Living income in small holder cotton production in Africa

28th July 2021

14:00-15:00 BST (GMT +1)

Housekeeping Rules

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- A copy of the slide deck and recording will be available on our website within 2 weeks.

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You will be kept muted throughout main session so,

- Raise your virtual hand (organizers shall unmute you)
- Type your question on the question box

TECHNICAL DIFFICULTIES ? Reach out to anja@isealalliance.org

Today's Facilitators

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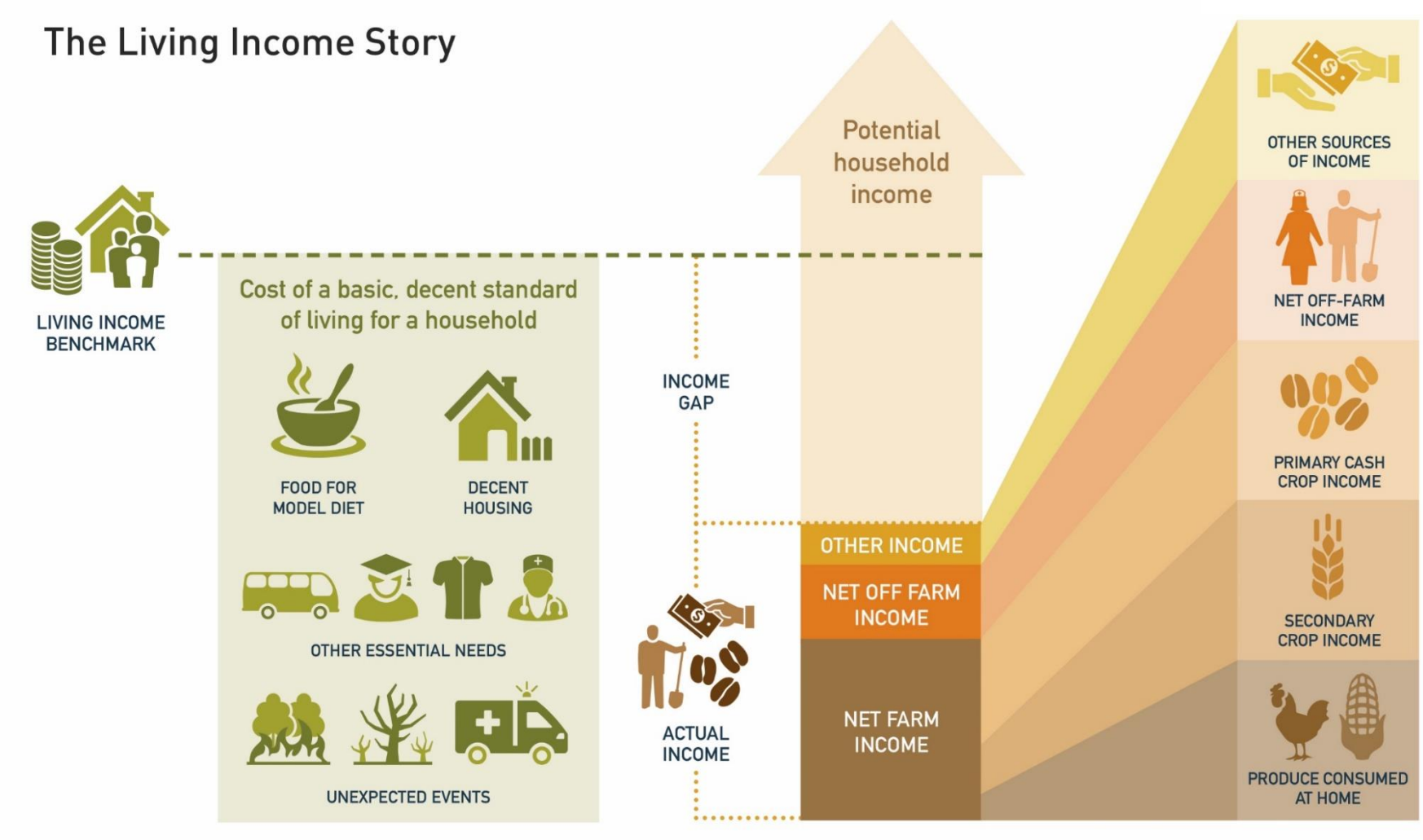

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Main Discussion Agenda

- **Cotton sector organisation models in Africa**
  - Impact on prices, productivity and income for African smallholders
  - Q&A

- **Closing the income gap of cotton farmers in Cameroon**
  - How can the Living Income methodological approach help in project decision making?
  - Q&A

- **Panel discussion**

- **LiCoP updates and news**

Today’s guest speakers

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Cotton sector organisation models in Africa
Impact on prices, productivity and income for African smallholders

Programme “Sustainable Agricultural Supply Chains and Standards”

The Programme contributes to several SDG

It targets several supply chains

Our approaches aim

- ✓ to increase living income and wages of small scale farmers
- ✓ to avoid deforestation in partner countries
- ✓ to tackle challenges of climate change
- ✓ to cooperate closely with the private sector in Multi-Stakeholder-Platforms

Background of price building in African cotton farming I

- High price volatility in global cotton markets
- Price driving factors: supply and demand, government policies on import/export, currency exchange rates, weather, polyester prices
- Remedies: trade with cotton futures, to shift market price risk exposure to other hedgers,
  price intervention from Governments (subsidies, minimum prices)

Background of price building in African cotton farming II

- **Subsidies reduce the direct impact of market prices on farmers and influence global markets**

- **Cotton subsidies:**
  Direct support to production
  Border protection
  Crop insurance subsidies
  Input and transportation
  Minimum support price mechanisms

- Subsidies in many cotton producing countries: US, China, EU

- Subsidies for cotton farmers in several West and Central African (WCA) Countries: subsidies for inputs and/or price support mechanism

Estimated Assistance Provided by Governments to the Cotton Sector*

Country	2018/19			2019/20**		
	Production	Average Assistance per Pound Produced	Assistance to Production	Production	Average Assistance per Pound Produced	Assistance to Production
	1,000 tons	US cents	US$ Millions	1,000 tons	US cents	US$ Millions
China	6,040	29	3,831	5,800	37	4,711
USA***	3,999	13	1,182	4,336	21	2,022
India	5,610	0	46	6,069	4	590
Turkey	977	14	310	815	13	232
Greece	277	35	213	292	32	207
Spain	65	48	69	66	46	67
Burkina Faso	183	10	39	193	6	24
Mali	276	6	35	299	12	82
Cote D'Ivoire	202	3	13	211	8	38
Senegal	6	7	1	6	14	2
Colombia	13	0.7	0.2	17	2	0.9
All Countries	**17,648**	**15**	**5,739**	**18,104**	**20**	**7,975**

ICAC 2020

Organisational Models of the African Cotton Sector I *

(1) The national or sub-national (regional) monopoly:

- One cotton company with monolopy rights to promote and buy cotton in a specified geographical area
- Farmers obliged to work with them
- Contract farming arrangements: pre-financing of the seed and inputs for cotton production, provision of agricultural advisory services
- Purchase price for cotton either set before seed is planted or during the marketing season
- Examples: WCA: Mali, Cameroon, Burkina Faso (regional monopoly)

* Findings of a study from DIE/GDI (2013), Roger Pelzer and Daniela Röttger: Cotton Sector Organisation Models and their impact on farmer´s productivity and income. Based on data of COMPACI project 2006-2016 (GIZ, BMGF, DEG)

Organisational Models of the African Cotton Sector II

(2) The concentrated competition model:

- One or two dominant firms act as market leaders in a competitive market among much smaller competitors
- Farmers may choose the cotton company with which they wish to enter a contract
- Contract farming arrangements
- Examples: Zambia, Zimbabwe, Côte D‘Ivoire

