



Generic Example for Calculating Household Income

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Living Income CoP - Webinar

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Sector Programme Sustainability Governance of Global Value Chains
Sustainable Cocoa Business Programme,
Sector Network Rural Development (SNRD) Africa



Content

- 1 Introduction/Recap
- 2 Connecting Living Wage and Living Income
- 3 Example of Calculating Household Income
- 4 Conclusions
- 5 Annex (will not be presented)

Introduction: Recap Definition

The “Living income” is the net income of a household earned/generated under conditions of decent work, sufficient to enable all members of the household to afford a decent standard of living”.

Elements of a decent standard of living include: food, water, housing, education, health care, transport, clothing, and other essential needs including provision for unexpected events.

(Living Income Practitioners’ Workshop hosted by ISEAL & GIZ, Eschborn, February 2015)

Introduction: What do we need to know?

1) A living income benchmark

2) The actual income

3) The gap



With this, we deal today

Generic example: calculating the household income



Two important yardsticks/benchmarks

1. **Living income (LI) benchmark** should be compatible to living wage (LW) benchmark;
 - a. as **common dominator a work time unit** is proposed
 - b. This is compared with the actual income created by one work time unit; (see next slide D.3)
2. **Available actual income per household member per time unit** over a defined period: e.g. a year, month, week, day of a year; (see next slide D.4)

Why these two yardsticks?

- different household activities contribute differently to the household income
- A particular activity (work) may not be undertaken all year round, however, household members need income all the year round
- An outside company can only be made responsible for the pricing of the agr. commodity he/she is buying

Generic example: what is income (simplified)?

- A. Revenue (quantity x price)
- B. Costs (by cost categories)
 - Variable input costs: fertilizer, pesticides, etc.
 - Hired labour costs
 - Fixed costs (e.g. depreciation for tools, land rent)
- C. Household labour input (in monetary value / in working units)

Results:

D1. Enterprise income = $A - B - C$ (monetary value)

D2. Household income = $A - B$

D3. Household income per working unit, e.g. $(A - B)/C$ (in working units)

D4. Household income per time unit; e.g. $(A - B)/365$ days per year

Generic example: calculating household income

(in total household income per year)

Categories in fictive currency units (CU)	Crop X	Livestock Y	Off-farm Z	Total, Household
A. Revenue	800	600,0	350	1750
Input costs (seed, fertilizer)	20	0	40	60
Hired labour costs	30	40	30	100
B. Total cash costs (b)	50	40	70	160
C1 HH labour input in WD	100	200	150	450
C2 HH labour input in CU	120	240	180	540
Total costs incl. HH labour	170	280	250	700
D. Income				
D1 Enterprise income $D1 = A - B - C2$	630	320	100	1050
D2 HH income $D2 = A - B$	750	560	280	1590
D3 HH income per WD	7,50	2,80	1,87	3,53
D4 HH Income per day	2,05	1,53	0,77	4,36

Income of Activity Groups

X Crops: 630, **750** CU
 Y Livestock: 320, **560** CU
 Z Off-farm: 100, **280** CU
 HH: total 1050, **1590** CU

Income of Activity Groups/per WD

X Crops: 7,50 CU
 Y Livestock: 2,80 CU
 Z Off-farm: 1,87 CU
 HH: total: 3.53 CU

Income of Activity Groups/per day

X Crops: 2,05 CU
 Y Livestock: 1,53 CU
 Z Off-farm: 0,77 CU
 HH: total: 4,36 CU

CU = currency unit
 WD = working day

D2 (household income) is important for our purposes
 D1 (enterprise income) is important if the farm is managed like an enterprise

Calculating household income, Case 1

Household income with adequate farm size

Categories in fictive currency units (CU)	Crop X	Livestock Y	Off-farm Z	Total, Household
A. Revenue	800	600,0	350	1750
Input costs (seed, fertilizer)	20	0	40	60
Hired labour costs	30	40	30	100
B. Total cash costs (b)	50	40	70	160
C1 HH labour input in WD	100	200	150	450
C2 HH labour input in CU	120	240	180	540
Total costs incl. HH labour	170	280	250	700
D. Income				
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D3 HH income per WD	7,50	2,80	1,87	3,53
D4 HH Income per day	2,05	1,53	0,77	4,36

CU = currency unit
WD = working day

Assumptions

6 HH members

Available work force in farm:

