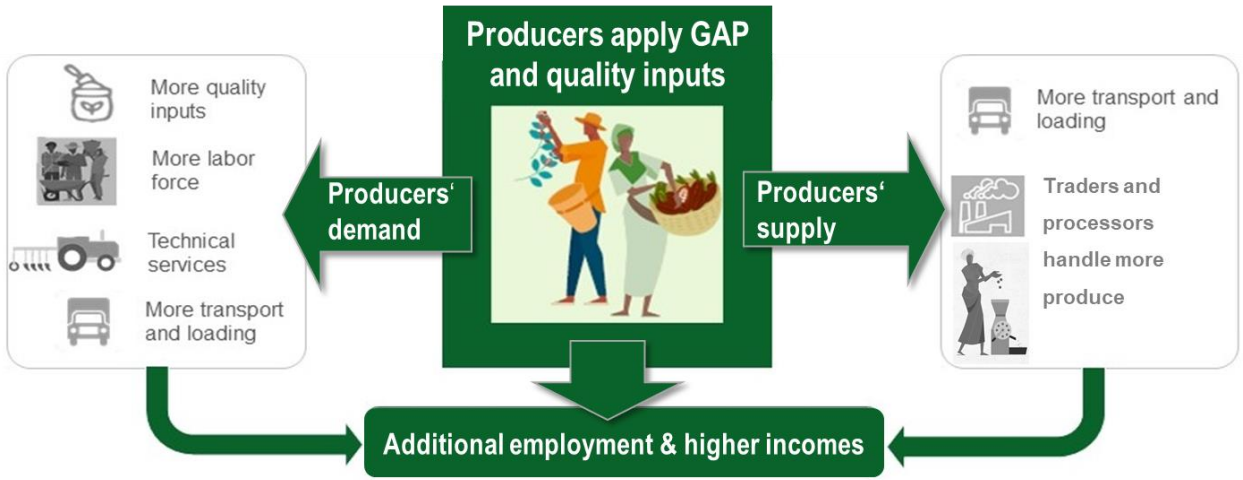
Pan African Expert talk No. 2 / 8

Employment effects from skills development in agriculture

Agri-Business Facility for Africa @ CONTINENTAL ACJ AFRICA CREATES JOBS 2021 VIRTUAL CONFERENCE 3-4 NOV AFRICA



Agenda

Welcome, Agenda & objective

Experts talk

1. Employment and entrepreneurial opportunities for youth in African agribusiness?
2. Estimate and understand employment effects
3. What can be done to materialize these opportunities for young agribusiness professionals?

Discussion

Outlook & Closing

Mots de bienvenue, Agenda & objectif

Exposés d'experts

1. Opportunités d'emploi et d'entrepreneuriat pour les jeunes dans l'agro-industrie Africaine ?
2. Estimer et comprendre des effets d'emplois
3. Que peut-on faire pour matérialiser ces opportunités pour les jeunes professionnels dans le secteur agroalimentaire ?

Discussion

Perspectives et clôture

Objective

Common understanding of

- Employment opportunities in agriculture, agribusiness
- Estimate and understand employment effects
- Estimation methodology to quantify the returns on investments in skills for MSMEs in Africa

The speakers

1. **Mr. Frank Bertelmann**, Head of programme
   Rural Youth Employment Programme, GIZ

2. **Dr. Annemarie Matthess**, Head of programme
   Agri-Business Facility for Africa, GIZ

3. **Dr. Sidiki Cissé**, Directeur Général
   Agence Nationale d'Appui au Développement Rural, Côte d'Ivoire

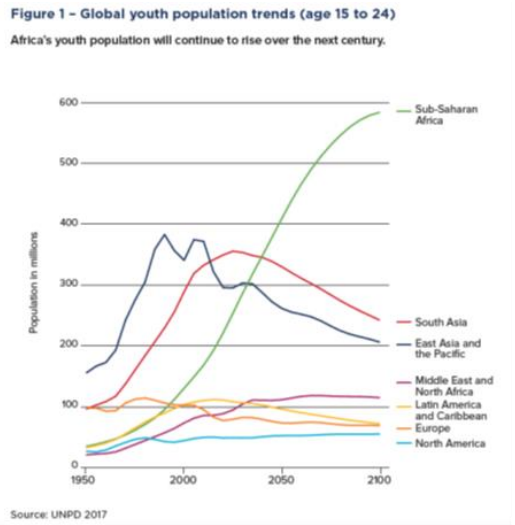
Speaker 1

Mr. Frank Bertelmann

Head of programme, Rural Youth Employment Programme, GIZ

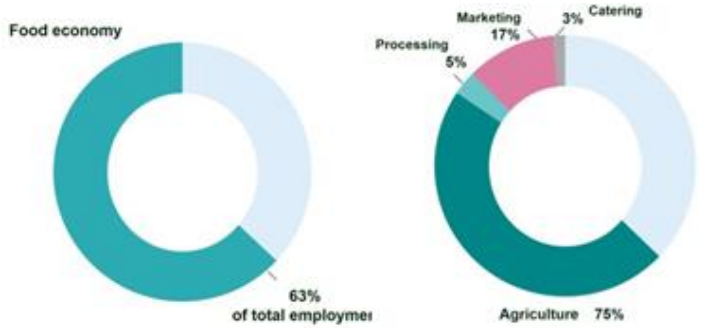
- Geographer graduated at the Free University, Berlin in economics and regional development.
- Over 15 years professional experience, he largely worked at the interface of sustainable economic and rural development
- He joined GIZ in 2007 in the Sustainable Agricultural Development Program (PROAGRO) in Bolivia and worked 6 years in Indonesia as an advisor and later as the project director.
- In 2015, he joined the Sector Project Agricultural Trade and Value Chains at GIZ Headquarters focusing on the cooperation with the private sector. Since 2018, he leads the Global Project “Rural Employment with a focus on youth” under the Special Initiative “ONE World – No Hunger”.