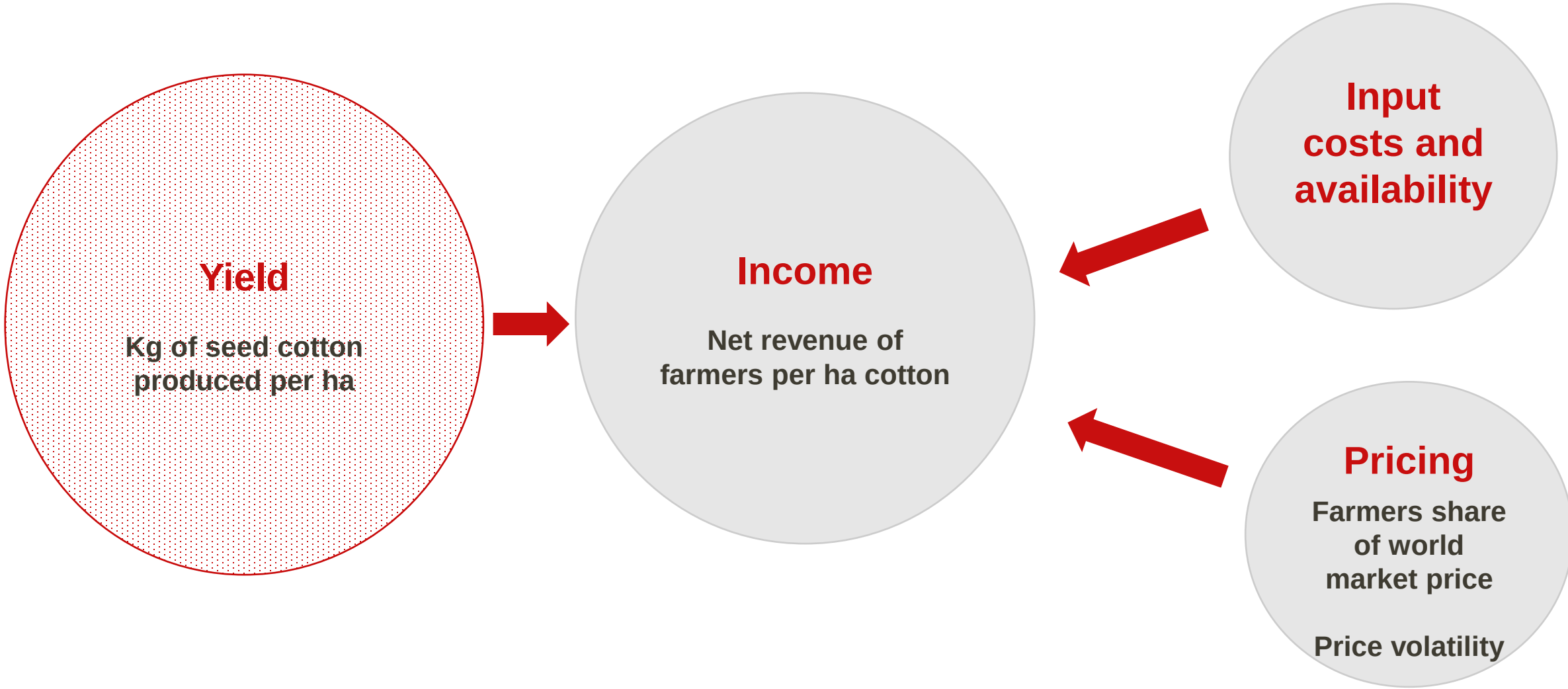
Organisational Models of the African Cotton Sector III

(3) The atomistic competition model:

- A competitively structured system in which many ginners (20-30) compete for a market share without anyone of them establishing a dominant position
- No contract arrangements
- Examples: Anglophone Eastern and Southern Africa (ESA), Tanzania, Malawi

