

Evaluating the Additionality of a Belgian Development Program: the Case of BTC Supports to Agricultural Entrepreneurs in Benin

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4 May 2017, DGD (Brussels)

Private Sector Financing

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Background: Entrepreneurship and Finance

- Entrepreneurship is an important engine for economic development
- Micro, Small and Medium Size Enterprises (MSME) account for 90% of job creation in developing countries
- Finance constraints undermine their growth

Background: Entrepreneurship and Finance

- Entrepreneurs in agriculture, especially, face severe difficulties to finance term investments
- Development cooperation should play a catalytic role
- In 2001-2013, private sector support account for 18% of Belgium non-debt ODA
- Of which 85% is channelled to **agriculture**

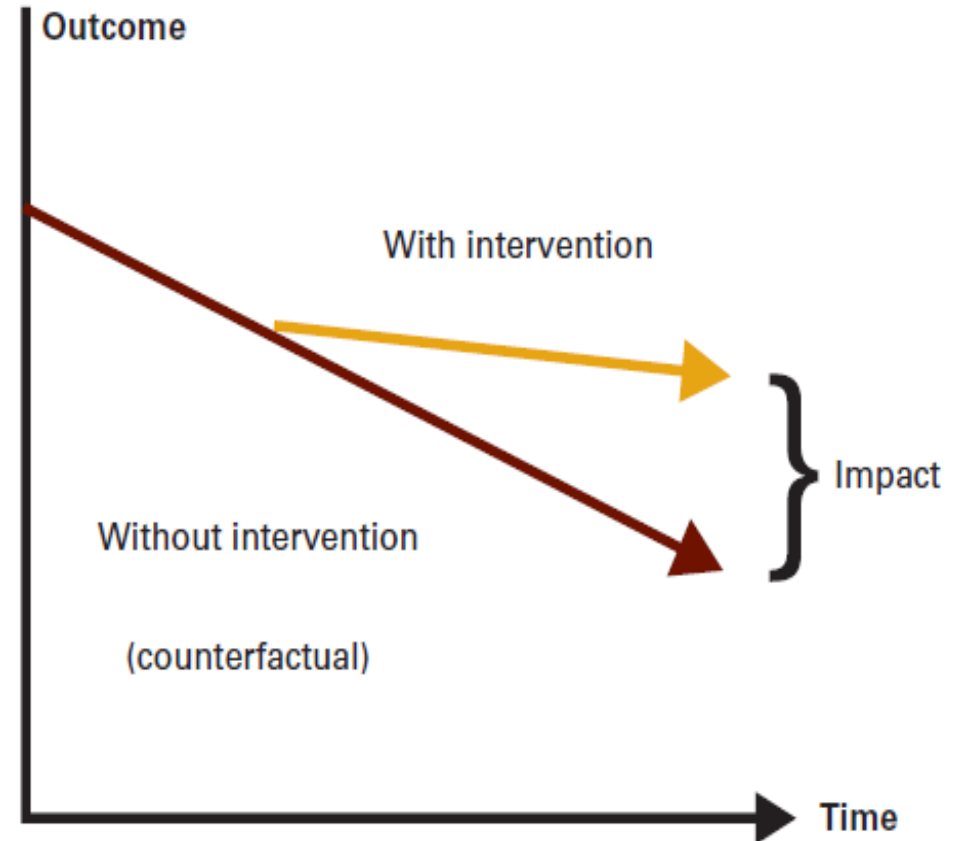
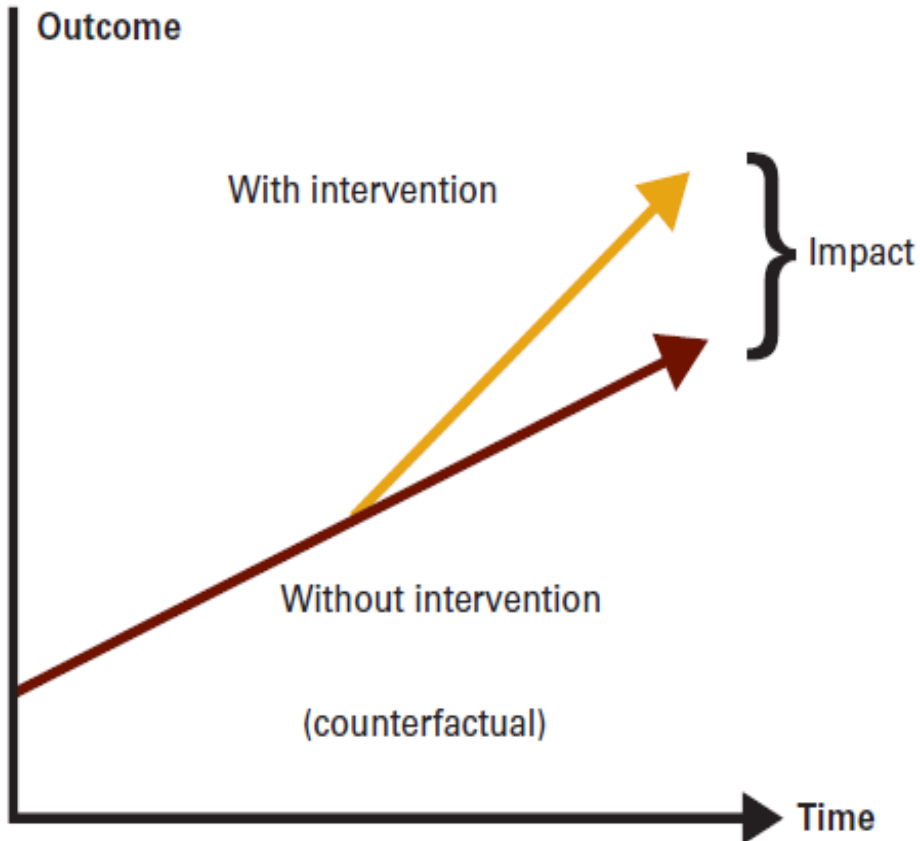
Policy (Research) Objectives

- A deep evaluation of welfare impact of the supports to entrepreneurs is crucial (e.g. OECD, 2007)
- Important to understand their **Additionality!!!!**
- Help to scale-up and adapt existing programs
- Avoid practices & instruments that have little return