Employment in agri-food systems: Challenges and opportunities

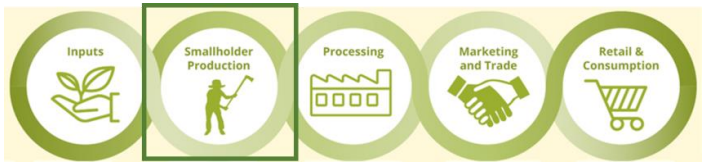


- **25 million jobs per year needed** – in Africa only, "classical" sectoral transformation (alone) does not provide enough jobs

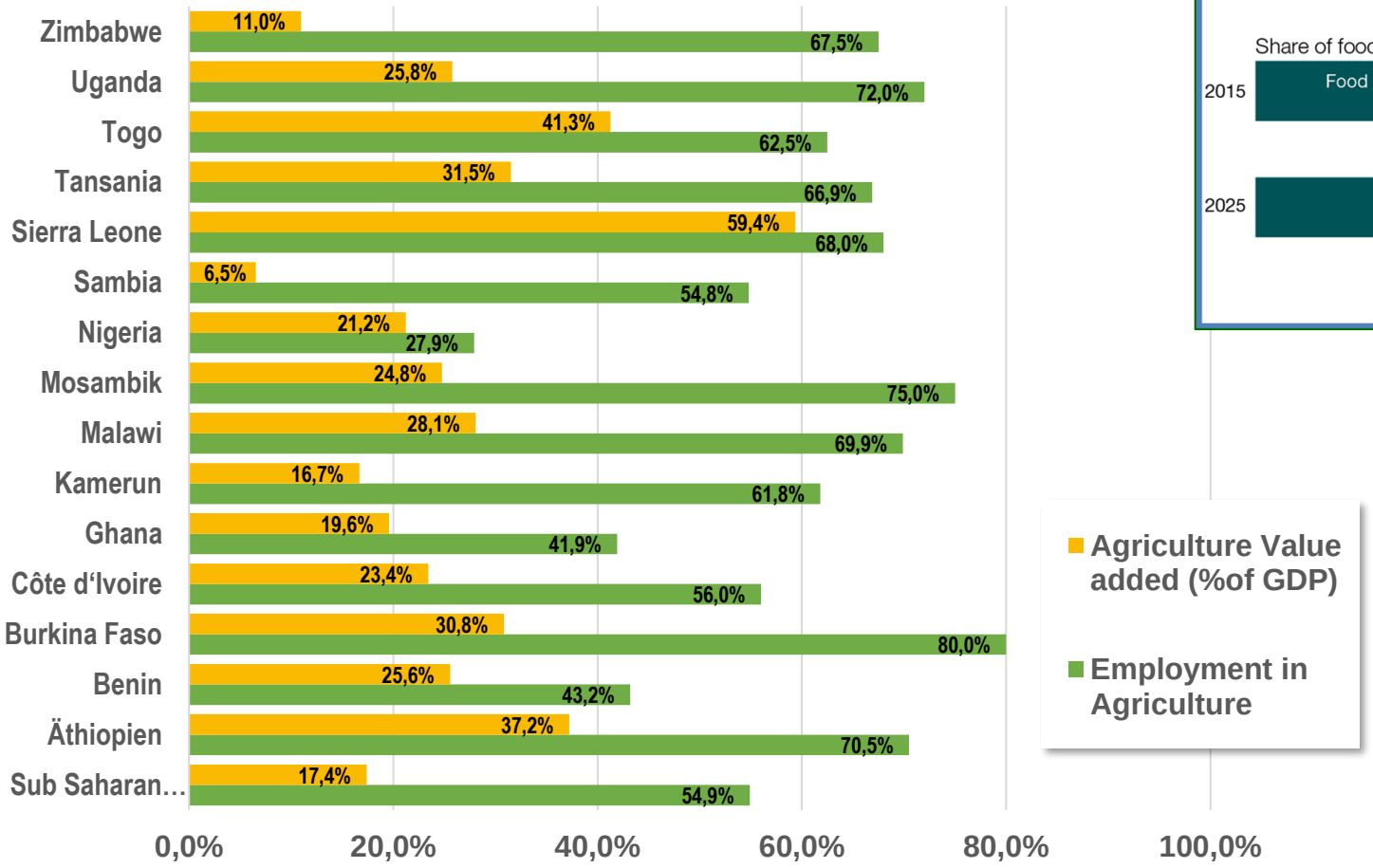
- **High potential for additional employment in the agri-food sector,** but RYE still a (relatively) new topic in rural development