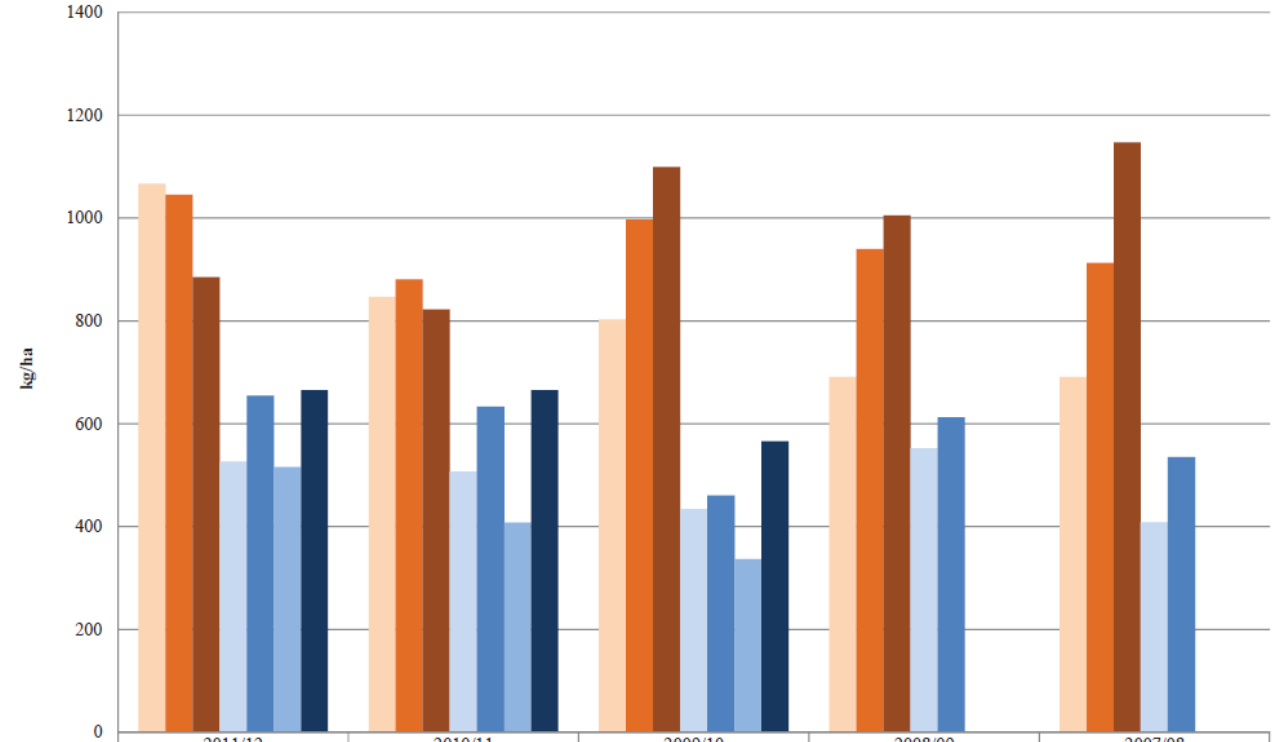
Results of the Study

Indicators for the examination of cotton sector performance



Cotton Yields

Figure 2: Seed cotton productivity (kg/ha)*

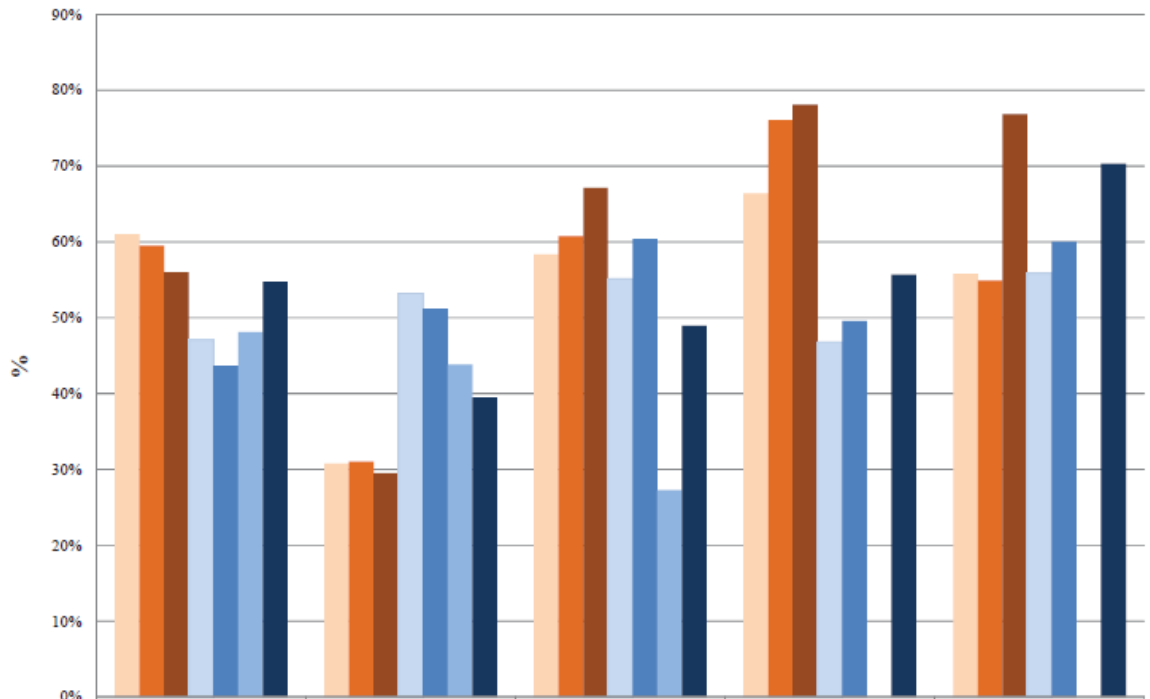


	2011/12	2010/11	2009/10	2008/09	2007/08
Burkina Faso	1066,68	846,71	802,62	691,10	690,79
Côte D'Ivoire	1045,23	880,91	996,66	939,99	912,63
Benin	884,99	822,02	1099,45	1005,12	1147,25
Zambia (Dunavant)	526,65	506,82	434,09	552,28	408,92
Zambia (Cargill)	654,71	633,67	460,18	612,58	535,55
Mozambique	515,96	407,98	336,41		
Malawi	665,00	665,00	566,00		

- COMPACI cotton farmers confirm significantly higher mean yields in WCA than in ESA
- High cotton yields (mainly) a result of good pre-harvest service and input provision

Farmer´s share of world market price

Figure 3: Farmers' share of world market price*



	2011/12	2010/11	2009/10	2008/09	2007/08
Burkina Faso	61,04%	31%	58%	66,41%	55,77%
Côte D'Ivoire	59,50%	31%	61%	76,06%	54,91%
Benin	56,00%	30%	67%	78,11%	76,87%
Zambia (Dunavant)	47,06%	53%	55%	46,79%	55,88%
Zambia (Cargill)	43,65%	51%	60%	49,59%	60,00%
Mozambique	48,12%	44%	27%		
Malawi	54,74%	39%	49%	55,68%	70,27%

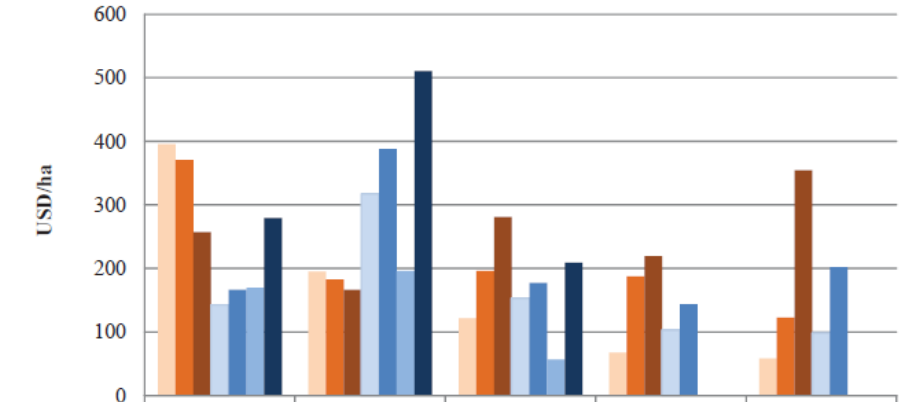
The fact that the atomistic competition model is prevailing in ESA does not mean that farmers generally receive better prices for their cotton (lack of services, no support against price fluctuations)

Announcement of a cotton purchase price prior to planting in WCA can go both ways for the farmers:

- In downswing phases low prices are cushioned
- In phases of price increases prices paid to the farmers are well under the world market prices

Income (Net Revenue) from cotton

Figure 5: Farmers' net revenue from cotton (USD/ha)*1,*2



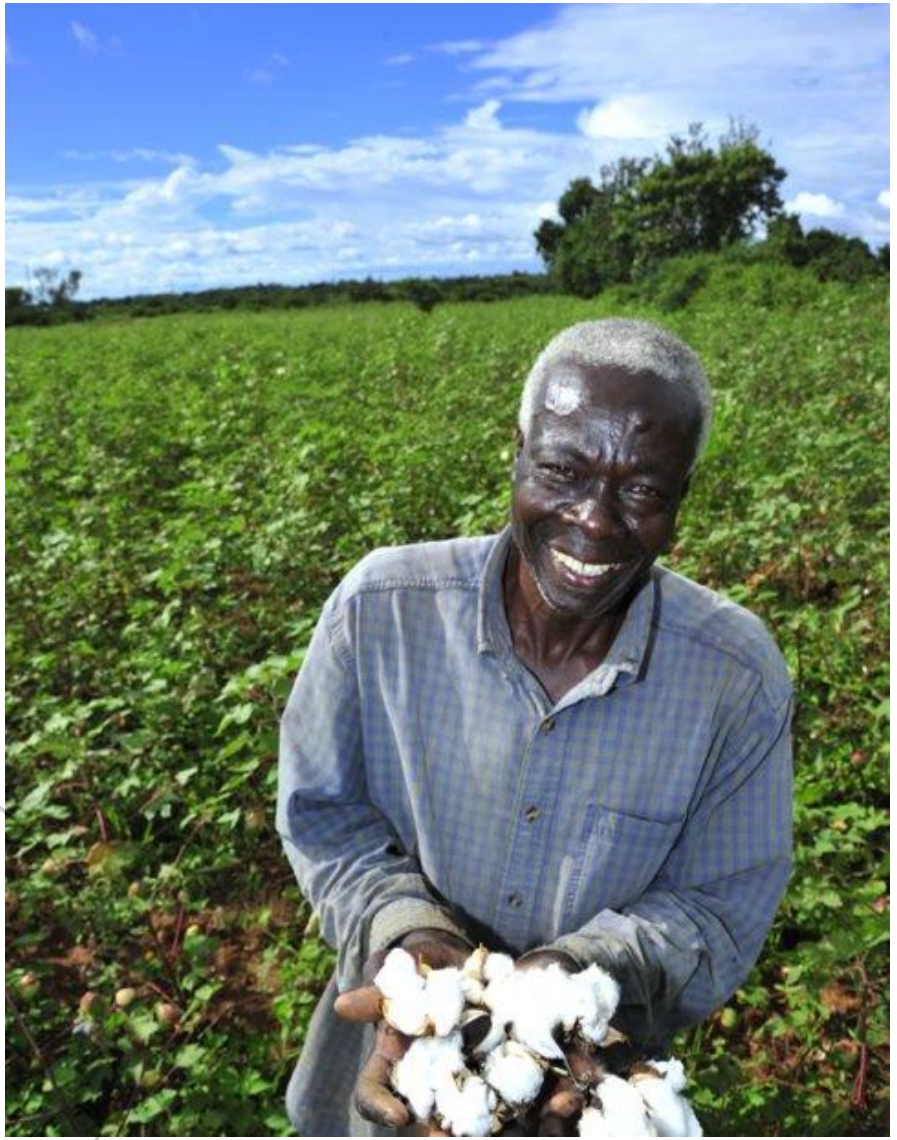
	2011/12	2010/11	2009/10	2008/09	2007/08
Burkina Faso	395,67	195,07	121,41	67,14	58,12
Côte D'Ivoire	370,73	182,73	195,97	187,47	122,57
Benin	257,19	166,60	281,03	219,59	354,42
Zambia (Dunavant)	142,65	317,60	153,09	102,74	98,12
Zambia (Cargill)	166,38	387,65	177,30	143,28	201,92
Mozambique	169,24	195,70	56,37		
Malawi	278,77	510,43	208,69		

*1 Net incomes are calculated without labour costs.
*2 Plexus and GLCC figures are only available since 2009/10.

