



Impact Study

IOM Community Policing Project in Mbuji mayi

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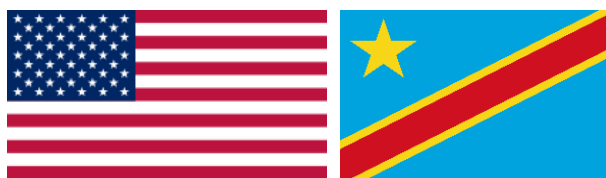


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Executive summary

The study assesses the **impact on security** of the OIM-supported introduction of community policing (training, doctrine, deployment of community police, construction and equipment) in the pilot commune of Bipemba in the city of Mbuji-Mayi, DRC. In the evaluation design, the commune of Muya, located at the eastern end of Mbuji-Mayi, is the unit of control. The study **evaluates only the policing level** not the security governance level (security forums, Local councils of security). The governance level of security was introduced in both communes of Bipemba and Muya by the IOM project.

The quasi-experimental evaluation uses representative survey data collected by Coginta in association with the University of Mbuji-Mayi in both communes (about 1'200 interviews by commune). Based on face-to-face interviews, the surveys were run in the pilot and control locations before the introduction of community policing at time t_1 (April 2016) and about 12 months after this introduction at time t_2 (July 2017).

To measure security, the evaluation study constructed a **multidimensional synthetic index of insecurity**. Several key outcome indicators were derived: the incidence of insecurity (H_0), the incidence of extreme insecurity (H_1), the severity of insecurity (S), the vulnerability of residents to insecurity (G_0) as well as other features of insecurity such as the stability of security (G_2).

The evaluation combines two methodologies recommended by the World Bank in quasi-experimental empirical studies: the **difference-in-difference** and **propensity score matching**. The first methodology improves the confidence that the impact measured is not attributable to other non-observed **external** factors while the propensity score matching procedure reduces the **internal** selection bias in the data collected in pilot and control communes.

The report provides estimates of the impact using three different approaches: the difference-in-difference without score matching, the difference-in-difference with one simple procedure of score-matching (1st methodology) and the difference-in-difference using an alternative, more reliable, score-matching procedure (2^d methodology). The three approaches provide similar results.

Results

Key impact indicators

After the calculation of the difference in the difference with matched data (2^d methodology), the evaluation shows that considerable gains were obtained by the community policing project:

- The **incidence of insecurity** was reduced by 65.6% due to the introduction of community policing.
- The incidence of **extreme insecurity** was also reduced by 66.1%.
- The **severity of insecurity** for the general population was reduced by 31.9%.
- The **vulnerability to insecurity** was also reduced by 47.8%.

The report shows that the level of achievement in terms of reduction of the incidence of insecurity has reached a point of diminishing returns where **future major gains are unlikely**.

However, despite a considerable reduction of insecurity, the size of the group of residents vulnerable to insecurity remains high. In other words, the **gains are fragile** and **security remains unstable**.

Dimensions of insecurity

The evaluation shows that **access to policing services** and **trust in police** are the two dimensions that affect most the incidence of insecurity and the vulnerability to insecurity. This means that the two dimensions should remain priorities even after the introduction of community policing. As community policing is efficient in improving access to services and police legitimacy, this philosophy of policing explains the large impact observed in this study in the main outcome indicators. In other words, community policing is found to be well adapted to the security context in the city of Mbujimayi.

Impact on crime

A reduction of 19.6% in the crime dimension of the index is attributable to the community policing pilot project.

Interpersonal violence rates reduced more than burglaries. Respectively 40.1% and 35.9% reduction in assaults and sexual violence rates can be attributable to the project. Burglaries diminished by 14.1%.

Incivilities

Incivilities did not reduce. The policing level of the IOM project had no impact on the level of incivilities.

The only significant impact of community policing on incivilities identified as result of the project is the lower presence of aggressive youth gangs. 33.5% of reduction of youth gangs can be attributable to community policing.

There was no observed positive impact on insalubrity, drugs and resident disputes.

Fear of crime

The project impacted positively on social representations of insecurity. As computed in the index, the fear of crime was reduced by 45.7%.

The highest impact could be observed in how residents assessed the risk of being victim of a crime in the next 12 months. The estimated impact of the project was a reduction of 48.3% of the probability of crime as assessed by residents.

Feeling unsafe in the street during the day and at night was reduced by the project by an estimated 18.3% and 16.9% respectively.