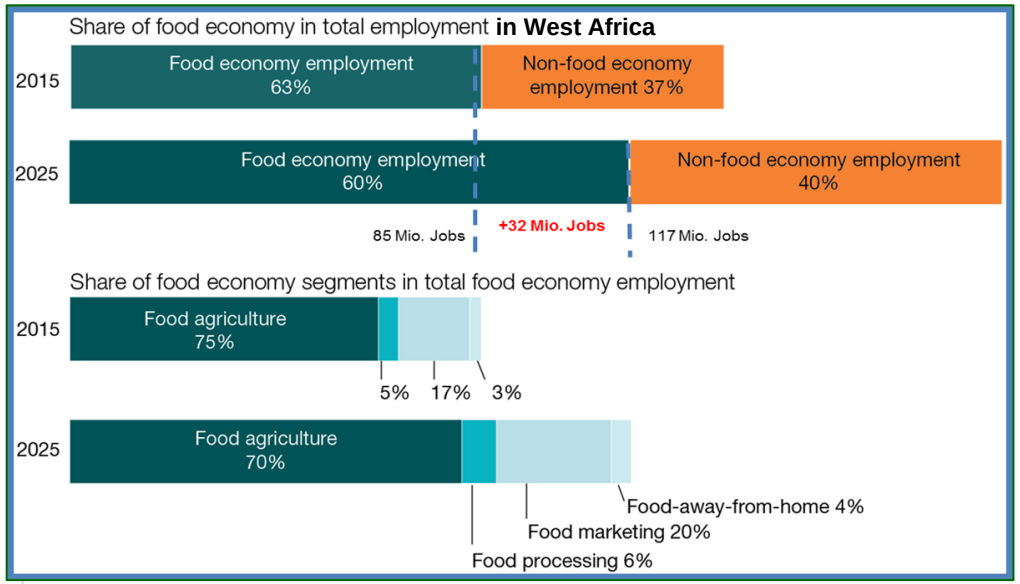


- Important to **understand concepts and approaches what works** and how to determine employment effects, in order **to shape portfolio development** and to deliver scalable impacts for a growing youth population



Employment and GDP from Agriculture in Africa





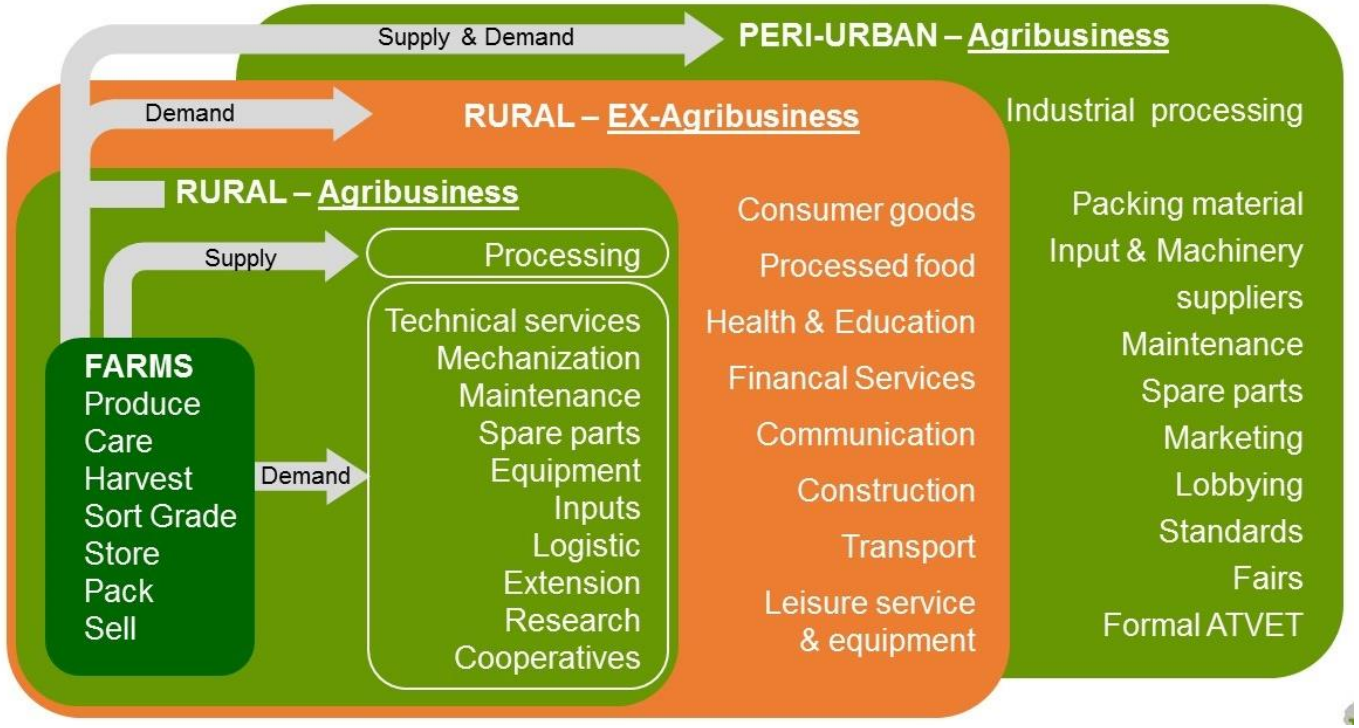
Source: OECD-SWAC (2018)

- **Shifting job potentials** with rural transformation
- **Still on-farm jobs crucial** for the time being
- Similar results for eastern and southern Africa as well

Employment opportunities in agri-food systems

Skills development to increase smallholder productivity and business skills as a crucial starting point

Employment and entrepreneurial opportunities for youth in African agribusiness?



- **Opportunities are quite many** for more & better jobs in different areas, business models, etc.
- **Skills requirements are as diverse** as tasks and opportunities as well as the heterogenous youth population
- So skills development (**the right "skills packages") and VC linkages are key** for an efficient outreach and broad-based, scalable results

Spotlight: **Adapted framework of the integrated approach**

An integrated approach to employment promotion – **addressing the demand and the supply side of (labour) markets** helps to **systematically** develop employment opportunities along value chains.