Source: COMPACI data

Higher costs (associated with using mineral fertilizer) will not be compensated by additional yield when low cotton prices occur combined with a low application of good agricultural practices

Conclusions & Solutions



Conclusions

1. **Performance and efficacy** of cotton farming **cannot solely be measured by prices** per kg or yield level, but rather by the farmers' net profit per hectare

2. **Quality of the cotton** is best under the concentrated competition model

3. The **whole small holder farming system** must be **taken into account** when it comes to assessing **performance and offering solutions**: farm profitability largely depends on other crops than cotton

4. The **higher living standard** of cotton farmers in WCA compared to ESA is the result of the efficiency of the whole farming system in WCA, which is largely **due to a well-designed cotton sector policy** decades ago

Solutions

(1) Reduction of the impacts of price volatilty

- Some countries in West Africa provide subsidies for direct purchase of cotton in times of low prices or for cotton inputs
- Setting the purchase price for cotton before the seed is planted (pre-planting price), like many WCA do

(2) Increased Diversification in the cropping system

- Research results have proven the benefits of crop diversification in agricultural systems*
- farmers can maintain crop and soil health; contribution to diversified & **more resilient income sources**

* Findings of a study from OCA/FiBL/GIZ (2021): Beyond the Cotton Crop – Unveiling the benefits of crop diversification in the context of Indian Organic Cotton Farmers

Solutions

(3) Access to appropriate inputs, credits and extension services

(4) Farmers‘ training in basic commercial practices

Farmers Business Schools, Traders Business Schools

(5) Supportive sector policy environment

- Many countries undergo structural reforms in the cotton sector (e.g. Benin, Togo)
- In the case of Benin: significant positive impact on productivity in the

Any questions?

Closing the income gap of cotton farmers in Cameroon: How can the Living Income concept help in project decision making?

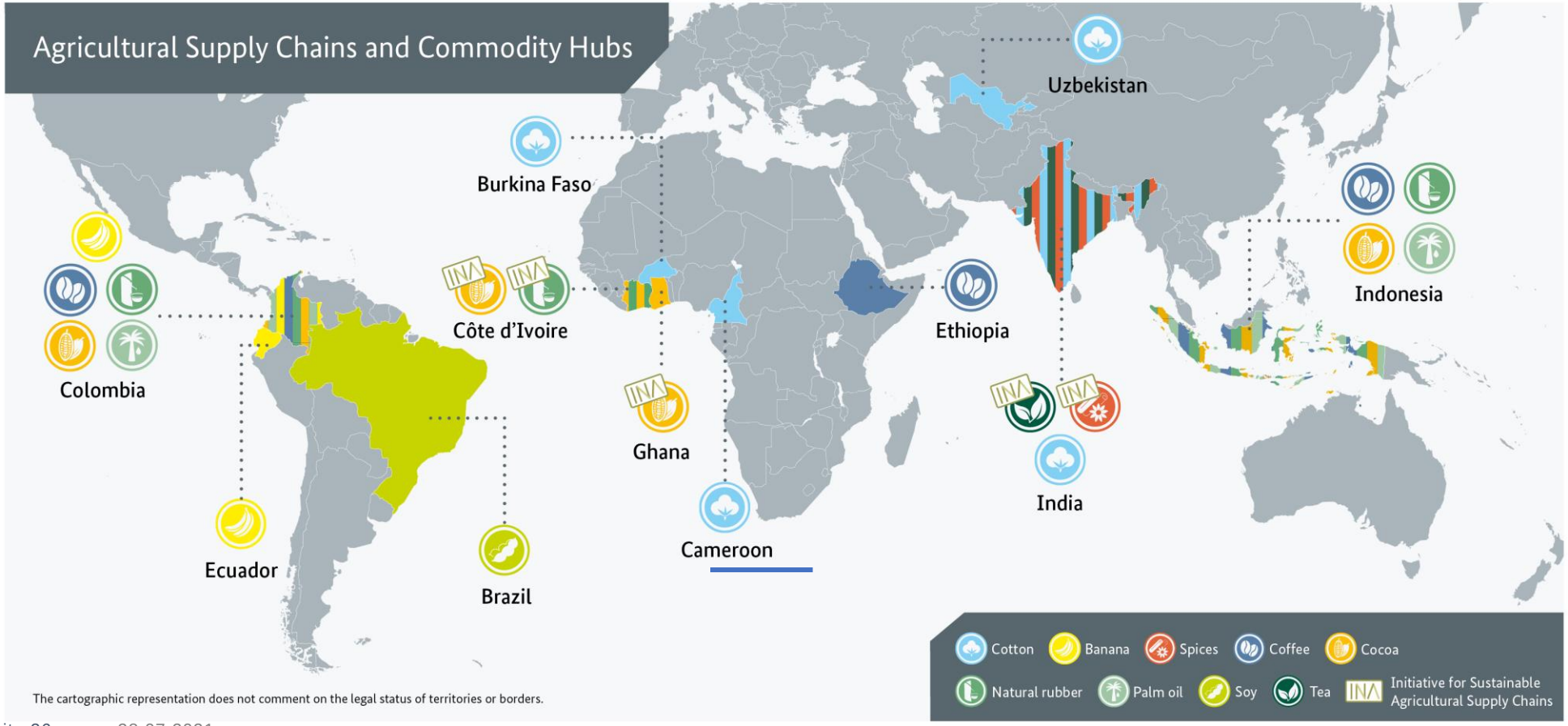
GLOBAL PROJECT « SUSTAINABILITY AND ADDED VALUE IN AGRICULTURAL SUPPLY CHAINS » (GP AgriChains)

Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

Global Programme Sustainability & Value Added in Agricultural Supply Chains

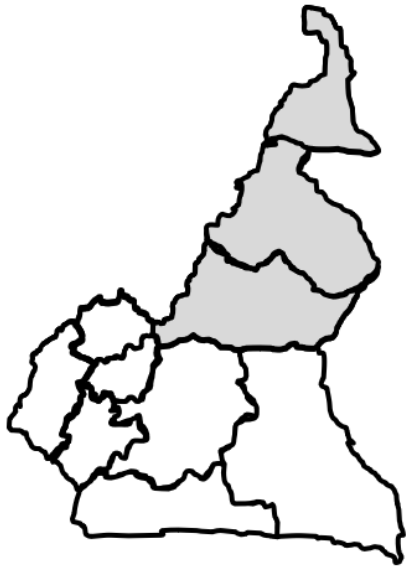
Objective: **Improved sustainability in selected agricultural supply chains in our partner countries** by