Methodological Requirements

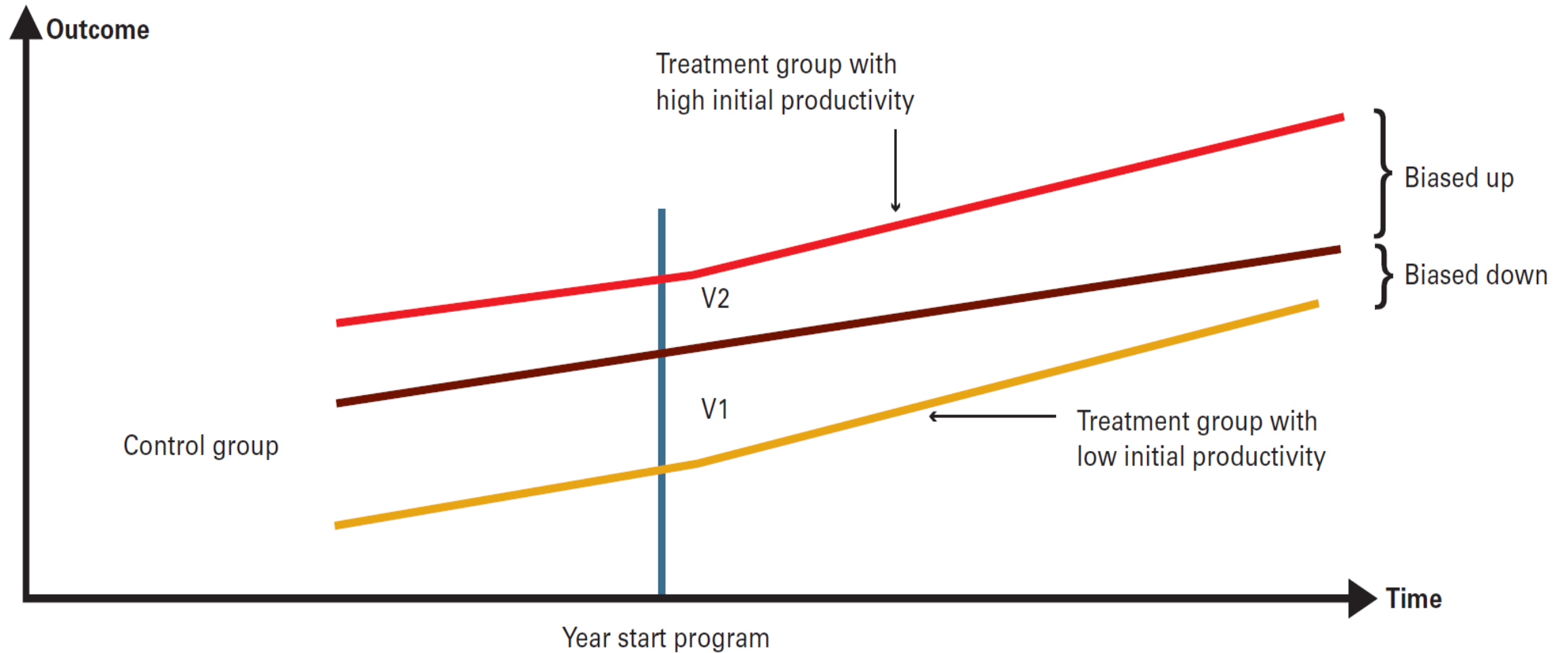
1. Data availability over time of good quality
2. Need to analyze 2 groups of entrepreneurs
 - i. Treatment group
 - ii. Control group

Control and intervention groups



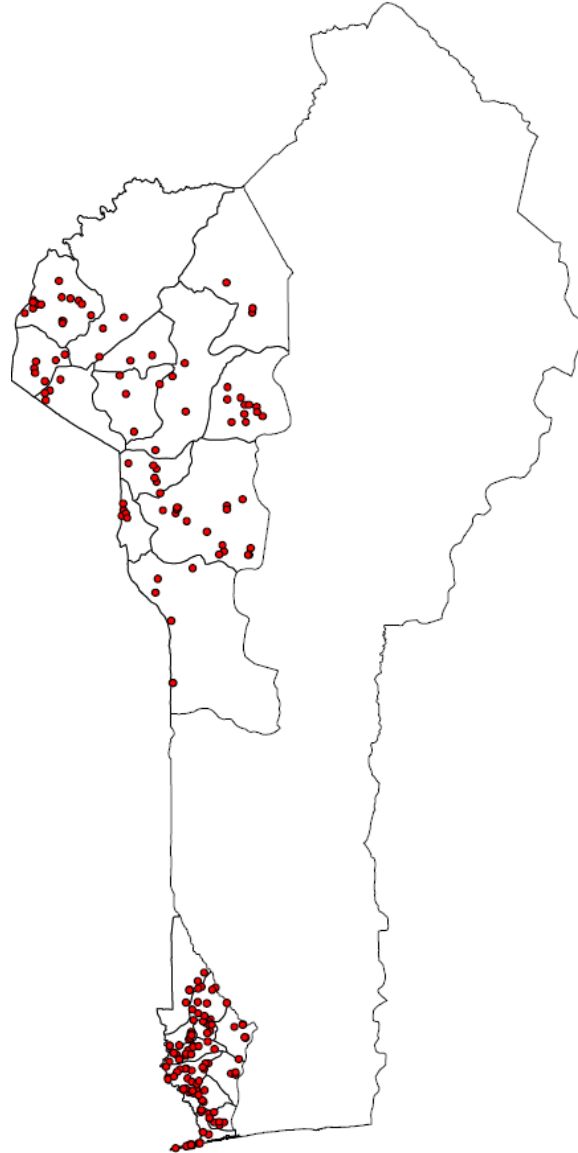
Source: López-Acevedo and Tan (2011).

Need to account for Unobservables



Source: López-Acevedo and Tan (2011).

BTC Programs in Benin as Case Study



1. Two Regions

- North: Atacora Donga (AD)
 - 13 communes
- South: Mono Couffo (MC)
 - 12 communes

2. Three Crops

- Cashew
- Rice
- Vegetable

Past BTC-Benin (FAFA and FAIA) Programs

- Subsidies & technical support to entrepreneurs
- We were faced with many methodological challenges
- Groups definition was problematic
- We cannot infer any observed difference in performance of entrepreneurs to the BTC project
- Also were data quality problems

New BTC-Benin Program: PROFi (2016)

- PROPFI: a good case study
- PROFi: BTC provides Subsidies & technical supports to **organizations** of entrepreneurs
- BTC Selection process: exclusion and prioritisation criteria
- BeFinD designs a Randomized Evaluation of PROFi

Outline

1. BTC Framework and Selection process
2. Evaluation design
3. Baseline survey design
4. Baseline preliminary findings
5. Challenges
6. Concluding remarks

1.