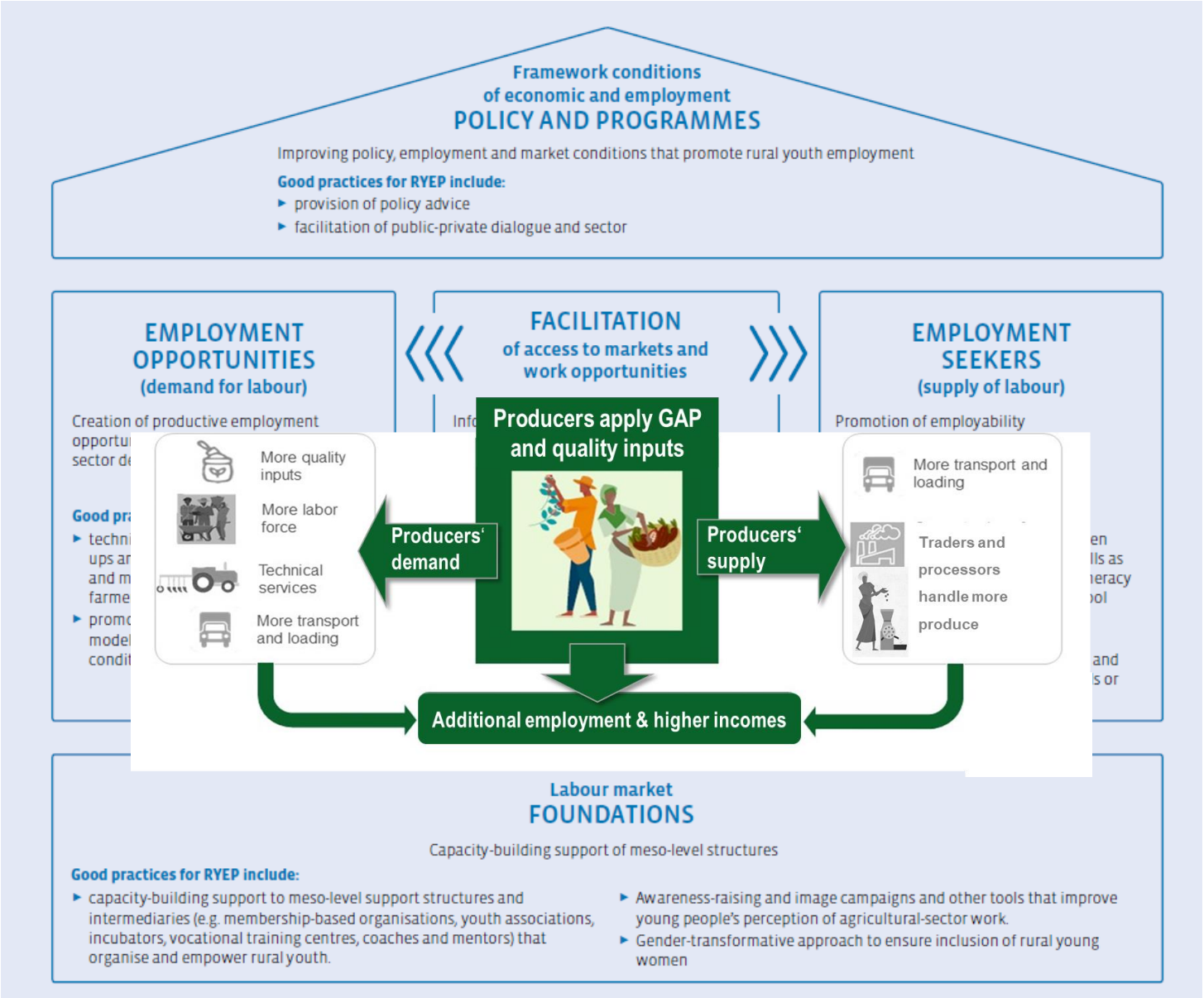
In **agri-food systems** with a focus on youth, the models needs adaptation due to

(1) the important role of **nonformal and entrepreneurial training** rather than formal TVET on the supply side;

(2) the **relevance of market access** when matching supply and demand;

(3) the **importance of micro-enterprises** on the demand side of the labour market; and

(4) the **relevance of support structures** designed to empower rural youth at the meso-level of the labour market.



Employment in agri-food systems: Getting traction

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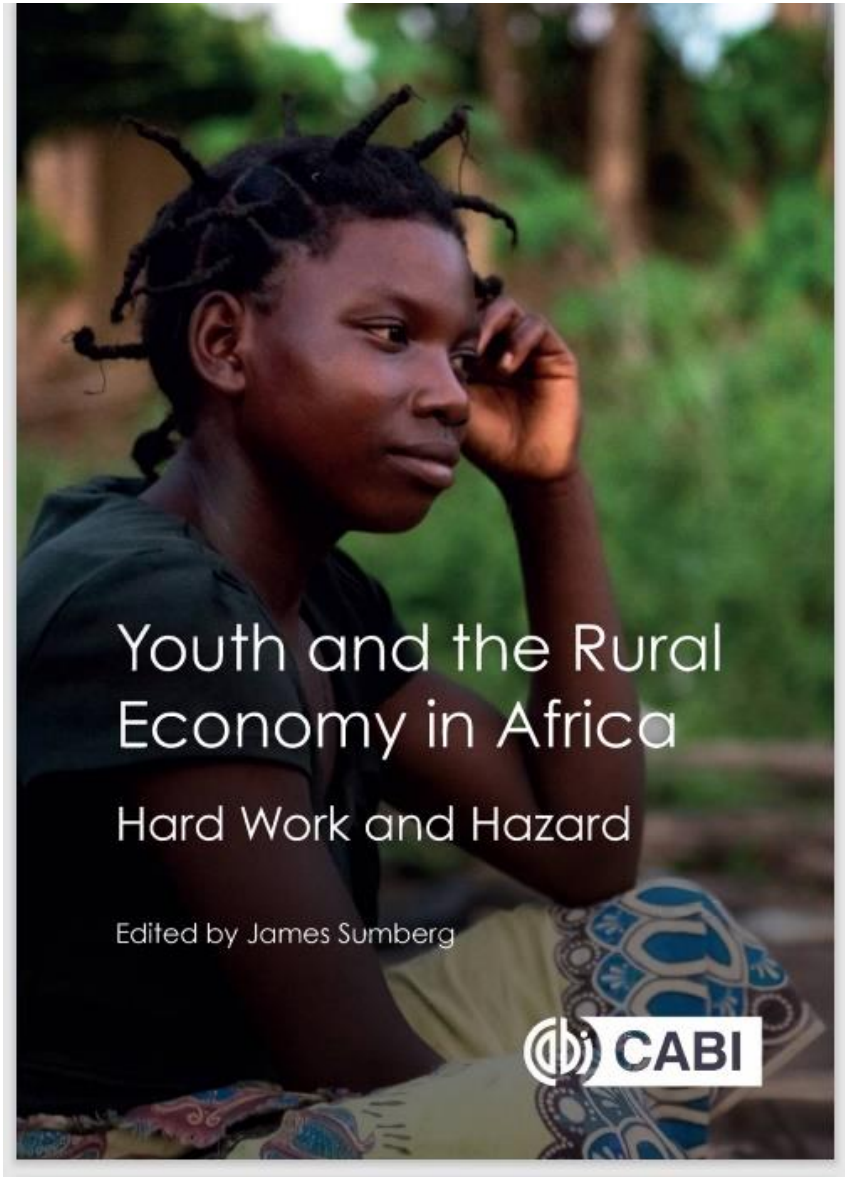
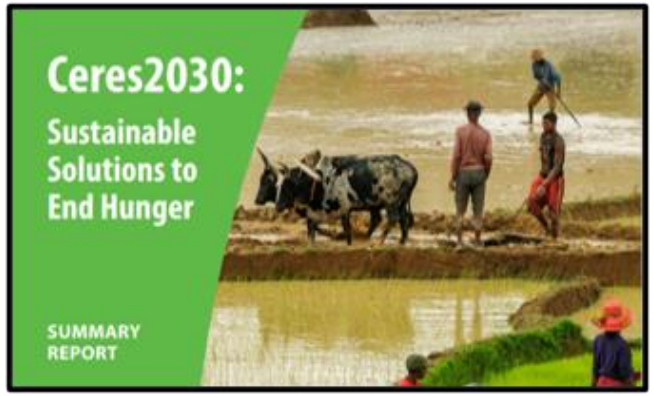
- There is a **really good momentum** to address the employment challenge more systematically and to support youth as key actors of change
- Still, it's a huge task and not an easy thing to do, **so lets do it.**
- Luckily the ingredients are there and we will see **impressive examples how it is done in practice**.