- promoting sustainable farming methods
- strengthening capacities for local value addition
- fostering global knowledge exchange



https://www.giz.de/en/worldwide/78887.html

Cotton Sector in Cameroon

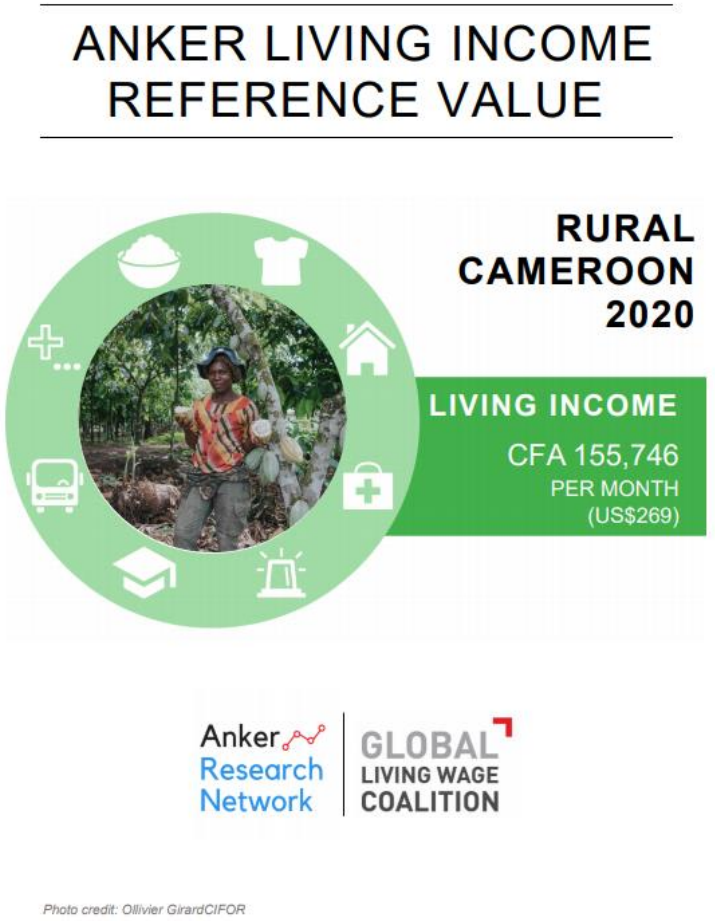


- **Cameroon is the fifth largest cotton producer in sub-Saharan Africa:**
  - Average yields of around 1.4 tons per hectare
  - Highest cotton yields in Africa
  - Important source of income for rural population in the North (up to 170 000 cotton farmers)
- **Cameroon's cotton basin (Northern regions) is marked by:**
  - a demographic crisis that generates conflicts over access to agricultural and pastoral resources
  - major internal migratory movements
  - a security crisis affecting and growing criminality
  - negative effects of climate change
  - a progressive loss of soil fertility.

Anker Living Income Reference Value for Rural Cameroon in 2020

The **Anker Living Income Reference Value** for 2020 for rural Cameroon is EUR 237,43 per month (CFA 155,746) with a 95% confidence interval around it from EUR 217,32 to EUR 259,4;

- Due to the large variation in incomes and poverty rates across Cameroon it is likely that the Anker Living Income Reference Value for rural Cameroon is **too low** for the relatively wealthier Southern regions and **too high** for the relatively poorer Northern regions ;
- For this reason, it is suggested to use the lower confidence limit **(EUR 217,32)** for rural North and Far North regions (cotton regions).



Approach to measuring total actual income of cotton farmers

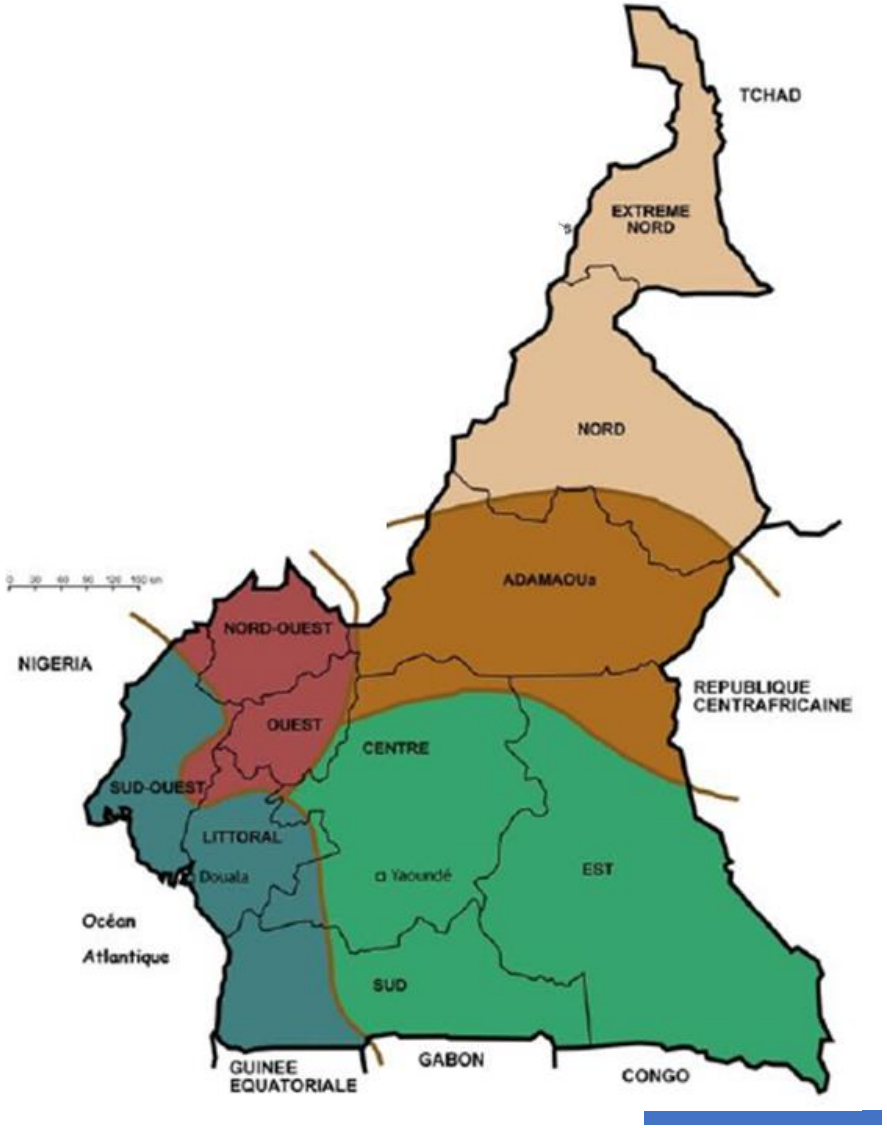
Background:

- Many small cotton farms in comparable agro-ecological zones
- Equipment and cultivation methods of the farms are often very similar and do not show significant differences
- *Assumption*: Changes at farm level can be collected by a small sample and extrapolated to the total number of all cotton farms in the respective region.

→ **Small sample size but detailed information** (e.g., other income sources, general farm equipment, organization of work, input/output, use of external services (auxiliary staff or machinery))

Sample size: 42 farms divided into 3 categories according to the farm size:

- Farm group 1: less then 1 ha (70,88%)
- Farm group 2: less then 5 ha (25,08%)
- Farm group 3: 5 ha and more (4,04%)