Access

Access to policing services increased significantly with community policing. The index that measures this dimension shows that the lack of access diminished by 36.7% as result of the project.

The net impact of the pilot project on the increased visibility of the police in the streets is estimated at 45.6%. We observed a 58.7% of increase in the fast intervention in case of emergency and a 83.6% increase in partnership policing as net result of the introduction of community policing.

Trust

Trust in police increased strongly with community policing. The lack of trust in policing was reduced by the project by an estimated 41.3% in the index.

Residents' opinion of the quality of the work of the police in their neighborhood (police image) increased by 101.9% because of the introduction of community policing.

The opinion of the police as treating everybody fairly increased by an estimated 54.6%.

The quality of the contact with residents has increased by 212.8%.

Reporting crime

Reporting rates to police increased for assaults (58.8%) and satisfaction with how police handled the complaint increased by 167% as net result of the project.

The evaluation could not identify a positive impact on how police handles burglaries however. The impact of the project on the satisfaction was negative (-34.6%) and no increase in rates of reporting burglaries to the police could be observed either. The rates of reporting burglaries to the police remain unchanged at a low 10,7% after the introduction of community policing. Dealing with burglaries remains a challenge for the community police in DRC as they lack minimal forensic capacity for investigation and the project could not impact positively on the levels of satisfaction of victims.

Territorialisation of insecurity

The evaluation shows that the incidence of insecurity and vulnerability was reduced greatly across neighborhoods in Bipemba except for the far western peripheral end of the commune (*Basanga*).

The group of neighborhoods (forum) that benefited most of the community policing is *Debout Bipemba*.

The incidence of extreme insecurity was also reduced across the board in the commune.

The gains in all forums are however relatively instable, except for *Debout Bipemba* where the cutoff for stability was almost reached.

The study identified the remaining insecurity hotspots in the pilot commune of Bipemba after the intervention of the project.

The gender gap

Not all are equal in matters of security. After the introduction of community policing, we observed that men benefited more than women from community policing.

After the introduction of community policing, the incidence of insecurity is higher for women (9.9%) than for men (4.7%). We estimate the impact of community policing on the incidence of insecurity to have produced a 69.2% decline in the incidence of insecurity for men and (only) a 40.8% decline for women. A similar gender gap can be observed for all other outcome indicators.

In 2017, the incidence of insecurity was estimated at 17.4% of the women of the western section of Basanga in the pilot commune of Bipemba.

Young women of the age group of 18 to 25 did not benefit at all from community policing while young men did. The gender gap should be further researched and addressed by police authorities.

Conclusion

The evaluation could demonstrate a robust **positive impact** of the introduction of community policing in Mbujimayi despite a context of tension and violence in the Kasai provinces that erupted during the piloting of the project. **Access and trust increased** while **crime and the fear of crime decreased**. Incivility levels is the only dimension of the insecurity index that was not impacted positively by the project.

While the **gains are considerable, they remain fragile** as the vulnerability to insecurity remains relatively high. As **access and trust** are the main levers of the prevalence of insecurity and the vulnerability to insecurity, further progress in stabilizing and consolidating the gains should concentrate on these two dimensions. Similarly, a weakening of these two dimensions would translate immediately in higher rates of incidence of insecurity. A major threat to the project is the unsolved issue of payment of the community police. Most of the new community policing officers are not on the **payroll** of the police, local neighborhood forums substituting temporarily to the state to allocate food and money to them. In the longer-term, this situation may not be viable as the parallel study in Lubumbashi will show.

Criminal investigation using a minimal level of forensic analysis would further increase trust and reporting rates for burglaries.

The impact evaluation of the community policing project reveals **a gender gap** that needs to be addressed by police authorities

Introduction

In March 2016, the International Organization for Migration (IOM) commissioned Coginta to carry out an impact study on the security outcome of their assistance project to the introduction of community policing in the cities of Lubumbashi and Mbuji-Mayi. This initial report assesses the impact of the police component only of the project in Mbuji-Mayi. A companion report on Lubumbashi and the civilian component of the IOM project will follow at the beginning of 2018.

The first section of the report situates the IOM project in the context of the police reform in DRC and describes briefly its outline in the city of Mbuji-Mayi. The assessment methodology and the key outcome indicators are then introduced in section 2. More details on the methodologies used by the report are provided in a separate volume annexed to this report. Estimates of the impact of the introduction of community policing on the key outcome indicators are presented in section 3. Section 4 shows how the dimensions of access and trust are the key ingredients of the success of the community policing project in Mbuji-Mayi. Section 5 provides information on insecurity in the five neighborhoods of the pilot commune of Bipemba in the Mbuji-Mayi city. Section 6 provides evidence of a gender gap of the community policing implementation in Mbuji-Mayi. The closing section summarizes the findings.