1 husband = 270 WD

1 wife = 135 WD

1 elderly person = 45 WD

3 children = 0 WD

total = 450 WD

HH labour force fully employed

Living income benchmark

3 CU/day/6 persons

Conclusion

- Activities contribute differently to HH income
- Income/WD of X (crops) above living income benchmark
- Income for Y and Z below benchmark
- Income for total household still above benchmark

Calculating household income, Case 2

Household income with inadequate farm size (half the size of case 1)

Categories in fictive currency units (CU)	Crop X	Livestock Y	Off-farm Z	Total, Household
A. Revenue	400	300,0	175	875
Input costs (seed, fertilizer)	10	0	20	30
Hired labour costs	15	20	15	50
B. Total cash costs (b)	25	20	35	80
C1 HH labour input in WD	50	100	75	225
C2 HH labour input in currency	60	120	90	270
Total costs incl. HH labour	85	140	125	350
D. Income				
D1 Enterprise income	315	160	50	525
D1 = A – B – C2				
D2 HH income	375	280	140	795
D2 = A – B				
D3 HH income per WD	7,50	2,80	1,87	3,53
D4 HH income per day	1,03	0,77	0,38	2,18

Assumptions

6 HH members

Available work force in farm:

1 husband = 270 WD

1 wife = 135 WD

1 elderly person = 45 WD

3 children = 0 WD

total = 450 WD

HH labor not fully employed

Living income benchmark

3 CU/day/6 persons

Conclusion

- D3: HH income per WD does not change
- D4: HH income is not sufficient to sustain HH to a living income level
- The problem here is no full employment (e.g. small farm size)

CU = currency unit
WD = working day

Further thoughts

- Now income per work unit can also be related to production
 - E.g. kg cocoa produced per work unit
 - E.g. ltr of milk produced per work unit
- ➔ And compared with actual prices
- ➔ Thus further benchmarks can be established such as necessary prices per production units

Conclusions

- Different activities in a household contribute differently to the total household income
- Income per Work Unit is proposed as a bridge (common denominator) between Living Wage and Living Income
- Under partial employment condition, or partial contribution of the target activity to total income, the income from the target activity should proportionally contribute to a living income



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Thank you!

Annex: Case from Ghana Targeting Cocoa

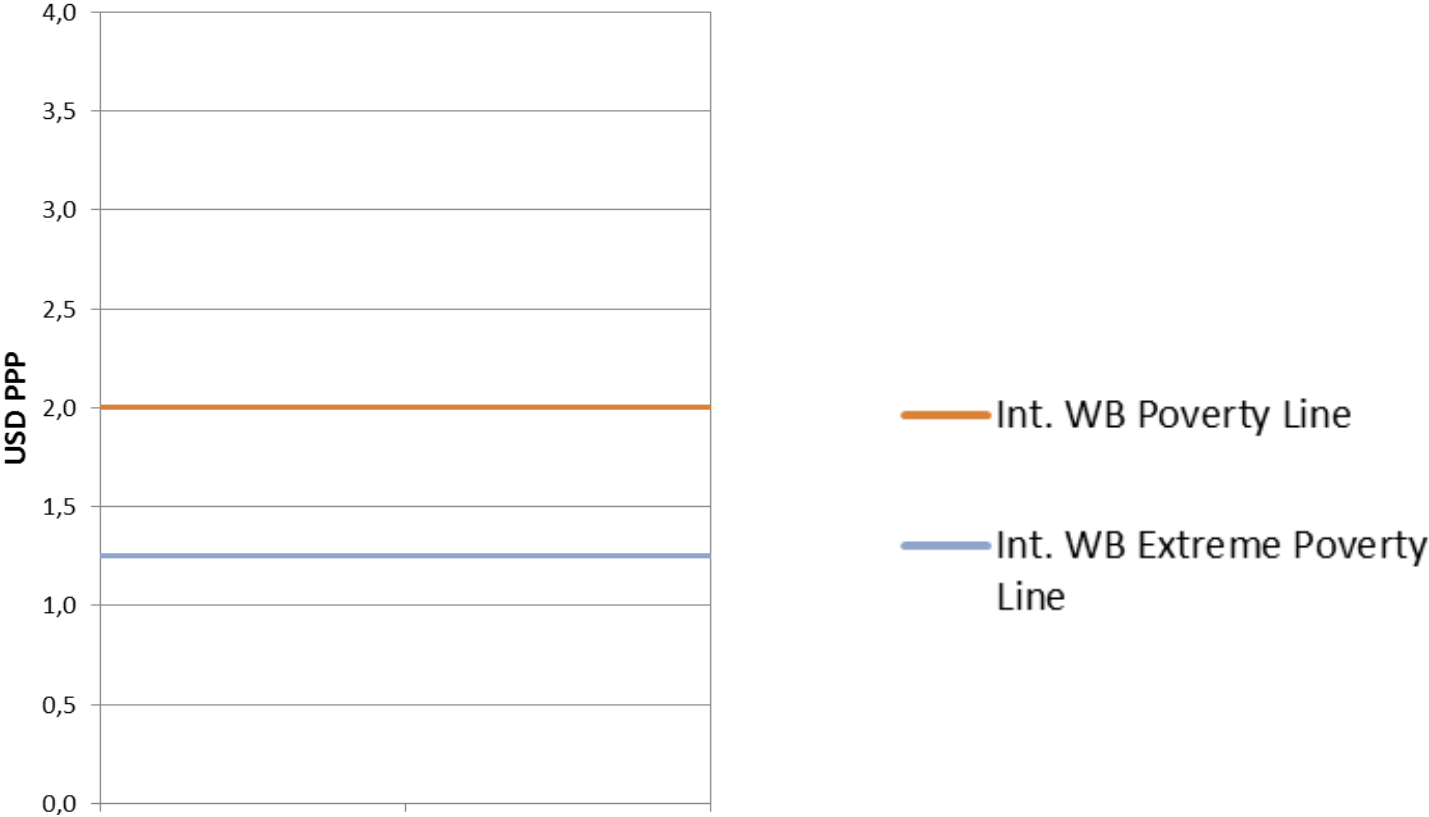
The following example from Ghana shall show the different contributions from different household activities (working outside household; groundnuts, maize, cassava and cocoa under two different scenarios of household and farm size.