BTC Framework and Selection Process of Beneficiaries

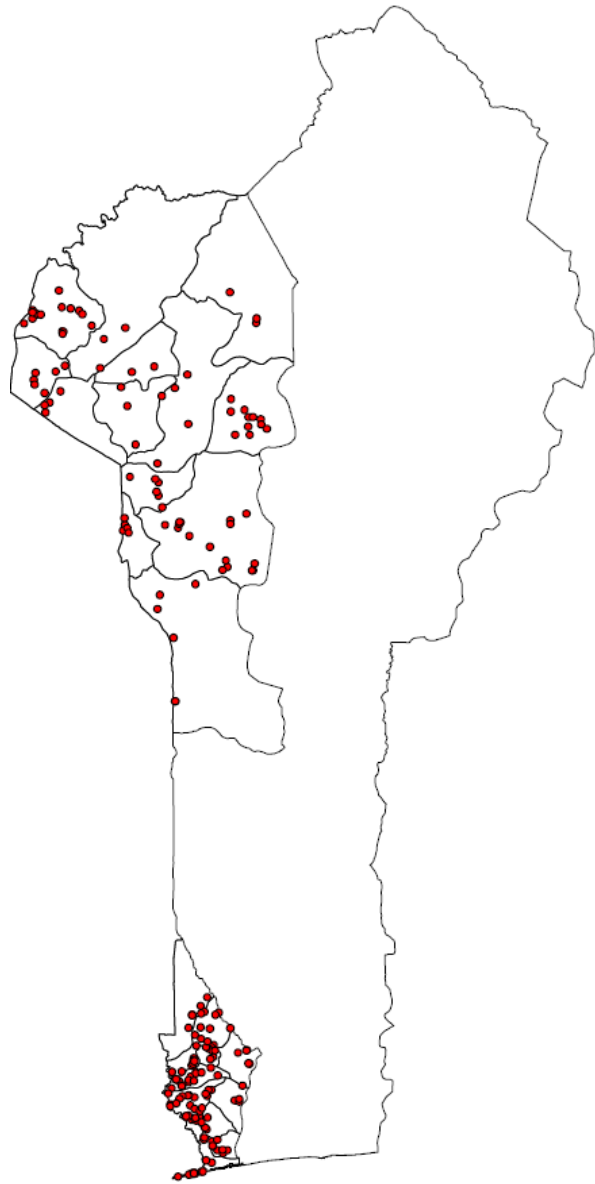
1. BTC Framework

- Three important steps in BTC support
 1. Selection of beneficiaries
 2. Audits and business plans
 3. Support are delivered

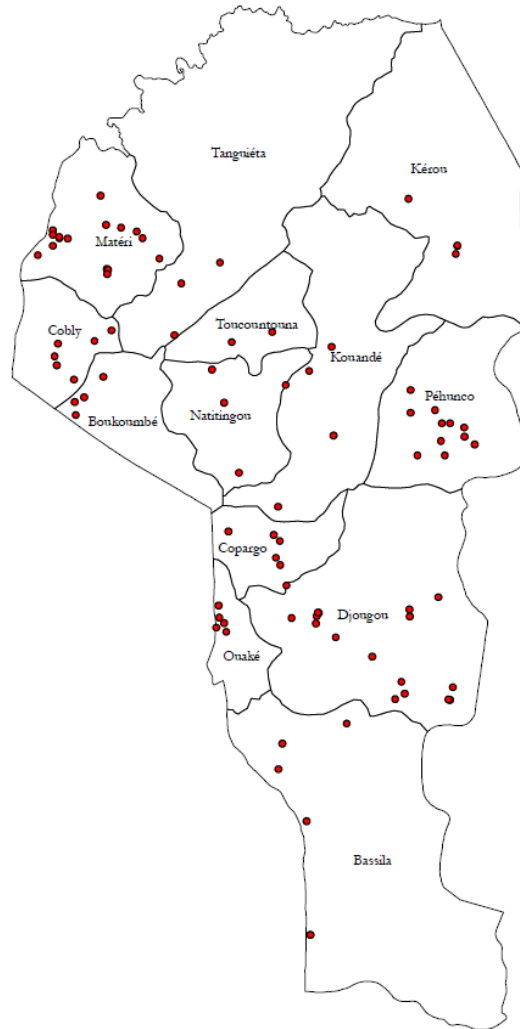
1.1 Selection Process: 4 Phases

	Atacora-Donga	Mono-Couffo
I) Applications	213	272
II) Pre-selection	191	231
III) Field Visits	124	117
IV) Final (CRA)	119	108

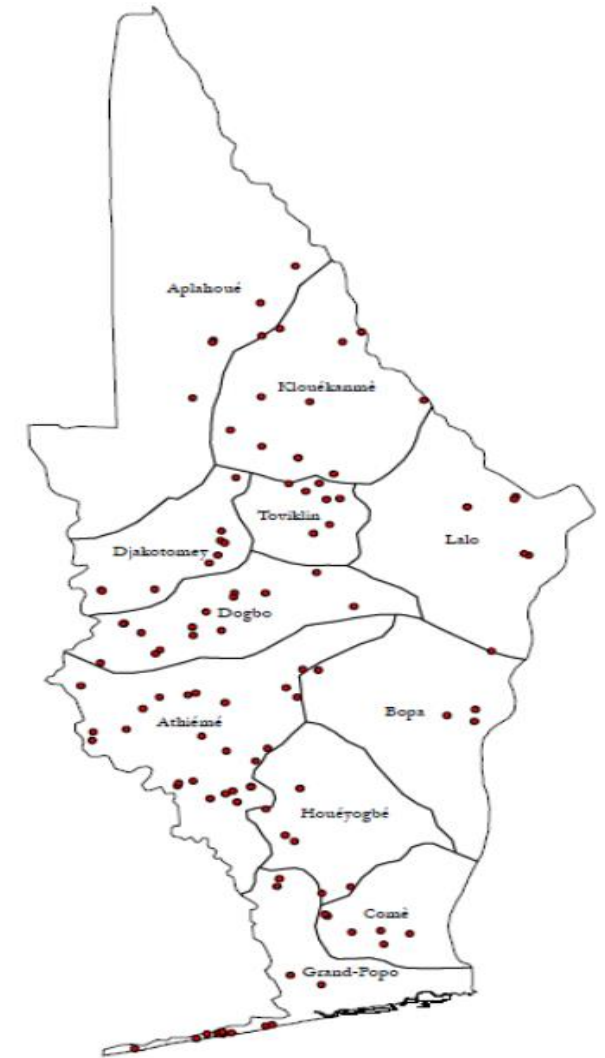
1.1 Localisation of MIC Plots



Atacora-Donga



Mono-Couffo



1.2 Pre-selection

	MC		AD	
VARIABLES	select1	dy/dx	select1	dy/dx
Rice	-0.552** (0.298)	-0.08261	1.637*** (0.772)	0.249374
<u>Anacarde</u>			-0.120 (0.967)	-0.01827
Transformation			-0.648 (0.607)	-0.09866
<u>Commercialisation</u>			-0.270 (0.723)	-0.04114
Formality	0.761** (0.370)	0.114009	1.018*** (0.337)	0.155019
Ln(Budget·Requested)	0.318** (0.159)	0.047586	0.944*** (0.275)	0.143798
Ln(Organization·Size)	-0.969*** (0.309)	-0.14517	0.248 (0.368)	0.037731
<u>Femelle·Membership·(%)</u>	1.889*** (0.349)	0.282909	-0.766 (0.739)	-0.11672
Commune	yes		yes	
Observations	240		121	