Section I.

Context and the community policing project in the city of Mbuji-Mayi

1.1 The Police Reform in DRC

The community policing doctrine was officially adopted by the Congolese National Police [*Police nationale congolaise* or CNP] in 2011 following preparatory work conducted by the Police Reform Follow-up Committee [*Comité de suivi de la réforme de la police* or CSRP]. A public security governance component was added to this police doctrine to ensure civilian oversight of community policing. The decree enabling decentralized entities to establish their own Local Councils for Community Security was signed in September 2013. These two documents – the doctrine and the decree – are the regulatory foundation of the new two-level institutional architecture that ensures public security in the Democratic Republic of Congo (DRC). The reform is currently being progressively introduced, often with the assistance of international donors.

At the level of local administrative authorities, i.e. the *first* level of the architecture, the aforementioned decree authorizes communes to establish a transversal and inclusive

governance body – the Local Council for Community Security [*Conseil local pour la sécurité de proximité* or CLSP] –, whose main task is to carry out joint analyses of insecurity within its jurisdiction and to formulate and monitor a local, 4-year community security plan. In the urban communes, the CLSP, chaired by the burgomaster [*bourgmestre*], is a platform for dialogue between the local administrative authorities, the deconcentrated central administration, the police, and civil society. Its role is to define local priorities to strengthen security in the commune and formulate and adopt an action plan – the Local Community Security and Crime Prevention Plan. The public security governance architecture also provides for neighborhood [*quartier*] chiefs to establish and chair local community forums meant to promote dialogue and collaboration between the population, police and local administration on security issues. Neighborhood chiefs represent the burgomaster in the neighborhoods. These forums are expected to interact regularly with the communal CLSP. They are designed to be both a representation of the CLSP in the neighborhoods and a local space for dialogue whose recommendations are integrated into the local community security plans.¹

At the *second*, strictly police level of the public security architecture, community policing [*police de proximité* or PDP as it is known by experts in the DRC] is a new doctrine of the police; it focuses on key notions such as human right, integrity of police, gratuity of services; it promotes partnerships, prevention, problem-solving, and community services to the community; it embodies the philosophy that the police serve the community by providing protection and combatting crime.

This new two-level architecture is being progressively introduced in the DRC and is currently being piloted mainly in urban centers. The first pilot projects were started in 2012 with the support of Belgium in Kinshasa and the UK in Kananga (Western Kasai), Bukavu (South Kivu) and Matadi (Central Congo). With Japanese funding, UNDP supported a community policing project in Bunia, Ituri, in eastern Congo. The MONUSCO is generally closely associated with these projects because it has a training capacity and, as such, often trains the Congolese police personnel deployed in the pilot zones.

¹ It should be noted at this stage that, although the neighborhood chiefs are not judicial police officers, they have traditionally played a very important role in the DRC (and in francophone Africa in general) in public security. This role is largely informal and not governed by legislation. As will be seen later, these civilian authorities are the *main* recipients of complaints for criminal cases such as burglary or assault; they are often the ones who organize self-defense local mechanisms and encourage young people in the neighborhood to provide community protection. Decades ago, the DRC government established local committees tasked with coordinating the various security services (the police, the intelligence services known as the ANR, the military intelligence) in the respective jurisdiction to strengthen local security. The burgomaster chairs these committees at commune level; the neighborhood chiefs chair the delegation of these committees in their neighborhood. These operational committees are not identical to the neighborhood forums. The former focus on repression; the latter, who include civil society, focus on prevention measures to insecurity.

