- Private Sector Cooperation
- Renewable Energy and Energy Efficiency
- Mechanization
Our mission and what i4Ag aims to achieve

Our mission

• i4Ag promotes gender-sensitive innovations for a sustainable agri-food sector.
• Through innovation partnerships, we identify and support user-centered innovations that will lead to broad, positive impacts in the area of food security through increases in efficiency and productivity.

Impacts:

• Food security
• Increased income and employment
• Climate resilience and natural resource conservation

Innovations contribute to:

• Gender equality
• Partnerships for sustainable development
• Knowledge Sharing
i4Ag Digitalization Portfolio

Types of Innovations
e.g. in the area of:

- supply chain governance and traceability
- smart farming
- digital advisory services
- data governance (data ownership)

Can be both

TECHNICAL
hardware, software

ORGANISATIONAL
business model

TYPES OF INVESTMENTS

- **Prototypes**
  smaller investments with a higher risk/lower Technology Readiness Level (TRL)

- **Flagships**
  higher investments with a lower risk/higher TRL

Gender and Safeguards

- We have a strong preference for gender-transformative approaches
- We are guided by the Principles For Digital Development
Funding requirements

- Non-profit orientation
- Funding amount min. approx. 500,000 EUR
- Regional orientation, i.e. implementation in at least 2 BMZ priority countries
- Thematic areas: mechanization, digitalization, renewable energy, agricultural research and extension, collaboration with the private sector
- Impact in at least 2 of the 3 following areas: (1) food security, (2) employment and income promotion, (3) climate resilience and natural resource protection
- Relevance to development policy, potential for success, feasibility and sustainability
Potential Cooperation between World Bank and i4Ag

Promoting Innovations

- Recommending innovations that are ready for implementation and/or scaling
- Harnessing synergies during implementation
  - Scaling successful innovations
- Enabling institutional digital innovation ecosystems

Strategic Innovation Development

e.g. joint initiatives and financial instruments, agenda setting, staff exchanges

Innovation Acceleration

e.g. Innovation Facilities and Flagships in specific countries

Knowledge Management and Exchange

Lessons learnt, studies, events, conferences
Cooperate with i4Ag!

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ICTs in the Green Innovation Centres for the Agriculture and Food Sector

Dr. Ariane Borgstedt, Programme Manager and Christian Schulze-Koch, Senior Project Manager
Where do we work?
15 Innovation Centres – 21 Value Chains
What is our objective?
Agricultural innovations have contributed to sustainable rural development in selected rural regions.

Our Value Chain Approach: min. 2 VC / max. 4 VC
How do we use ICT in our projects?

- Digitalisation is a cross-sectoral issue anchored in all 15 country packages.
- ICT can be inserted through the whole value chain. They push the economic development and help producers and SME to improve the connection to the markets.
- The Green Innovation Centres support the advice and supply of small-scale agriculture and SME with innovative ICT solutions.
- The Green Innovation Centres apply roundabout 40 different ICT tools along the whole agricultural value chain.
- A cross-country Working Group on ICT was established in Sept. 2018.
ICT- fields of action along the value chain

**AGRICULTURAL VALUE CHAIN**

**BEFORE PRODUCTION**
- Assurance of input quality
- Soil testing

**PRODUCTION**
Consultation services:
- Weather data
- Pest and disease control
- Operations Management

Smart Farming:
- Sharing machines

**AFTER PRODUCTION**
Marketing:
- Digital accounting
- Transparent pricing
- Sale of the products

**Financial Services**: Mobile banking

Networking of different players along the value chain:
Exchange of information and services
ICT Working Group – Cross-Country Learning

- Mutual learning through active South-South exchange
- Evaluation of use cases and assessment of their efficiency, impact and developmental purpose
- Comparison of solution’s context to identify potential for scalability
- Development of individual ICT-Strategies for each country-program
- Networking with other ICT-related projects and organisations, Start-Ups etc.
Examples for ICT solutions
FBS *Innova*
Farmer Business Schools goes digital

• Reaction to limited ability to deliver in-person training programs due to Covid-19

• Digital Android adaptation of the already successful Farmer Business Schools (FBS)

• Developed by Ghanaian startup *AgroInnova*. Farmers get access to FBS tools and information on Covid-19 via their smartphones.

• Targeting 375,000 smallholder farmers via the FBSInnova app

• Roll-out in seven countries: Burkina Faso, Cameroon, Ivory Coast, Mali, Mozambique, Nigeria and Tunisia
Farm Radio International

• Piloted in Nigeria in 2019
• Potential outreach in Plateau State
  Nigeria: 600,000 smallholder farmers
• Interactive radio training-content of GAP
  and business management

• Thanks to success: upscaling of FRI
  programmes to seven other countries:
  Ethiopia, Ivory Coast, Malawi, Mali,
  Zambia, Togo and Mozambique
• More than 30 radio shows in each country
  planned
• Potential outreach: more than a million
  smallholder farmers
In Ghana, the start-up TroTroTractor provides mechanisation services via app to over 5,000 smallholder farmers in the rice and maize value chains.

Machines can be booked via SMS or app from a nearby service provider.

The booked tractors are tracked using GPS to ensure the service is provided. Payment is made via a mobile money account.

Benefit for smallholder farms: affordable access to agricultural machinery and allows machine owners to serve their customers quickly and easily.