However, calculations were made against one yardstick only, i.e. income per time unit (per person per day of a year) against World Bank poverty line; and not yet income per work unit.

Trying to gain some insight along a real example from cocoa in Ghana

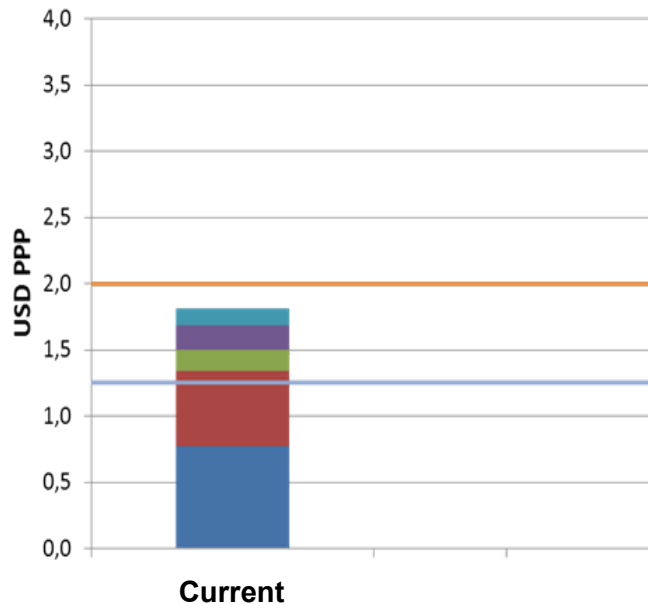
- Data were taken
 - from the Sustainable Cocoa Business Program West Africa
 - World Cocoa Foundation (WCF)
 - „Harvard study“
- Were calculated and interpreted by M.-T. Findeisen (an intern) in Ghana in 1st Quarter 2013 under guidance of 2 GIZ projects involved
- However, calculations were only made against one yardstick, i.e. income per time unit (per person per day), and not yet income per work unit

International poverty lines as reference



HH Income of diversified cocoa model farms (per person per day)