1.3 Field Visits in MC

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	
	select2	select2	select2	select2	select2	select2	select2	select2	select2	select2	dy/dx
Sales	1.153** (0.545)									1.216*** (0.444)	0.123704
Contract-formality-for-sales		0.907* (0.484)								0.524** (0.238)	0.053246
Experience-in-the-sector			1.110*** (0.363)							0.814*** (0.299)	0.082746
Non-household-labor				0.669* (0.393)						-0.0734 (0.457)	-0.00747
Female					0.599 (0.419)					0.401 (0.366)	0.040805
Realized-Investment						0.983*** (0.310)				0.435* (0.236)	0.044235
Environ-friendliness							1.278** (0.499)			0.320 (0.423)	0.032539
Gender-friendliness								1.053** (0.521)		-1.019 (0.790)	-0.10366
Formality-status									1.244*** (0.352)	0.249 (0.396)	0.025314
Rice	-0.739 (0.502)	-1.498*** (0.532)	-1.343** (0.586)	-1.232*** (0.477)	-1.277** (0.608)	-0.659 (0.568)	-1.399** (0.578)	-1.051* (0.578)	-1.326*** (0.476)	0.503 (0.559)	
Ln(Budget-Requested)	1.093* (0.596)	1.640** (0.697)	1.404** (0.567)	1.153** (0.554)	1.356** (0.613)	0.869 (0.584)	1.701** (0.685)	1.377** (0.631)	0.913 (0.599)	0.186 (0.363)	
Ln(Organization-Size)	0.0377 (0.351)	0.316 (0.317)	-0.0158 (0.377)	0.177 (0.372)	0.0440 (0.366)	0.345 (0.343)	0.0514 (0.343)	0.133 (0.389)	0.201 (0.378)	0.0951 (0.339)	
Constant	-20.04** (9.388)	-27.83** (11.51)	-23.76** (9.237)	-19.23** (9.134)	-21.91** (9.972)	-14.89 (9.231)	-29.15*** (11.25)	-24.01** (9.903)	-17.01* (9.607)	-8.946 (6.557)	
Commune	YES	YES	YES	YES	YES	YES	YES	YES	Yes	YES	YES
Observations	81	81	81	81	81	81	81	81	81	130	

1.3 Field Visits in AD

VARIABLES	(1)	(3)	(4)	(5)	(6)	(7)	
	select2	select2	select2	select2	select2	select2	dy/dx
Sales	1.868*						0.007418
	(1.078)						
Contract-formality-for-sales		2.687**					0.001176
		(1.180)					
Experience-in-the-sector			1.766				0.002957
			(1.370)				
Non-household-labor				1.456			0.008893
				(1.366)			
Environ-friendliness					1.150*		0.013672
					(0.685)		
Gender-friendliness						5.262**	0.044787
						(2.335)	
Rice	-4.732***	-2.605*	-6.787***	-4.208***			
	(0.843)	(1.464)	(2.032)	(0.593)			
Anacarde	-16.78***	-15.43***	-19.75***	-14.25***	-11.95***	-10.63***	
	(2.496)	(2.320)	(3.265)	(2.487)	(1.838)	(2.577)	
Transformation	-0.372	0.427	1.649	-0.130	-0.797	-0.418	
	(0.901)	(0.639)	(1.461)	(0.628)	(0.886)	(0.812)	
Commercialisation	6.401***	6.234***	7.366***	6.154***	5.590***	5.395***	
	(1.207)	(1.514)	(1.149)	(1.159)	(0.964)	(1.682)	
Ln(Budget-Requested)	0.949	0.606	1.331	0.959*	0.790	1.603**	
	(0.650)	(0.966)	(0.819)	(0.575)	(0.550)	(0.668)	
Ln(Organization-Size)	0.0706	0.108	-0.403	0.156	-0.0671	-0.347	
	(0.468)	(0.279)	(0.531)	(0.415)	(0.394)	(0.416)	
Commune	YES	YES	YES	YES	YES	YES	YES
Observations	59	59	59	59	59	59	

2.

Evaluation Design

2.1 Evaluation Design: Construction of 2 groups

- Total organizations to be evaluated: **195**
- Randomization level: commune & crop
- Half of organizations are assigned to the treatment group
- The other half serves as control group
- Groups are comparable according to the selection indicators
- 5 entrepreneurs are selected per organization → **975**
 - 3 in the council: president, secretary, treasury
 - 2 are randomly selected among the rest

2.2 Evaluation Design: Phase-in Approach

- **Phase 1:** treatment group will receive the requested materials and equipment
- **Phase 2:** control group will receive the requested materials and equipment
- Both groups will benefit from technical support
- Data: Baseline (2016), midline & endline (2017-2019)

3.

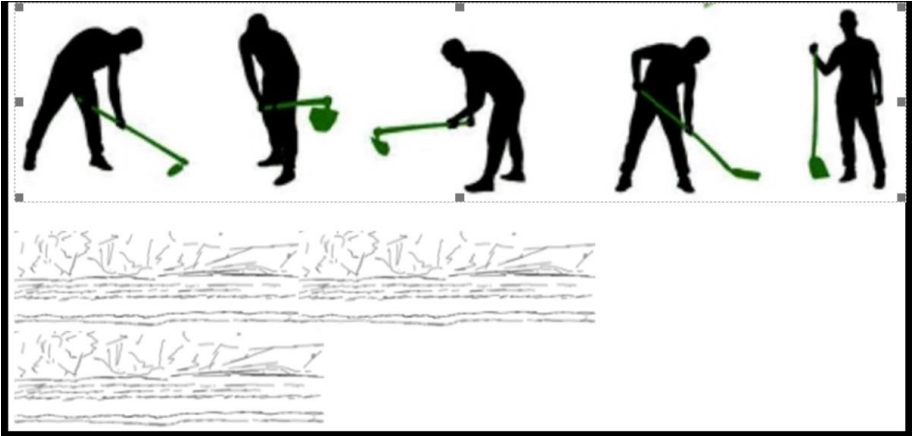
Baseline Survey Design

3. Baseline Survey Design

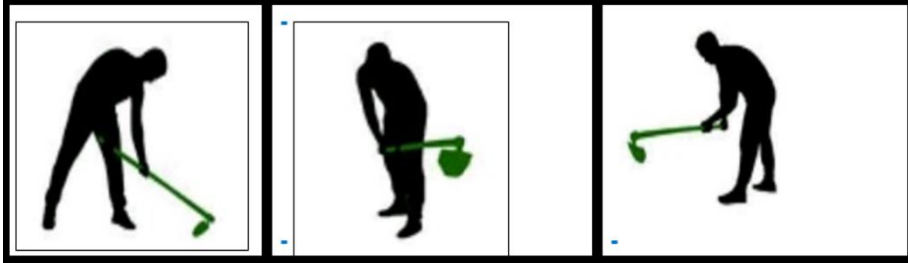
- Two types of questionnaires
 1. Focus group: organization level
 2. Individual: entrepreneur level
 1. Activities across: 2 seasons in AD and 3 in MC
 2. Activities on up to: 3 plots for the targeted 3 crops

3.1a Individual

Common



Shared



Individual



3.1b Individuals: Detailed questionnaire

- Land title & formalization
- Soil, erosion controls, and irrigation, water management
- Input use & technology adoption
- Fertilizer, pesticides/herbicides applications
- Farming practices/ Use of machines and farming equipment
- Family and hired labour
- Access to markets and information
- Access to common property resources
- Access to and use of agricultural services
- Access to finance