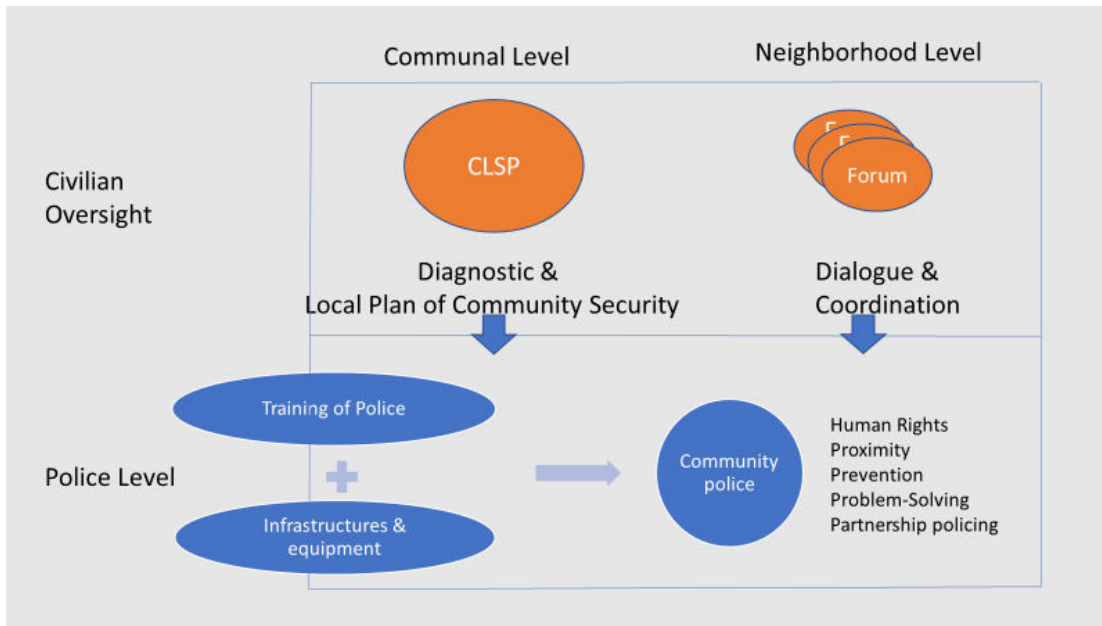
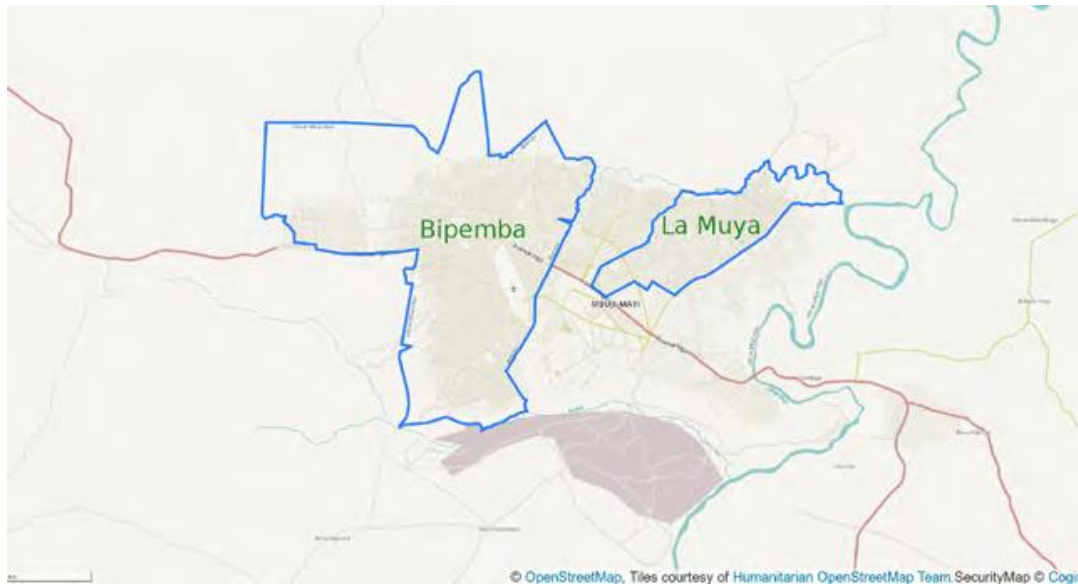


Figure 1: The two-level institutional architecture of the police reform in RDC

This is the architecture that IOM has been supporting since 2015 with Canadian and American funding in the mining towns of Lubumbashi (High Katanga) and Mbuji mayi (Eastern Kasai). Let us turn to the outline of the project in the next subsection.