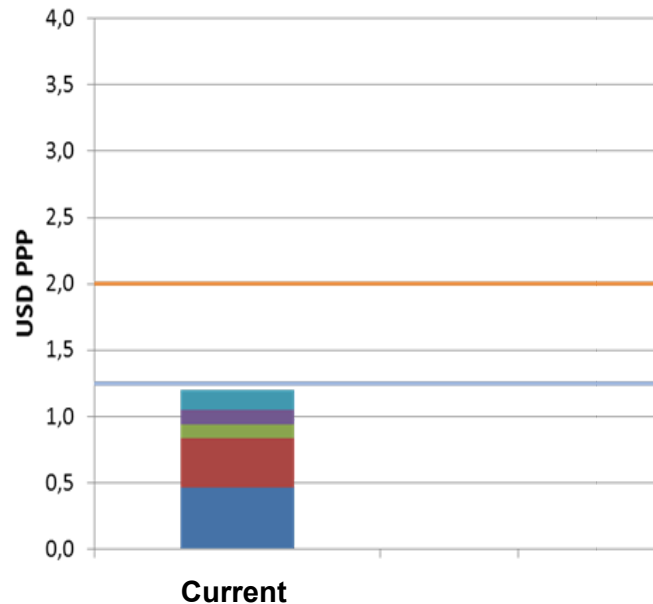
Scenario 1 (with potential)
6 HH members
3.6 ha total farm size



Production

(constructed on WCF Study & SCB Programme data)

Scenario 2 (representative)
5 HH members
2.0 ha total farm size



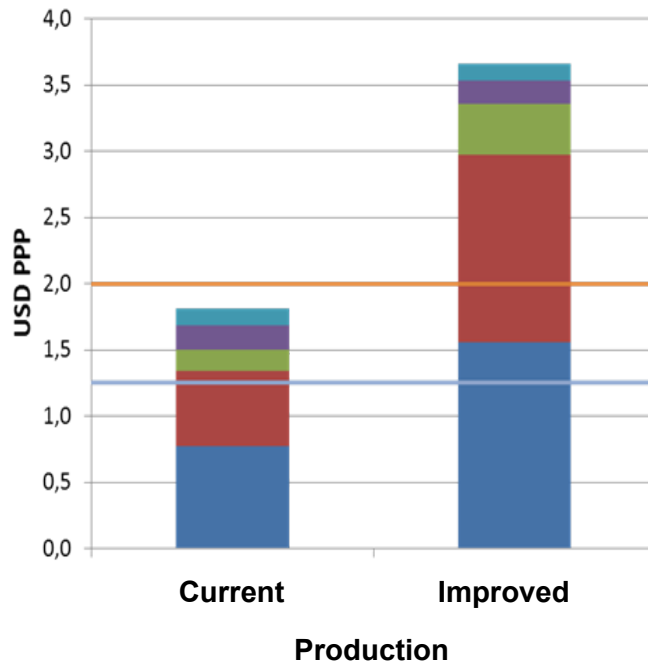
Production

(constructed on Harvard Study & SCB Programme data)

- External
- Groundnut
- Maize
- Cassava
- Cocoa
- Int. WB Poverty Line
- Int. WB Extreme Poverty Line

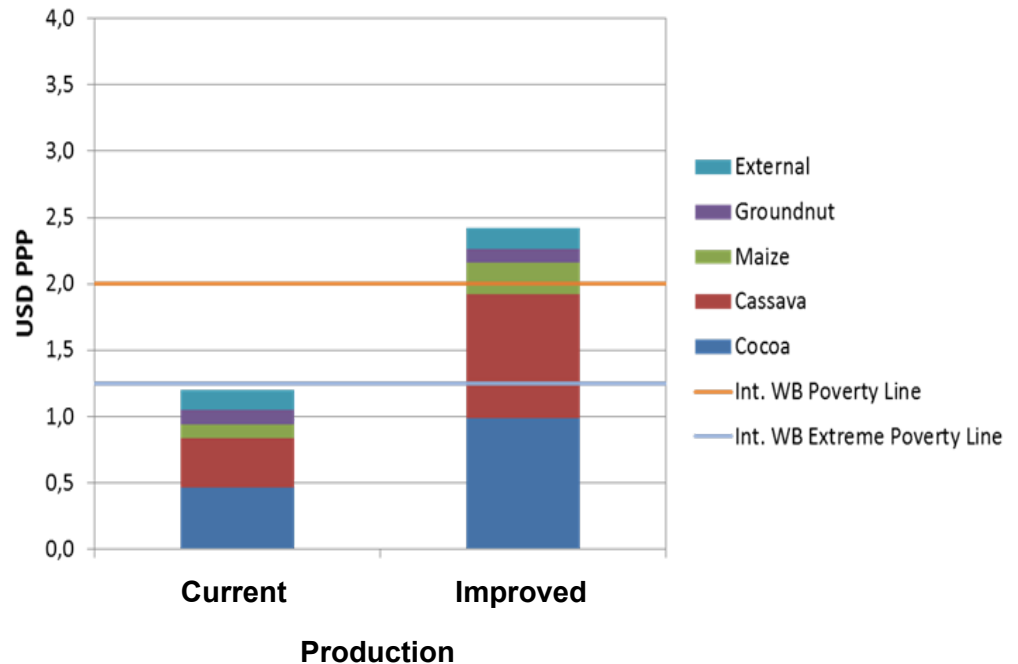
HH Income of diversified cocoa model farms (per person per day)