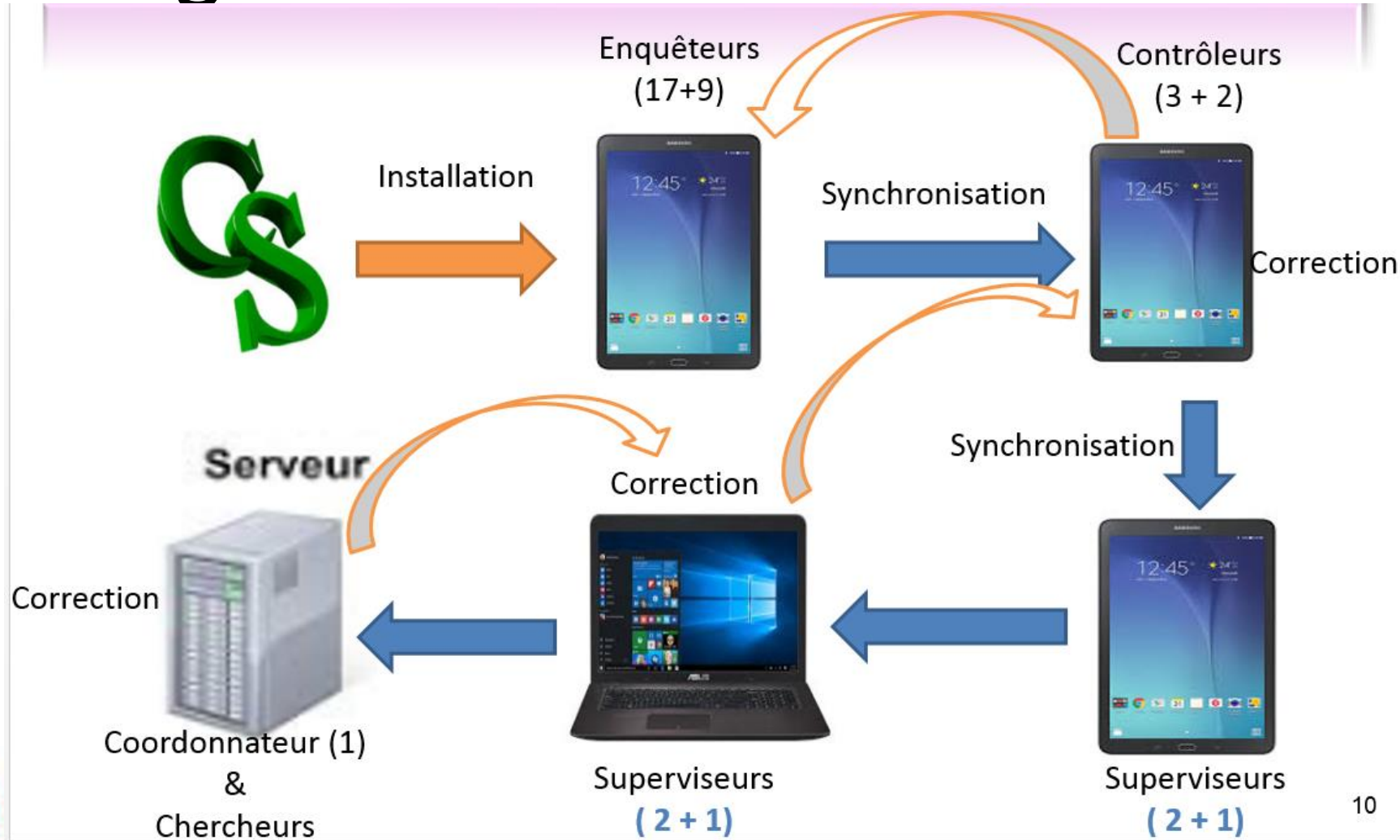
3.2 Primary BTC performance indicators

- Yield (*Rendement*) = Production over surface (kg/ha)
- Gross margin (**MB**)= Production value - input costs of seeds and fertilizers (**CFA**)
- Added value (**VA**)= Produce value - production costs (**CFA**)
- Profit (**RE**) = Produce value - all costs except external labour (**CFA**)
- Gain (**Benefice**)= Produce value - all costs (**CFA**)
- Financing capacity (**CAF**)= Gain/amortissement (**CFA**)
- Production cost (**CP**)= All costs/produce quantity (kg/ha)
- Margin (*Marge de Benefice*)= Unit price - production cost (**CFA**)
- Threshold (*Seuil de rendement*)= All costs/unit price (**CFA**)
- Threshold per kg= Threshold/surface (**CFA/Kg**)

3.3 Survey: Methodology & Implementation

- Preparation
 - Questionnaires design
 - Coding in digital means (Cspro/Csentry)
 - Training/field tests/adjustments
- Implementation (December 2016 -Février 2017)
 - **Area: 12 communes in MC and 13 communes in AD**
 - **Focus group: 195**
 - **Entretien individuel : 975**
 - **HR: 26 enquêteurs, 5 contrôleurs, 3 superviseurs, 1 Coordonnateur + researchers**
 - **Technology:** tablets and digital communication (whasap)

3.3.1 Digital tools



3.3.2 Digital communication



Enquête Baseline_AD

Abdel Survey, Abdou Survey, Alphonse Ctb, Bassanwon Survey, Borte Survey, Brigitte Survey, Celestin DPSE Carder Surve...



PROFI_Supervision_AD

Alphonse Ctb, Bassanwon Survey, Etienne Survey, James Ctb, Lokossou Durand, Marc Olivier, Nadege Survey, Olodo Mari...



Baseline_Coordination_AD

James Ctb, Marc Olivier, Olodo Marius, Sikirou Ctb Ufr AD, Thales Stagiaire, You



BASELINE MIC_PROFI_MC

Adikpo Survey, Alphonse Ctb, Amadou Ufr MC, Appolinaire Survey, Chabel Survey, Ganiou Survey, Gomaise Survey, Hoyo



Control_supervision_MC

Alphonse Ctb, Amadou Ufr MC, Hoyo Survey, Jeremie, Kpodjadan Survey, Lokossou Durand, Marc Olivier, Olodo Marius, You

3.3.3 Trainings



3.3.4 Field Survey & continuous trainings



3.3.4 Field Survey



4.