Speaker 2

Dr Annemarie Matthess

Head of programme, Agri-Business Facility for Africa, GIZ

- Agricultural economist, holding a PhD from Hohenheim University, Germany.
- over 30 years of work experience as GIZ resident advisor and project manager in Africa with a focus on rural development, innovation systems, research management and private sector development.
- Supported programs in Africa, Latin America and Central Asia in value chain promotion, strengthening of professional organizations in agriculture and agricultural innovation systems.
- As co-author and trainer, she contributed to the GIZ-ValueLinks approach and its scaling. She has also been spokeswoman of the GIZ Sector Network Rural Development Africa
- Led the Sustainable Smallholder Agri-Business (SSAB, 2009 to 2019) Program and developed the Farmer Business School approach, coordinated direct delivery by partner professionals to over 480,000 cocoa producers. Since 2020 leading Agri-Business Facility for Africa

Skills development triggers
Investments and demand for services

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Supply of food and raw material

Impacts

Application of GAP

1 Additional labour invested

2 Additional employment in agriculture

3

Sources: Research results on GAP
Key informands
GAP Training materials incl. Gross Margins

Farm enterprises	Current Technique		GAP (improved technique)		
	Labour (MD/ha)	Labour income EUR/ MD*	Labour (MD/ha)	Additional labour (MD/ha)	Labour income EUR/ MD
Beans	36	7,82	62	26	12,39
Cassava	55	13,03	124	69	18,26
Cocoa mature farm	55	6,02	118	63	7,01
Maize	50	1,91	88	38	5,86
Plantain	110	14,41	180	70	20,84

Baseline & Quantified GAP*

Baseline Cocoa labour need

Work operations

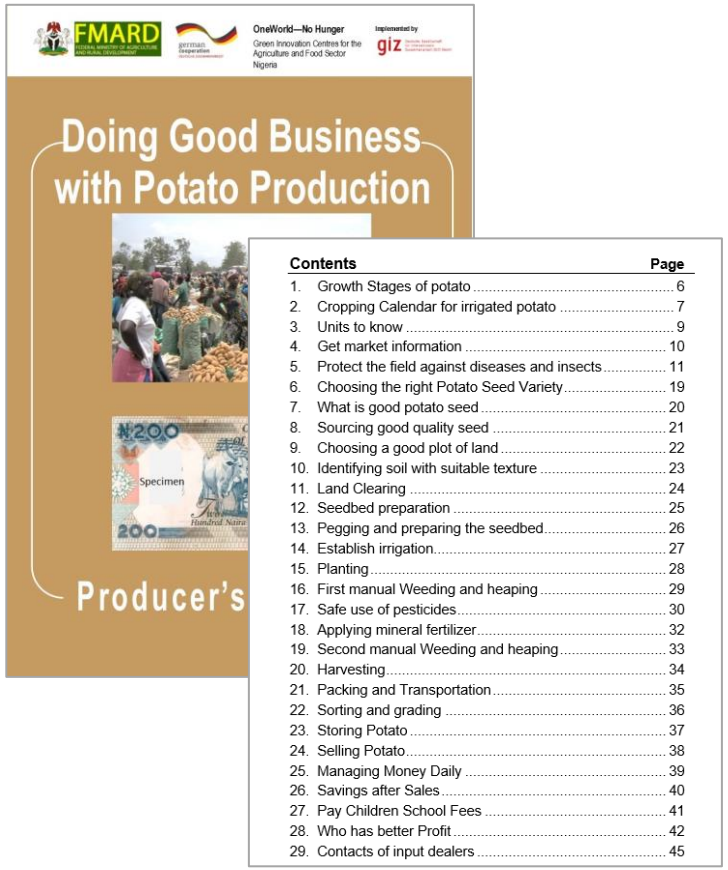
	Unit	Quantity	Price (GH¢)	Total (GH¢)
1. Money-Out				
Inputs				
Insecticides (Akatemaster)	Litres	0.5	20	10
Fungicides	Sachets	8	5	40
Fertilizer	50 kg Bags	0	80	0
Cost of Inputs				**50**
Labour				
Pruning	Man-Days	0	8	0
Removing mistletoes	Man-Days	0	8	0
Sanitary Harvesting	Man-Days	4	8	32
Weeding	Man-Days	15	8	120
Fertilization	Man-Days	0	8	0
Spraying	Man-Days	8	8	64
Harvesting	Man-Days	14	8	112
Fermenting, drying. bagging	Man-Days	8	8	64
Labour needs and cost	Man-Days	**49**		**392**
Total Money out				**442**
2. Money-In				
Yield x Price of Sale	Kg	350	5.46	**1,911**
3. Profit or Loss (Money In MINUS Money Out)				**1,469**