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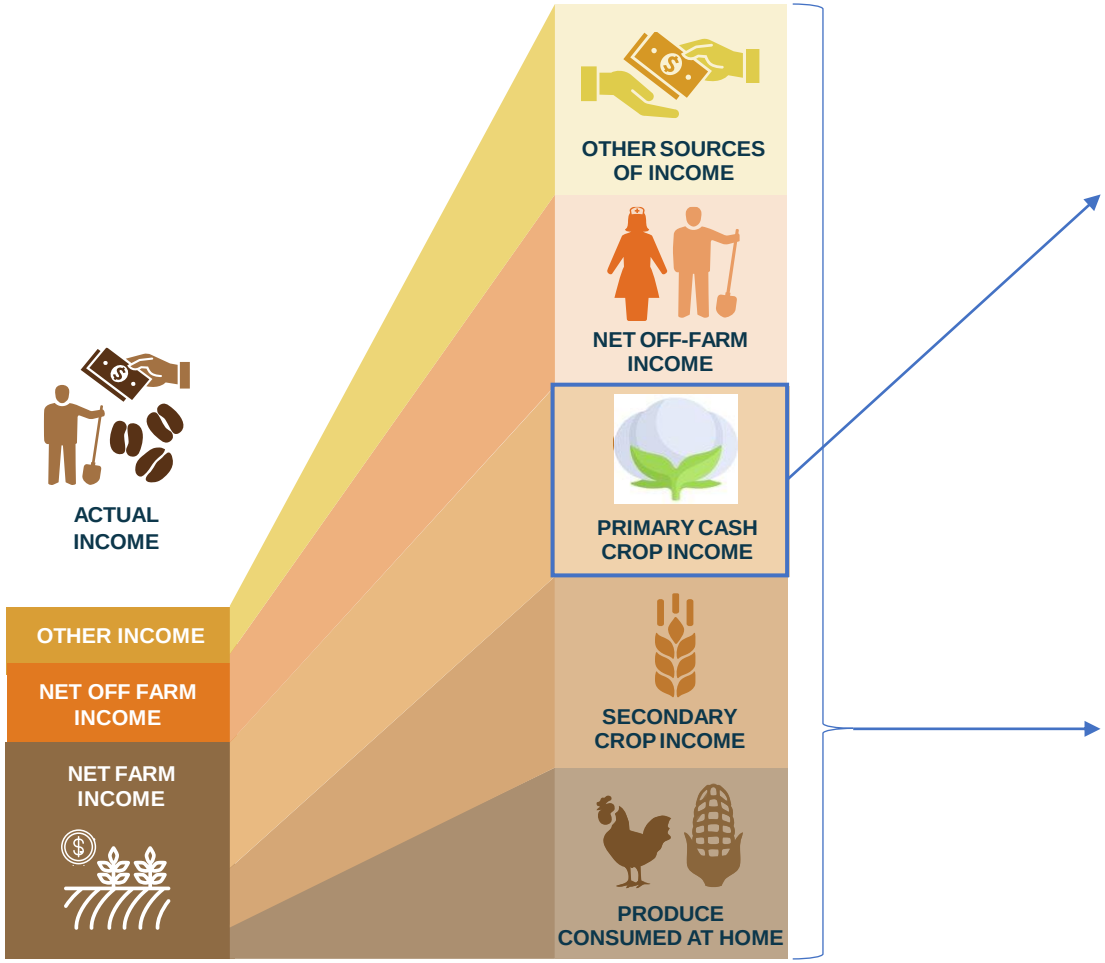
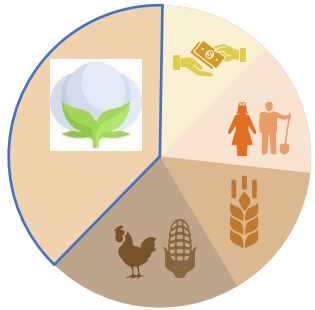


Detailed gross margin calculations for cotton

Estimation of contribution of different sources to total household income

Income share from cotton



Income share of
- Maize
- Other agric. products
- Livestock & products
- Off-farm
- Land leased out
- Remittances
- Home consumption

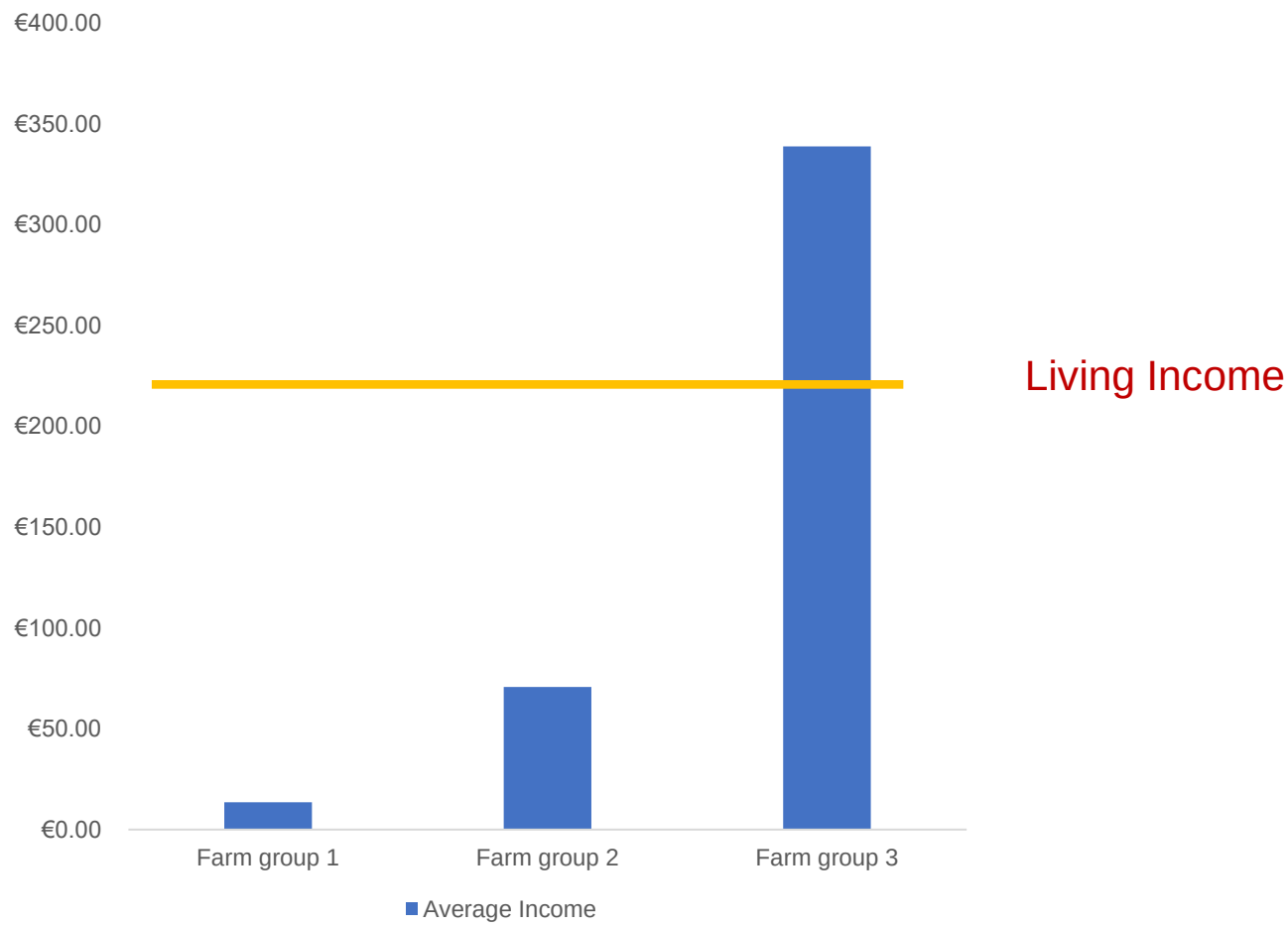
Results: living income gap

Average income: **106,3 €** / month

LI threshold in the North and Far North: **217,32 €** / month

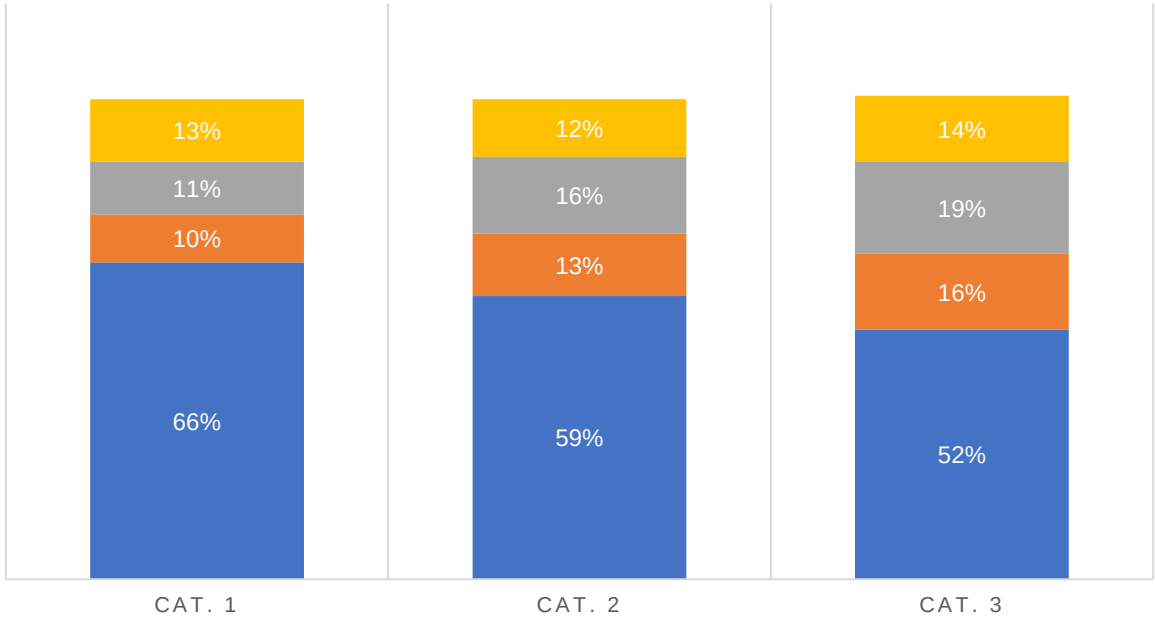
Income gap: **111,02** € / month (104 %)