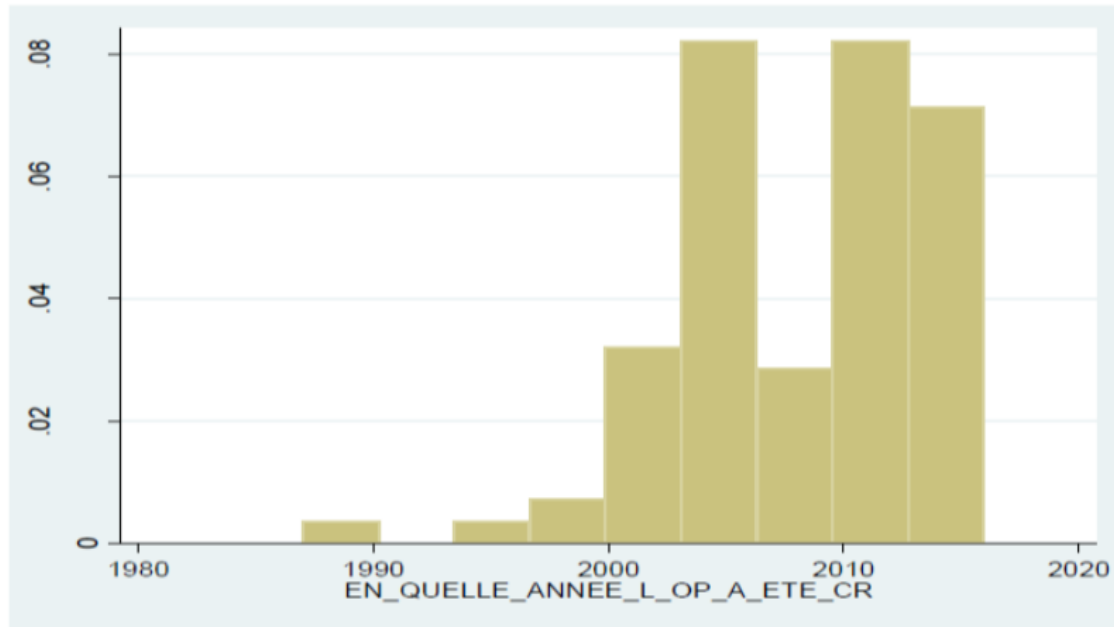
Baseline Preliminary Findings

4.1 Baseline preliminary findings: focus group

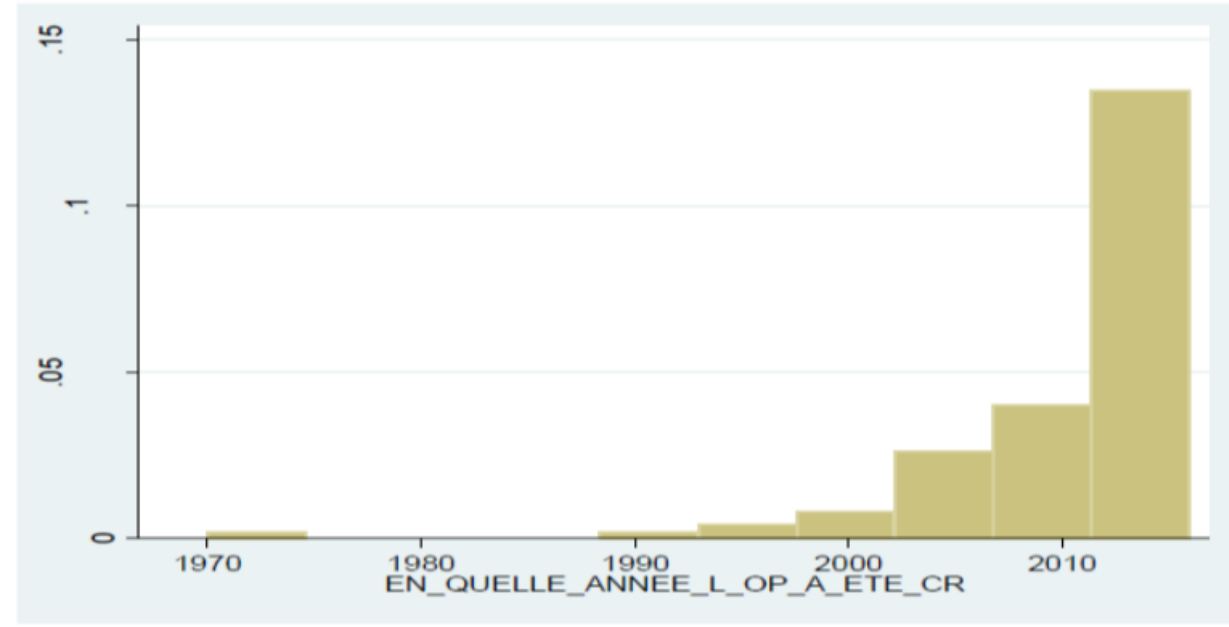
Variable-Name	Obs	Mean	Std.-Dev.	Variable-Name	Obs	Mean	Std.-Dev.
AD				MC			
Birth-year-of-the-group	87	2008	5	Birth-year-of-the-group	108	2011	6
Number-of-members	87	32.32	38.03	Number-of-members	108	9.74	4.83
Presence-of-common-plots-(0-1)	87	0.01	0.11	Presence-of-common-plots-(0-1)	108	0.73	0.45
Number-of-common-plots	1	1.00	.	Number-of-common-plots	79	1.18	0.42
Identifies-a-1st-common-plot	1	1.00	.	Identifies-a-1st-common-plot	79	1.00	0.00
Percentage-of-members-included	1	0.12	.	Percentage-of-members-included	79	0.97	0.14
Common-plots-under-MIC	87	0.13	0.33	Identifies-a-2nd-common-plot	13	2.00	0.00
Numb.-of-MIC-common-plots	11	1.00	0.00	Percentage-of-members-included	13	0.99	0.04
Presence-of-shared-plots-(0-1)	87	0.55	0.50	Common-plots-under-MIC	108	0.70	0.46
Number-of-shared-plots	48	1.65	2.11	Numb.-of-MIC-common-plots	76	1.01	0.11
Identifies-a-1st-shared-plot	48	1.00	0.00	Presence-of-shared-plots-(0-1)	108	0.19	0.40
Percentage-of-members-included	48	0.79	0.29	Number-of-shared-plots	21	1.19	0.40
Identifies-a-2nd-shared-plot	13	2.00	0.00	Identifies-a-1st-shared-plot	21	1.00	0.00
Percentage-of-members-included	13	0.49	0.26	Percentage-of-members-included	21	0.98	0.09
Number-of-plots-of-the-president	86	1.97	0.66	Identifies-a-2nd-shared-plot	4	2.00	0.00
Number-of-plots-of-the-secretary	86	1.80	0.75	Percentage-of-members-included	4	1.00	0.00
Number-of-plots-of-the-treasurer	85	1.87	0.67	Number-of-plots-of-the-president	108	2.20	1.24
Number-of-plots-of-member-n.1	86	1.80	0.70	Number-of-plots-of-the-secretary	108	1.99	1.18
Number-of-plots-of-member-n.2	86	1.65	0.66	Number-of-plots-of-the-treasurer	108	2.04	1.11
				Number-of-plots-of-member-n.1	108	2.00	1.14