GAP Cocoa labour need

Work operations

	Unit	Quantity	Price (GH¢)	Total (GH¢)
1. Money-Out				
Inputs				
Insecticides (Akatemaster)	Litres	0.5	20	10
Fungicides	Sachets	8	5	40
Fertilizer	50 kg Bags	8	80	640
Cost of Inputs				**690**
Labour				
Pruning	Man-Days	24	8	192
Removing mistletoes	Man-Days	15	8	120
Sanitary Harvesting	Man-Days	4	8	32
Weeding	Man-Days	15	8	120
Fertilization	Man-Days	3	8	24
Spraying	Man-Days	8	8	64
Harvesting	Man-Days	26	8	208
Fermenting, drying. bagging	Man-Days	16	8	128
Labour needs and cost	Man-Days	**111**		**888**
Total Money-Out				**1,578**
2. Money-In				
Yield x Price of Sale	Kg	1,000	5.46	**5,460**
3. Profit or Loss (Money In MINUS Money Out)				**3,882**

Work operations → Labour intensity
Profits



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Baseline Potato labour need

Work operations

Ayuba's farm	Unit	Quantity	Price (Naira)	Total (Naira)
1. Money-Out				
Inputs and services				
Seeds	Kg	3,000 x	70 =	210,000
Fertilizer	50kg bag	3 x	6,000 =	18,000
Empty bags	50kg bag	140 x	50 =	7,000
Fuel for water pump	Liter	240 x	100 =	24,000
Service pump	Monthly	4 x	1,500 =	6,000
Transportation		1x	2,500 =	2500
Cost of inputs & services	**Naira**			**267,500**
Labour				
Land clearing	MD	10 x	1,000 =	10,000
Ploughing	MD	12 x	1,000 =	12,000
Harrowing	MD	12 x	1,000 =	12,000
Ridging	MD	12 x	1,000 =	12,000
Planting	MD	20 x	1,000 =	20,000
Fertilizing	MD	4 x	1,000 =	4,000
Weeding	MD	20 x	1,000 =	20,000
Harvesting	MD	20 x	1,000 =	20,000
Labour needs and cost	MD	**120**		120,000
	Naira			387,500
2. Money-in				
Production X Sales price	**Kg**	**7,000 x**	**140 =**	**980,000**
3. Loss or Profit				
Money-in minus Money-out	**Naira**			**592,500**

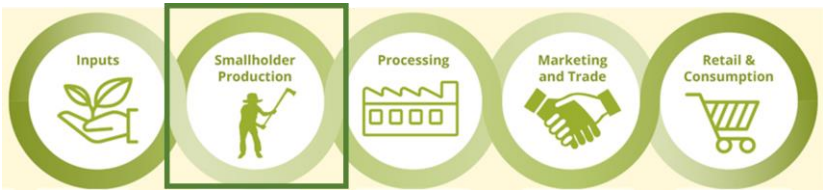
GAP Potato labour need

Work operations

Samuel's farm	Unit	Quantity	Price (Naira)	Total (Naira)
1. Money-Out				
Inputs and services				
Tractor Services	Per activity (plowing, harrowing, ridging)	3 x	9,500 =	28,500
Seeds	kg	3,000 x	250 =	750,000
Fertilizer NPK 15-15-15	50 kg bag	8 x	6,000 =	48,000
Fuel for water pump	Liter	200 x	150=	30,000
Water pump, and pipes		1x	75,000=	75,000
Service pump	Monthly	4 x	1,500 =	6,000
Bags	50kg bag	240 x	50 =	12,000
Transportation	Pick up van	1x	4,000=	4,000
Cost of inputs & services	Naira			**953,500**
Labour				
Land clearing	MD	10 x	1,000 =	10,000
Planting	MD	20 x	1,000 =	20,000
Fertilizing	MD	15 x	1,000 =	15,000
Weeding	MD	20 x	1,000 =	20,000
Irrigation	MD	4 x	1,000=	4,000
Harvesting	MD	35 x	1,000 =	35,000
Applying fungicides	MD	4 x	1,000=	4,000
Sorting/storing	MD	15 x	1,000 =	15,000
Labour needs and cost	MD	**123**		123,000
Total Money-Out	Naira			1,076,500
2. Money-In				
Production X Sales price	**kg**	**10,000x**	**200 =**	**2,000.000**
3. Loss or Profit				
Money-In minus Money-Out	Naira			**923,500**

Trade-offs for employment due to mechanization Profits

Knowing employment effects in agricultural production precisely enough at affordable cost?