	Average Income	Income gap	Average productivity kg/ha
Farm gr 1	13,63 €	203,63 € (1494%)	1,137 kg/ha
Farm gr 2	70,71 €	146,61 € (207,3%)	1,146 kg/ha
Farm gr 3	338,69 €	no income gap	1,591.2 kg/ha



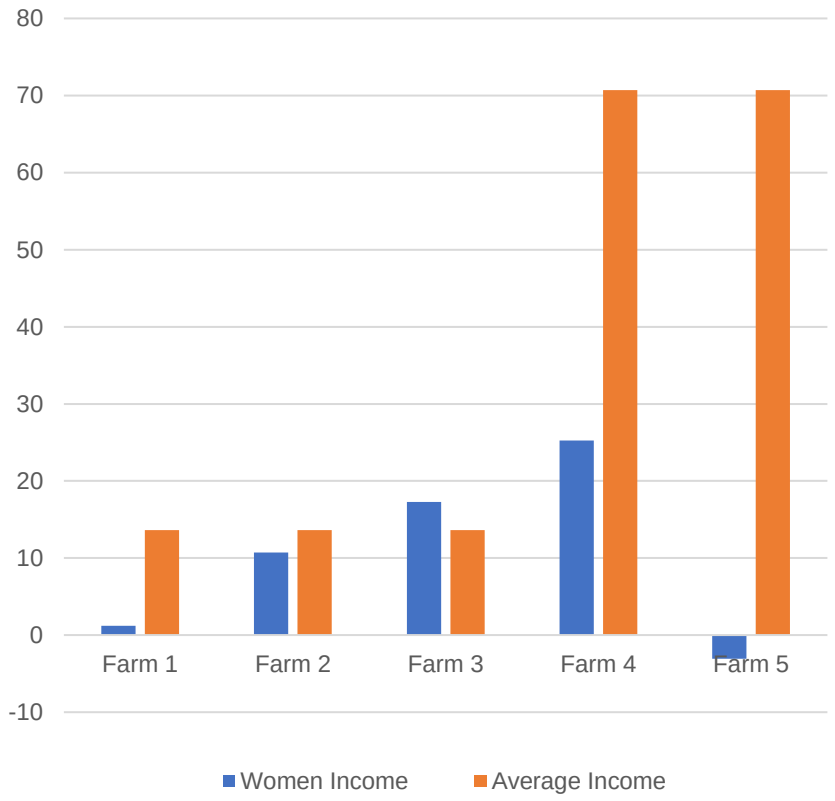
Results: living income gap

- Cotton is the biggest source of income in all farm groups
- Farm group 1 has the highest share of cotton income (66%) and the lowest average income
- Farm group 3 has the lowest share of cotton income (52%) and the highest average income

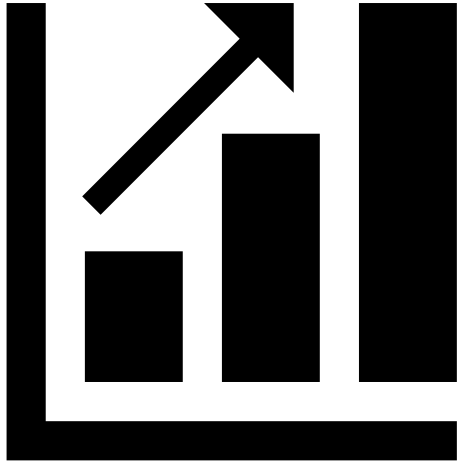


Results: gender analysis

- The income of farms managed by women is lower than the average farm income per category.



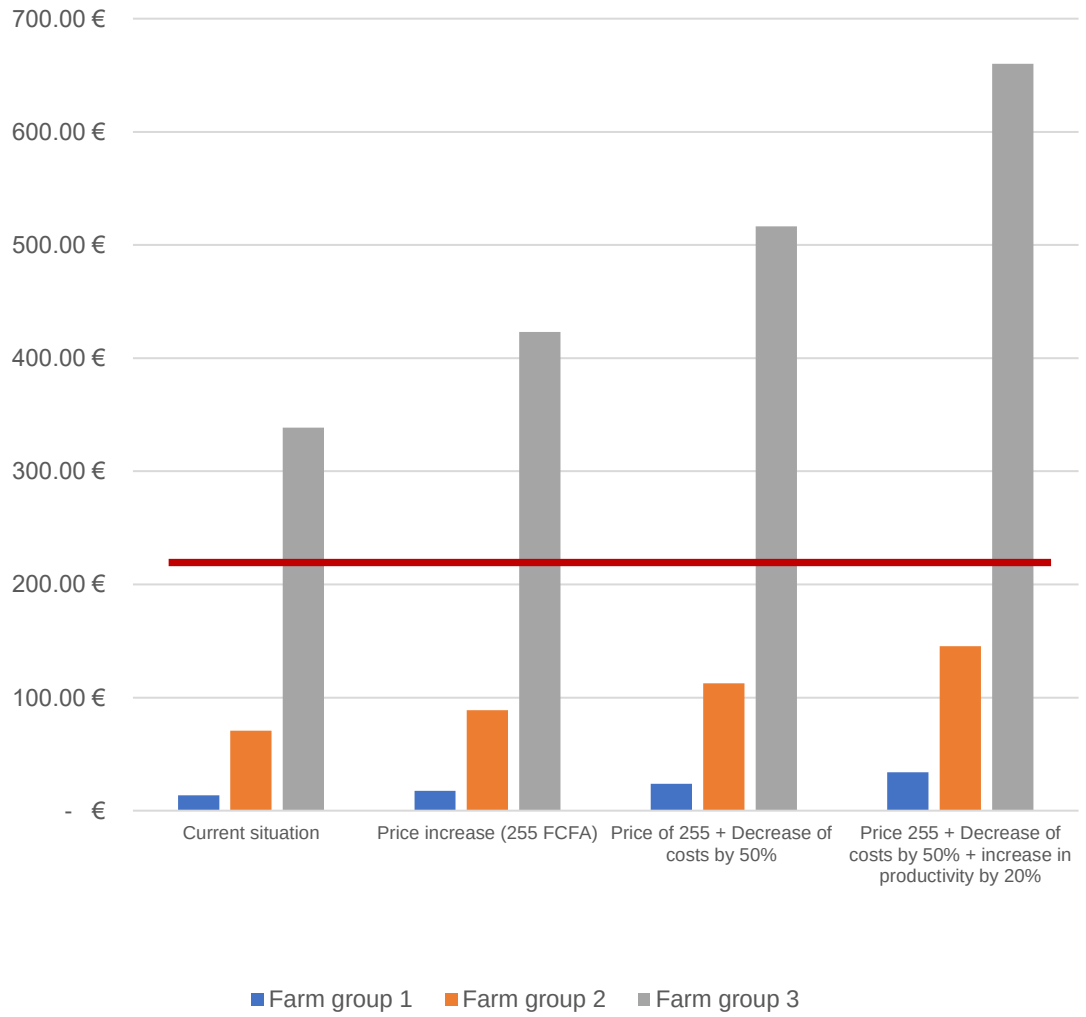
How to close the gap?