4.2 Date creation of organizations

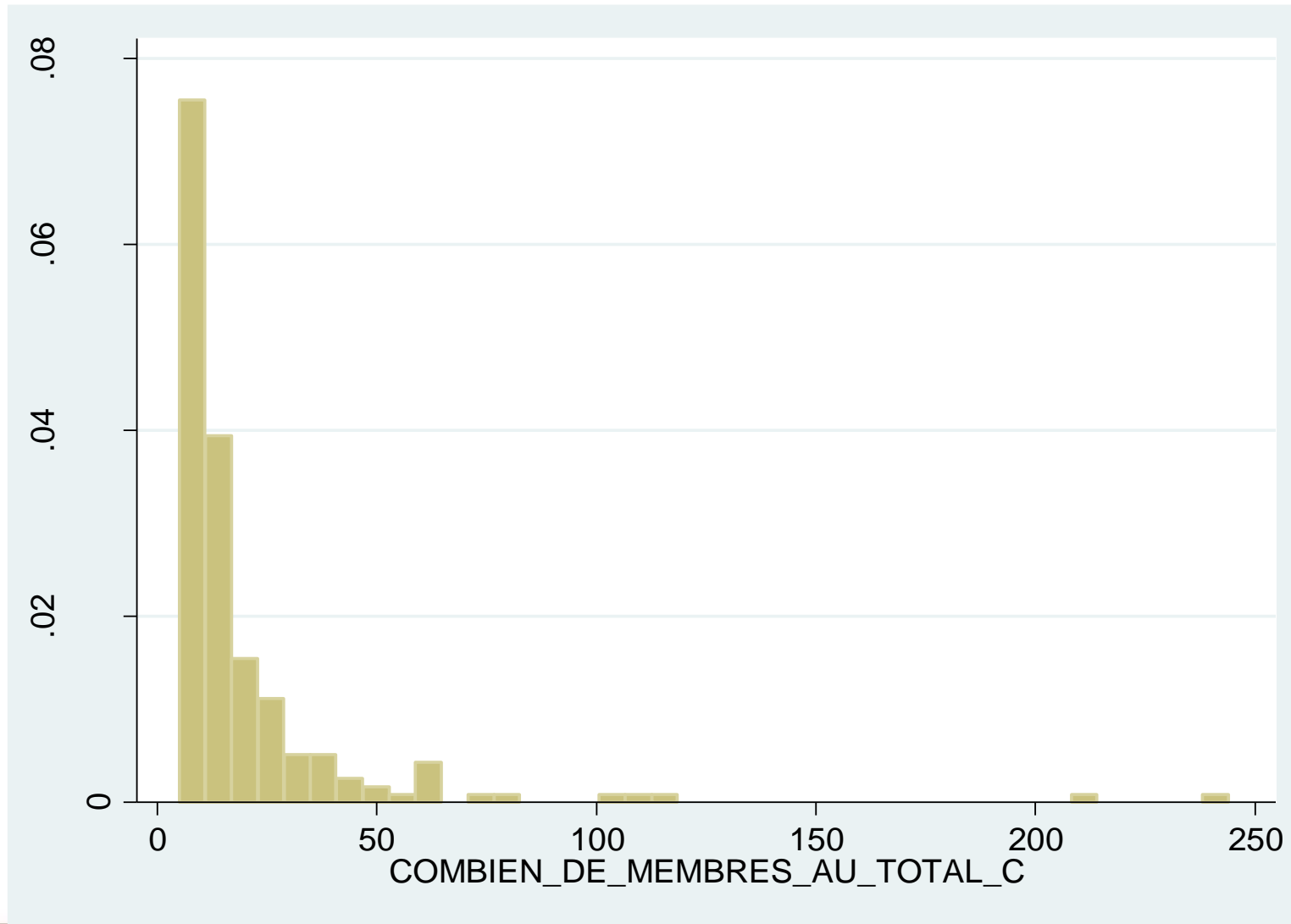
AD region



MC region



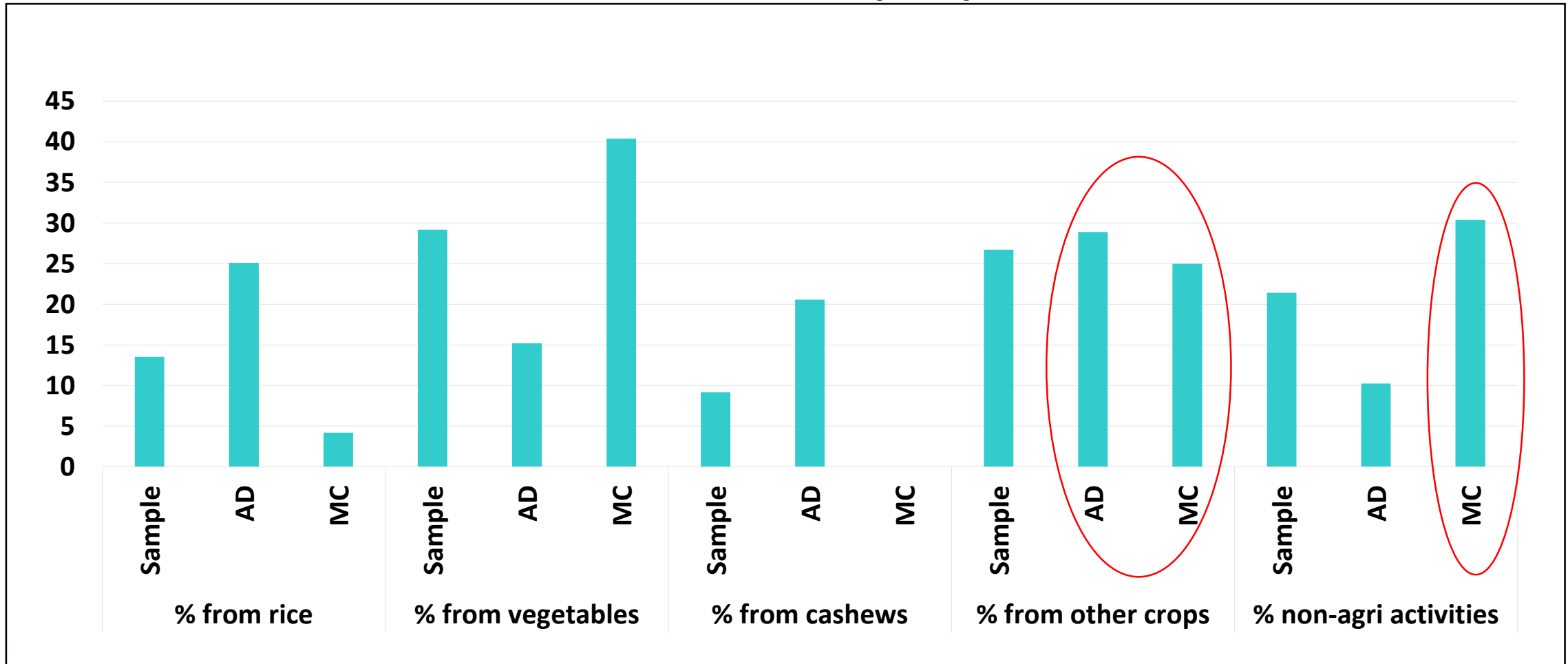
4.3 Organizations' size



4.4 Replacements of targeted respondents

	Committee- members	The rest	Total
AD	17	13	30
MC	14	17	31
Total	31	30	61

4.5 Sources of income (%)



4.6 Top Constraints facing the entrepreneurs

Difficultés rencontrées dans les activités	Global	AD	MC
1. Difficultés d'obtenir de financement;	0,28	0,25	0,30
2. manque terre disponible/insécurité foncière;	0,03	0,04	0,02
3. maîtrise de l'eau/manque d'aménagement;	0,20	0,11	0,27
4. les routes dégradées pour écouler vos produits;	0,02	0,02	0,02
5. difficultés douanière;	0,00	0	0
6. délestage/non disponibilité électricité dans votre zone d'activité;	0,00	0	0,00
7. Le manque/insuffisance de formations;	0,16	0,15	0,17