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Data sources

Baseline & Quantified GAP*	Baseline & evaluations	Monitoring database	Adoption studies
Additional labour days per hectare	Average farm size in hectare	Number of trained farmers	GAP adoption rate

X

X

X

/

225 labour days constituting one Full Time Employment Equivalent (FTE)

=

Additional Full-Time Employment equivalents

for lead crop or aggregated across promoted crops

*Good Agricultural Practice
→ ideally also available as reference material for trained producers

One FTE or Annual Work Unit (AWU) comprises 225 MD p.a.
https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Annual_work_unit_(AWU)

Estimated employment effects from skills development
1 regional program focusing on cocoa and diversified incomes

Country	Trained smallholders [1]	Additional employment: from intensified Food production: Additional labour days p.a. & SH [2]	% trained SH adopting 4/4 GAP [3]	Aggregated labour days	Aggregated Job-equivalents [4]	from intensified Cocoa production: Additional labour days p.a. & SH [5]	% trained SH adopting 8/8 GAP [3]	Aggregated labour days	Aggregated Job-equivalents [4]	Total aggregated Full-Time Employment equivalents 4)
Cameroon	100.739	30	34%	1.050.160	**4.667**	126	57%	7.188.675	**31.950**	**36.617**
Côte d'Ivoire	102.097	31	58%	1.799.950	**8.000**	174	86%	15.254.741	**67.799**	**75.799**
Ghana	166.759	26	48%	2.059.256	**9.152**	205	84%	28.759.400	**127.820**	**136.972**
Nigeria	102.929	41	42%	1.787.180	**7.943**	81	71%	5.863.207	**26.059**	**34.002**
Togo	8.155	38	34%	106.319	**473**	78	57%	360.246	**1.601**	**2.074**
Total	**480.679**			**6.802.865**	**30.235**			**57.426.269**	**255.228**	**285.463**

[1] FBS training outreach; Source: SSAB-GIZ Master Dashboard Umbrella Programme

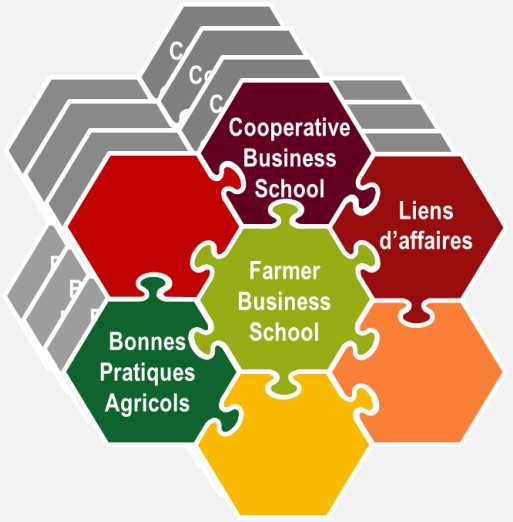
[2] Weighted average of surface allocation staple crops based on GFA impact study 2018 (Tab. 52 to 54) ; complementary products are beans (RCI, TG, Cam) resp. snails (GH, NG) as dummies: assumption on surface allcoation ; Plantain excluded (i) as promoted as single crop only in RCI and CAM and (ii) as overlap with replanting of cocoa incl. plantain as temporary shade canot be excluded; Data on Labour days from SSAB-CFLP GAP Gross margins in training materials;

[3] Data on adoption of GAP from GIZ-SSAB-CFL 2016 Survey with 1024 FBS trained groups (29,305 FBS trained famers, 31% female); Togo: no survey 2016 as field operation had started same year, lowest adoption rate from Cameroon assumed

[4] 225 working days per year incl. peak season; According to generational stage and peak seasons of the smallholder household this can be self-employment of family members or employment of hired labour. Employment effects from services are not included as captured under cost for input and services i.e. further value addition and jobs

[5] Data on acreage of cocoa from GFA impact study 2018 (Tab. 51); Data on Labour days from SSAB-CFLP GAP Gross margins in training materials (Mature cocoa)

Estimated (self-)employment effects across different VC projects



Employment created

Value chains	A4SD programmes	New non-formal Fulltime Job-equivalents[1]	
Rice	CARI	44,834	Mechanization
Cotton	COMPACI[2]	112,644	Mechanization
Cocoa & food	SSAB	285,463	Tree crops
Cashew	ComCashew	377,156	Tree crops
	Total	820,097	

1) One full-time job equivalent (Annual Work Unit (AWU)) comprises 225 MD p.a. (http://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Annual_work_unit_(AWU))
2) due to data availability only intervention countries Cameroon, Cote d'Ivoire, Burkina Faso, Zambia, and Tanzania considered

More under www.a4sd.net

Factors influencing creation of employment

- **Additional care** required by GAP → better yields → more work
- **Profitability** of GAP (no profit → no jobs → not attractive for youth)
- **Opportunities to produce without or with few land**

  „snails, small ruminants, aquaculture, poultry << >> cattle“
  „nurseries, muchsrooms, spices << >> staple crops“
- **Competitiveness** of the product
  (e.g. with imports produced with mechanization) → trade-offs
- **Ways to modernize production for youth**
  (small scale mechanization such as power tiller for rice, digital approaches such as FBS Innova, the digital FBS)
- **Provide entrepreneurial training** … further prospects beyond one product / market
- **Links to up- and downstream enterprises and professional organizations**

Speaker 3

Dr Sidiki Cissé, CEO Agence Nationale d'Appui au Développement Rural Côte d'Ivoire

- Graduated from Faculty of Veterinary Medicine of the University of Liège, Brussels and of the Prince Léopold Tropical Institute, Antwerp
- Joined the Society for the Development of Animal Producers (SODEPRA) in 1986 where he held the position of Director of the National Sheep Center and Head of the 6th EDF Sheep Project
- In 1994, he joined ANADER starting with management function regional level and followed by advisory at headquarter level to become Deputy Managing Director in 2002
- Since 2011 Dr Cisse is Chief Executive Officer of ANADER

Roles and contributions of agricultural extension for (self-)employment of youth in African agrobusiness

Rôles et contributions de la vulgarisation agricole à la création d'(auto)emploi des jeunes en agrobusiness africain