Simulation: Combination of increase in cotton price, decrease of input costs and higher productivity

Price increase to 255 FCFA/kg (0,39 €), decrease of input costs by 50% and increase of productivity by 20%.

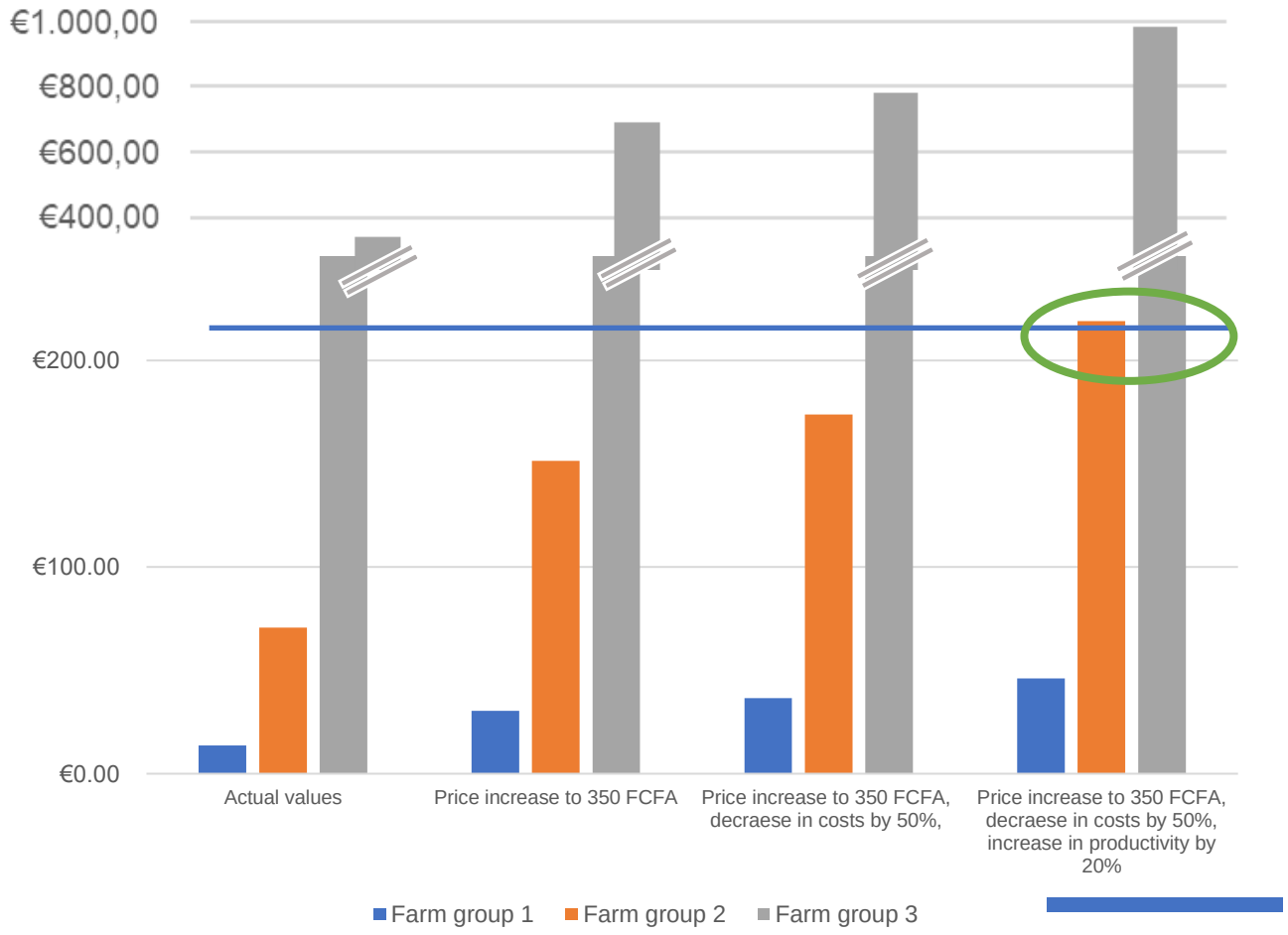
	Actual values	Price increase (255 FCFA/kg)	Price 255 FCFA/kg + Decrease of costs by 50%	Price 255 FCFA/kg + Decrease of costs by 50% + increase of productivity by 20%	
	Average income	Average income	Average Income	Average income	Income gap
Farm gr 1	13,63 €	17,50 € **(+28,39%)**	23,84 € **(+74,9%)**	33,91 € **(+148,78%)**	183,41 € (-10%)
Farm gr 2	70,71 €	88,96 € **(+25%)**	112,50 € **(+59,1%)**	145,42 € **(+105,65%)**	71,90 € (-65%)
Farm gr 3	338,69 €	423,20 € **(+24,9%)**	516,41 € **(+52,47%)**	660,08 € **(+94,89%)**	



Simulation: Increase in price for organic cotton, decrease in costs, increase in productivity

Price increase to 350 FCFA/kg (0,53 €), decrease of input costs by 50% and increase of productivity by 20%.

	Actual values	Price increase to 350 FCFA/kg	Price increase to 350 FCFA/kg + decrease in costs by 50%,	Price increase to 350 FCFA/kg + decrease in costs by 50% + increase in productivity by 20%	
	Average Income	Average Income	Average Income	Average Income	Income Gap
Farm gr 1	13,63 €	30,42€ (+123%)	36,6 € (+169%)	46,01 € (+238%)	171,3 (-16%)
Farm gr 2	70,71 €	151,37€ (+114%)	173,81 € (+145,8)	218,98 € (+210%)	**No gap**
Farm gr 3	338,69 €	690,77€ (+104%)	783,99 € (+131%)	981,19 € (+190%)	



Conclusion

- Especially for **smallholder farmers** with only 1 ha or less **it is very difficult to achieve living income through cotton production**, even if the yield levels would rise by 20% or the prices for seed cotton would rise to 350 FCFA per kg.

- **Certification** could be a way to close the gap for bigger farmers (>1 ha).

- Working on cotton productivity stays inevitable as for **many producers, cotton is the main source of (cash) income**

- Producers generate the majority of income from cotton but are still **growing alternative crops** (diversification as an important principle for resilience).

→ **Important to follow a holistic approach** (productivity, prices, resilience, costs etc.) in order to get close to the threshold

Proposal for project implementation

What can the project do to support smallholder cotton farmers?

- **Implement measures to increase productivity**, like trainings on Good Agricultural Practices (especially relevant for producers with only 1 ha or less)
  - Biodiversity
  - Integrated Pest Management
  - Organic fertilizer
- **Increase resilience** through
  - Diversification and crop rotation
  - Promotion of organic cotton production
    - to decrease input costs like fertilizer and herbicides
    - to achieve a higher cotton price
    - to ensure a high and stable productivity also in the long run
  - Farmer Business School
- Focus on **women participation** in trainings and **women empowerment**
- **Land rights**
- **Digitization and youth**

Limits of the methodology

- Different methods of calculating income (macro-data vs. data collected on the ground)
- Reference Values are not location-specific within countries and represent the situation in typical rural (urban) locations
- The measurement is limited to income per household not per individual
- Sample size is very small
- Low cotton prices because of COVID (season 2020/21 as reference)

Thank you for your attention!

Any questions?

Contact

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Upcoming engagement opportunities

LIVING INCOME INTERACTIVE WORKSHOP #2

Early October

Registration to be Opened Soon
(https://www.living-income.com/springlivingincomeworkshop)

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Oil palm landscape © RSPO

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