4.7 Access to credit & their use in 2016-2017

- Only about 30% entrepreneurs have access to finance

SOURCES DE FINANCEMENT (prêteurs)	Global	AD	MC
Banque	0,004	0.008	0
IMF	→0,615	0.684	0.544
Tontine	0,182	0.051	0.316
Emprunteur informel (famille/amis)	0,108	0.085	0.132
Autres Sources	0,212	0.248	0.175

4.8 Sources of Finance

SOURCES DE FINANCEMENT (prêteurs)	Global	AD	MC
Banque	0,004	0.008	0
IMF	-0,615	0.684	0.544
Tontine	0,182	0.051	0.316
Emprunteur informel (famille/amis)	0,108	0.085	0.132
Autres Sources	0,212	0.248	0.175

4.9 Explanation of finance exclusion

Raisons de non obtention d'emprunts	Global	AD	MC
1. Je n'en ai pas besoin	0,100	0,142	0,068
2. J'ai demandé mais pas obtenu	0,078	0,073	0,082
3. Je n'ai pas fait de demande de financement	0,781	0,734	0,816
4. Autres (à préciser)	0,041	0,051	0,033

4.10 Explanation: Not applying for financing

Raisons de non introduction des demandes	Global	AD	MC
1. Les formalités administratives sont trop complexes	0,276	0,360	0,220
2. Les taux d'intérêt sont élevés	0,182	0,089	0,245
3. Les garanties exigées sont trop élevées	0,070	0,065	0,073
4. Je pensais que si j'ai fait de demande ce serait refusé	0,055	0,049	0,060
5. Je ne connais aucune personne/structure qui peut me prêter l'argent	0,031	0,057	0,014
6. Je n'aime pas m'endetter	0,207	0,182	0,223
7. A la durée de remboursement est courte	0,106	0,113	0,101
8. Autres (à préciser)	0,073	0,085	0,065

5.

Challenges

5 Challenges

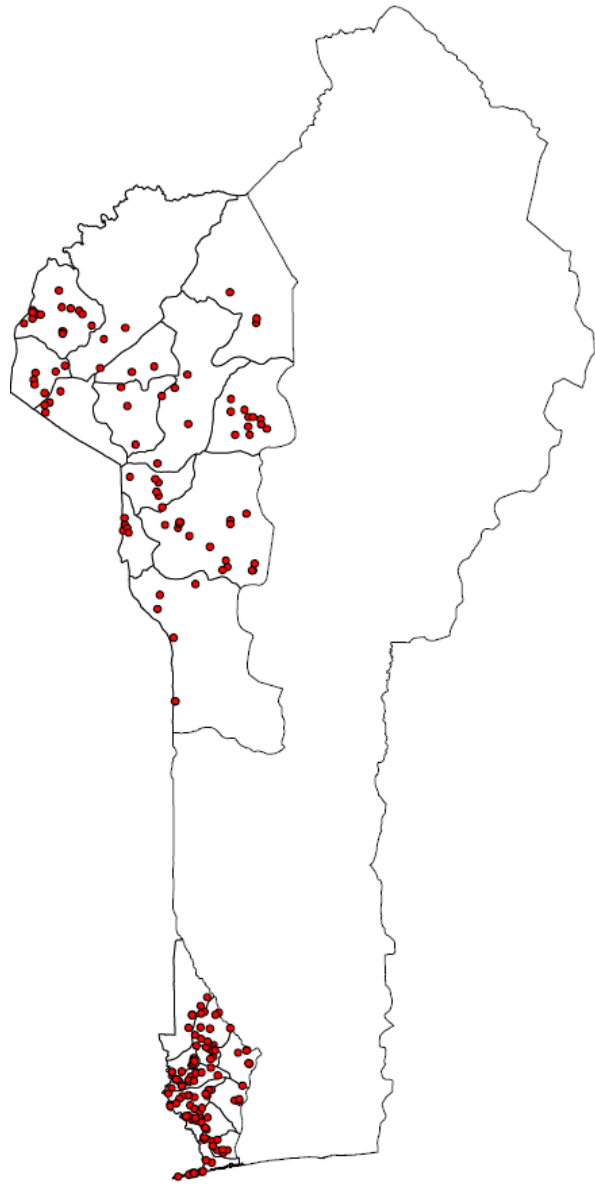
- Delays in delivering support to the entrepreneurs
- Budgets rules applied on BTC
- Others difficult with staffs in the fields

5 Conclusion

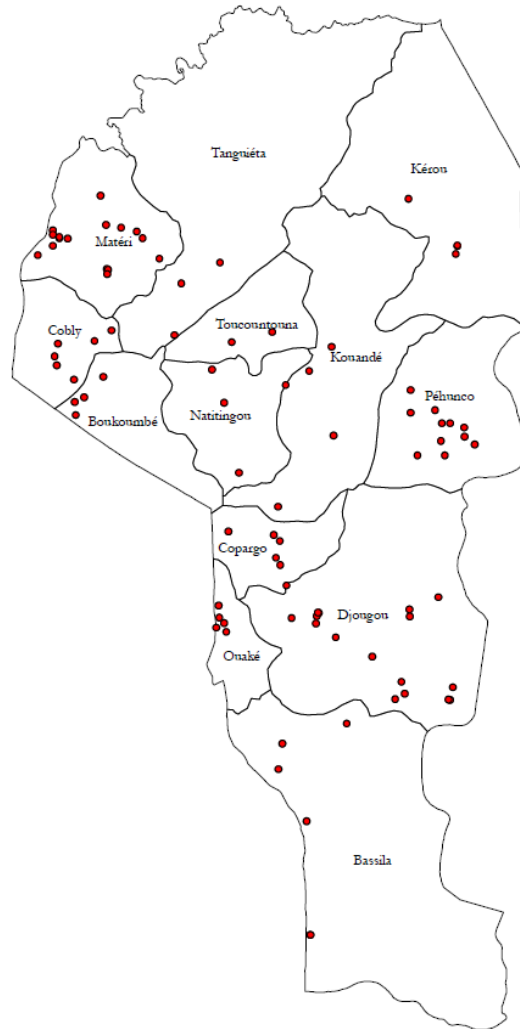
- A rigorous evaluation needs to be integrated into the program design
- Without a credible such an evaluation one cannot talk of impact evaluation of the projects
- One needs to address the challenges in the fields with BTC and DGD as to make a rigorous impact realised of which results are very important for BTC and DGD

Thank you!

4.1 Localisation of MIC Plots



Atacora-Donga



Mono-Couffo