Scenario 1 (with potential)
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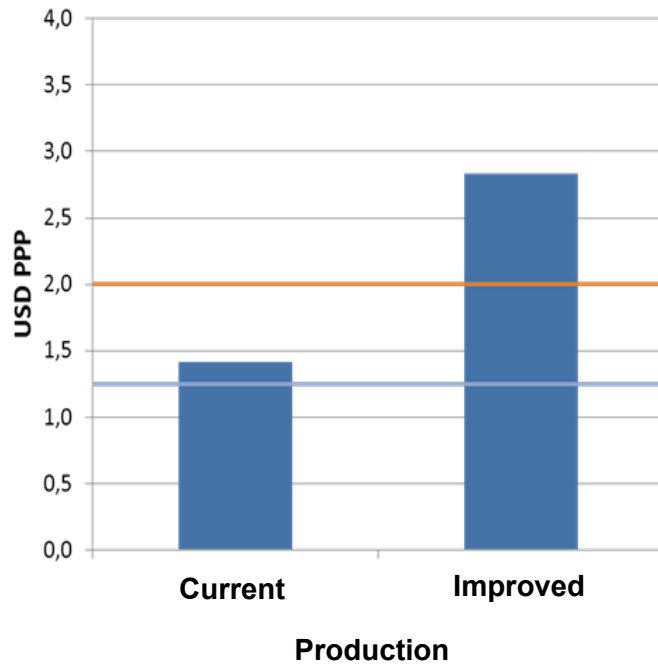
Scenario 2 (representative)
5 HH members
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(constructed on Harvard Study & SCB Programme data)

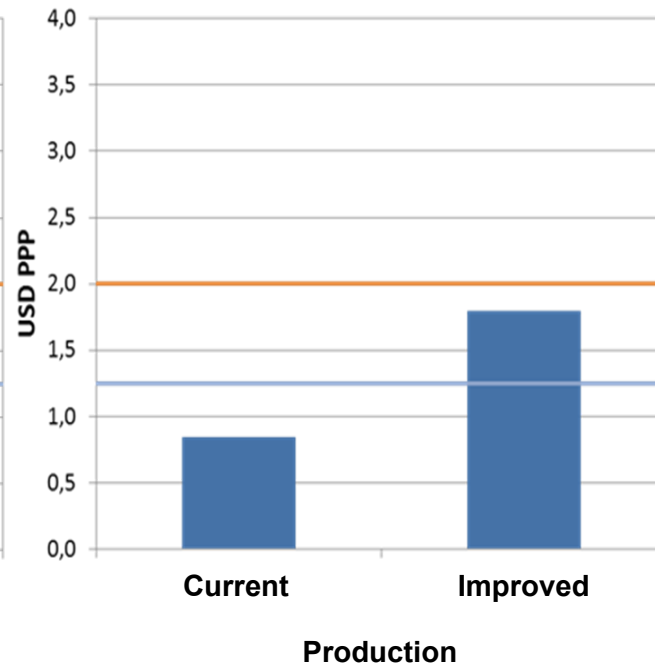
Proportional income from area under cocoa (per person per day)

Scenario 1 (with potential)
3.3 HH members
1.98 ha cocoa plot size



(constructed on WCF Study & SCB Programme data)