- ANADER is the national agency of rural development support
  It was created on September 29, 1993 Since April 1998 ANADER is a Société Anonyme (SA)
- Minority state participation in social capital (35%) The other shares are hold by professional agricultural groups (33%) and the private sector (32%)
- Our mission: Contribute to the improvement of living conditions in the rural world by professionalizing agricultural producers and their organization
- To this effect, ANADER provides agricultural extension, advice and support to young rural professionals to establish agrobusinesses
- ANADER operates across Côte d'Ivoire
  - Employs 2.310 staff (1.431 field staff)
  - Runs 4 training centres, 10 centres for production of planting material and 1 call centre for electronic extension incuding an e-lab

Some results

The results obtained are encouraging and give hope that agribusiness contributes to the development of the country's economic fabric while contributing to fight against food insecurity:

From 2006 to 2020 ➔ 1,526,981 farmers including 180,980 women (12%) supervised

From 2015 to 2020 ➔ 12,927 young agro-business professionals trained have implemented “youth employment” projects funded by various private and public partners including GIZ

Application of GAP and creation of employment

	Cocoa			Cashew	
	No GAP	With GAP All varieties	BPA Hybrid Variety	No GAP	With GAP
Yield (national average kg/ha)	*483*	*678*	*1.029*	*300*	*750*
Change of yield (kg/ha)	*0*	*195*	*546*	*0*	*450*
Labour needs (MD /ha)	*50*	*78*	*100*	*37*	*67*
Variation of labor needs (MD/ha)	**0**	**28**	**50**	**0**	**30**
Price (FCFA/kg)	*800*	*800*	*800*	*300*	*300*
Additional revenu (FCFA/ha)	*0*	*156.392*	*437.192*	*0*	*135.000*
Unit cost of labor (FCFA/MD)		*1.750*	*1.750*	*2.000*	*2.000*
Cost of additional labour (FCFA/ha	0	87.500	87.500	0	60.000
Additional profit (FCFA/ha)		**68.892**	**349.692**		**75.000**

Implementation of GAP disseminated by extension requires a larger workforce (permanent or occasional) that must be recruited

Estimating employment created: the case of cocoa

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ANADER has served 700.000 cocoa producers (2014 - 2020)

whereas 490.000 (approx. 70%) apply GAP

Additional employment created (all cocoa varieties) is estimated as follows:

$$\frac{\textbf{490.000}\ \text{MSME adopter} \times \textbf{2,9}\ \text{ha av. cocoa areas} \times \textbf{28}\ \text{MD addit. Labor / ha}}{\textbf{225}\ \text{MD}} = \textbf{176.836}\ \text{Full time employment equivalents}$$

Estimating employment created: the case of cashew

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340.000 cashew producers have been served by ANADER (2014 to 2020) whereas 90.000 apply GAP according to evaluation

$$\frac{\textbf{90.000}\ \text{MSME adopters} \times \textbf{3.5}\ \text{ha av. cashew area} \times \textbf{30}\ \text{MD addit. Labor / ha}}{\textbf{225}\ \text{MD}} = \textbf{42.000}\ \text{Full time employment equvalents}$$

Employment effects beyond MSME in agriculture

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ANADER has introduced new practices calling on new professions, such as nursery managers

➔ **125 (Self-) jobs created nursery since 2018**

Agricultural Producer Organizations create remunerated jobs at their headquarters and sections
In 2017, 140 APO have been trained

➔ **Have created at least 5 permanent jobs per APO ➔ 700 new jobs**

Actors of the cassava value have been trained in Bouaké
→ Interaction between 67 APO, producers, processors and traders

➔ **664 jobs stabilized**

Young agribusiness professionals at the center of our support

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Coaching

Young agribusiness professionals

- **Access to quality inputs** → **Input / equipment suppliers**
- **Access to financial servicens** → **Micro Finance Institutions (MFI)**
- **Sales opportunities** → **Access to market Links with buyers**

12.927 Young agribusiness professionals trained (2015 to 2020) implement projects « emploi-jeunes» financed by different public & private partners incl. GIZ

Merci pour votre aimable attention

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2
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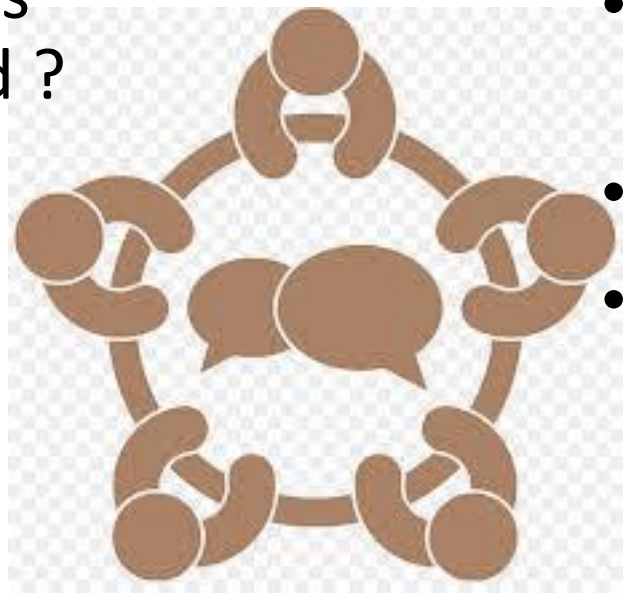
Visit us Online

Présentation - ANADER - Le Partenaire Privilégié du monde rural

Discussion

- What was new?
- What can you confirm with own experience?
- Which similar business models have you tried ?
- What was useful?
- How can this be replicated?



- Quoi de neuf ?
- Que pouvez-vous confirmer avec votre propre expérience?
- Quels modèles similaires avez-vous testés?
- Qu'est-ce qui était utile ?
- Comment cela pourrait être repliqué ?