Green Innovation Centres are expanding the "mechanization as a service" approach to other countries, such as Benin and Mali.
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Scaling Digital Agriculture Innovations Through Start-ups (SAIS)

Torsten Fischer, Advisor
Digital Innovation in the Agriculture and Food Sector
Opportunity for growth

• The agriculture and food sector has the potential to become the driving force for economic development in Africa

• Innovations are key to for the necessary increase in production and productivity for job and income creation

• Local entrepreneurs and start-ups have the potential to generate momentum in the agriculture and food sector with their digital solutions

• Most start-ups don’t manage to scale their innovation and fully capitalise on the potential of modernising the agricultural sector

• Growing eco system, but most of the accelerators focus on the idea and founding phase
SAIS – Silicon Valley for Africa
Promoting African agritech and foodtech start-ups

Impact logic

By supporting min. 30 growth-stage ag- & foodtech start-ups in Africa,
Through annual investment readiness programmes over 5 years

Making 100,000 additional users adopt the digital solutions; 80% state a positive impact on their income.

OVERALL MISSION GOAL:
Why we are doing this!
Identification and Selection of Start-ups
Our approach

Call for Applications & network sourcing
Internal shortlisting
Virtual Pitch

Final selection of up to 16 startups per cohort

Next Call from July 1st

Jury: SAIS, Corporate Partner, VC Analyst, Tech-Expert and Business Development Expert

GIZ approach and instruments /SAIS
Investment Readiness Programme (IRP)
Company development for up to 16 start-ups per year

- Mentors are assigned
- Pain points and optimisation potential are identified
- Development plans are drawn up
- Topics include: business model, marketing and sales, tech development, financial planning and analysis, team and organisational structure
- Getting prepared for the pitch: Pitch deck optimisation, basics of company valuation and best practices for investor relations

9 months, constant progress monitoring

- Needs Assessment
- Coaching & Mentoring

Events & Check-ins

Kick-off: Getting acquainted and first evaluation
Midterm Check-in: Progress evaluation and adoptions
Demo-Day: Pitch to potential investors & partners
Facts & Figures
SAIS Investment Readiness Programme

**AREAS OF APPLICATION**
*Cohort 2019/20*:
e-commerce, supply chain, precision farming, food delivery.
*Cohort 2020/21* will add: fintech, crowdfunding, animal health, dairy business, and advisory services.

**AFRICAN COUNTRIES**
Start-ups represented in *cohort 2019/20* hail from 8 different African countries. *Cohort 2020/21* will add 4 more countries.

**FEMALE FOUNDERS**
*Cohort 2019/20*: 25% of the start-ups have female co-founders.
*Cohort 2020/21*: Approx. 30% female (co-)founders, additional approx. 15% of the business models are especially geared towards female customers.

**NO OF APPLICANTS**
Approx. 250 applicants for the SAIS programme each year. The acceptance rate for cohort 2019/20 was 4%.
New Partnerships and extension of the program

- Bill and Melinda Gates Foundation with a focus on livestock management
- Extension of the program with added focus on gender and francophone Africa
- **Call for Startups for next Investment Readiness Program from July 1st**
- Follow VC4A.com for updates

**Demo Day for Investors in September 2021**

- Contact sais@giz.de for an invite

**Startup financing**

- Identify and educate additional investors
- Align financial and technical assistance
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Digital Traceability in Agricultural Supply Chains

The INATrace open source solution

Lars Kahnert, Digitalization Advisor in the Program Sustainable Agricultural Supply Chains and Standards
The vision of a data-driven digital supply chain landscape

Input: Data
- Farm Data
- Earth Observation
- Open Data

Comparable Metrics
Standardization
Interoperability
Aggregation
Validation
Analysis
Reporting

Data Governance & Privacy

Output: Services
- Marketplaces
- Finance
- Targeted Advisory Services

GIZ approach and instruments
INATrace

Slide 38 5/27/2021 Digital Traceability in Agricultural Supply Chains
Traceability in Global Agricultural Supply Chains

How can the growing demand for traceability and transparency be translated into added value for farmers and the environment?

- enable living income
- avoid deforestation
- good working conditions
- ....

GIZ approach and instruments

Consumers
Civil Society
Legislators
Businesses

Trust
Transparency
Due Diligence
Risk Mgt
INATrace…

...is a traceability tool for globally traded agricultural commodities,

...enables transparency, control and trust,

...uses blockchain technology, is open source, transferable and adaptable,

...has been successfully implemented with a coffee supply chain out of Rwanda.

The GIZ Sustainable Agricultural Supply Chain Initiative (INA) is an association of private sector, civil society, and political actors with the aim to increase sustainability in global agricultural supply chains and improve the living conditions of smallholder farmers.
Open source blockchain-based traceability solution

- freely usable
- customizable
- transferable
- scalable
- published under open source license
- developed in adherence with the principles for digital development

Design With the User
Understand the Existing Ecosystem
Design for Scale
Build for Sustainability
Be Data Driven

Use Open Standards, Open Data, Open Source, and Open Innovation
Reuse and Improve
Address Privacy & Security
Be Collaborative
What does INATrace offer?

- Captures all process steps and transactions from farmer to end product
- Transaction data and payments are stored in the backend
- Two-party verification system
- Blockchain Technology: Hyperledger Fabric
- Individual QR-Codes
- Provenance
- Flow of value share
- Quality
- Producer Stories
- Feedback
“This system is great, it helps us to know all the information regarding our coffee and facilitates our job.”

Trainee at Koakaka Cooperative
INATrace is globally applicable.....

...and transferable to other supply chains
Where are we heading?
Increase accessibility and adoptability

Based on **additional use cases** in cooperation with private sector:

- Develop local training & implementation capacity
- Develop & improve training material
- Expand pool of tech service providers
- Work towards tech maturity
- Optimize costing models
- Verify & quantify user benefits
Where else are we heading?
Modular Alignment with other systems & data sources

• Foster interoperability with other building blocks
• Link with additional services to increase farmer benefits
• Establish Code Community
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