Scenario 2 (representative)
2.75 HH members
1.1 ha cocoa plot size



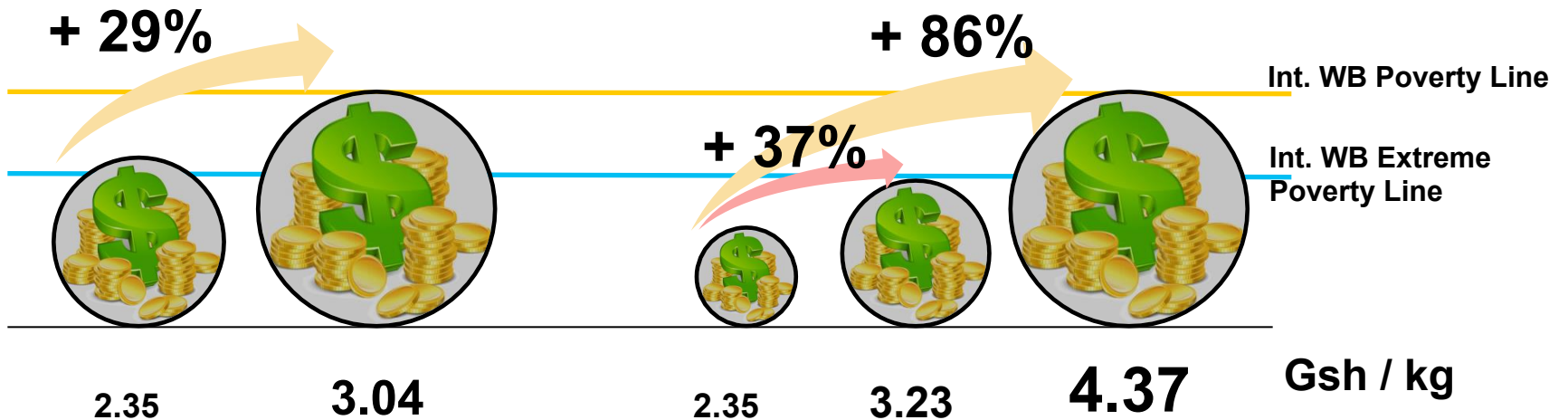
(constructed on Harvard Study & SCB Programme data)

■ Cocoa
— Int. WB Poverty Line
— Int. WB Extreme Poverty Line

Price increase needed to reach poverty line

Scenario 1 (with potential)
 3.3 HH members
 1.98 ha cocoa plot size

Scenario 2 (representative)
 2.75 HH members
 1.1 ha cocoa plot size



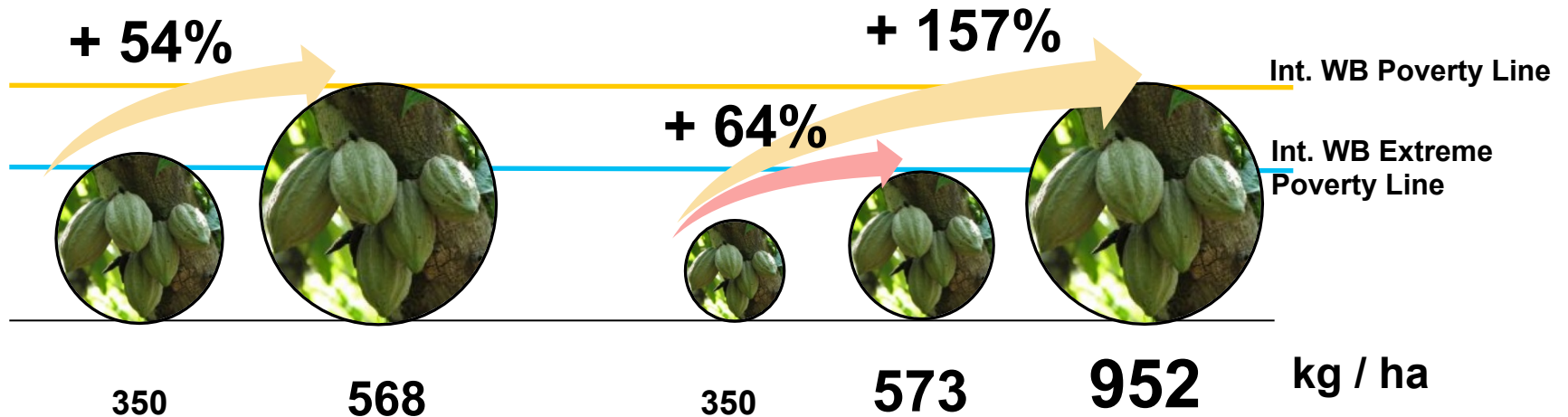
(constructed on WCF Study & SCB Programme data)

(constructed on Harvard Study & SCB Programme data)

Productivity increase needed to reach poverty line

Scenario 1 (with potential)
3.3 HH members
1.98 ha cocoa plot size

Scenario 2 (representative)
2.75 HH members
1.1 ha cocoa plot size



(constructed on WCF Study & SCB Programme data)

(constructed on Harvard Study & SCB Programme data)