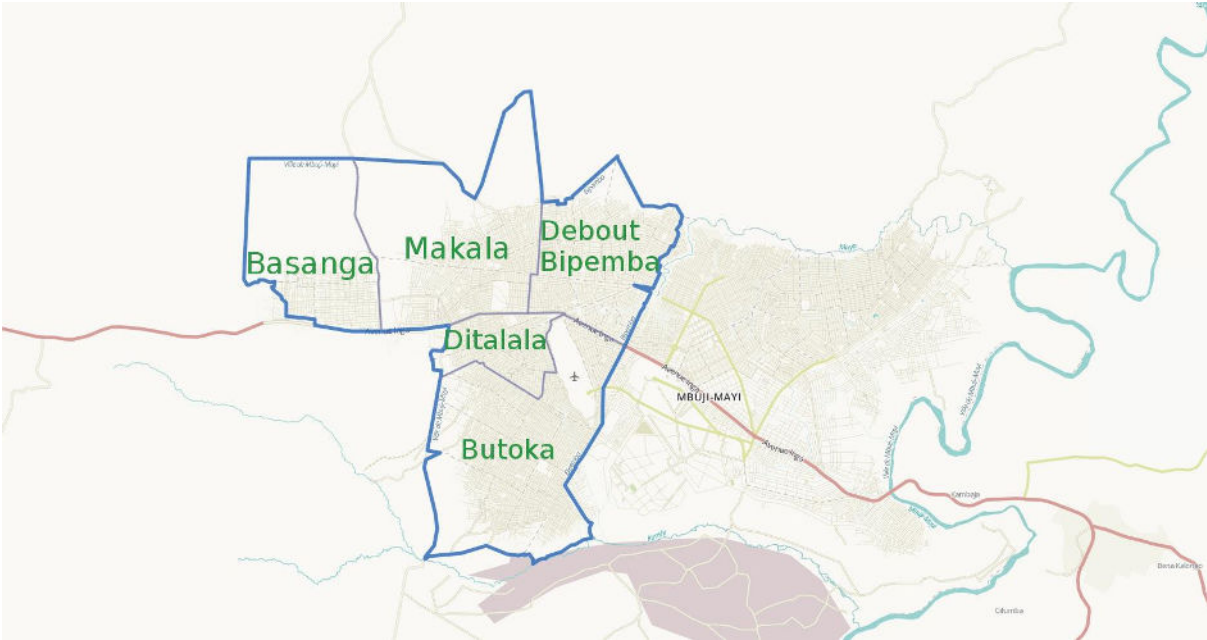
1.2 Community policing in Mbuji mayi

Originally, as per the initial discussions with the authorities of the city of Mbuji mayi in 2015, the aim was to introduce community policing in two of the city's five communes, i.e. Bipemba in the west and Muya in the north-east. Due to budgetary constraints, the OIM assistance eventually concentrated on the commune of Bipemba which received new police infrastructure and equipment. All police officers deployed in the commune received 6 months of training in community policing by trainers of the PNC and civil society that were trained by the project previously. The commune of Muya received a technical assistance only to set up the CLSP, neighborhood forums and formulate a local security plan. No police trained police officers or infrastructure were respectively deployed and built in Muya.



Map 1: The pilot and control communes in the city of Mbuji-Mayi

As part of its assistance to the civilian oversight component, IOM conducted several awareness workshops in the two communes of Bipemba and Muya in January 2016. The burgomasters were first initiated in the new role they would have to play in the CLSP; then, in March 2016, the neighborhood chiefs attended awareness workshops on the new system and their own role in the forums. During these workshops, it was agreed to regroup small neighborhoods into larger units. Each commune created larger neighborhood forums (5 in Bipemba and 6 in Muya, see Map 2 for Bipemba) and branded them. Selected neighborhood chiefs were appointed by their peers to chair the newly established forums. Finally, in June 2016 the awareness campaign was widened to all actors of civil society. This preparatory work was followed in July 2016 by the official launch of the CLSP and the neighborhood forums in the two communes; provincial authorities attended the ceremony. After conducting a local security diagnostic in April 2016, with the support of Coginta, each commune formulated a communal community security plan which were then approved in September 2016.



Map 2: The 5 neighborhood forums in the commune of Bipemba



Photo 1: Inauguration ceremony of the Local Councils of Community Security in the communes of Bipemba and Muya, July 2016

At police level, as indicated above, IOM had initially intended to support the deployment of community policing in both communes but, because of insufficient funding, it was forced to reconsider and eventually supported the training of police personnel, the construction of police stations and the provision of equipment in the commune of Bipemba only. On 17 October 2016, 390 police officers trained in community policing over six months were deployed in the commune of Bipemba.

A brand new state-of-the-art central police station was inaugurated a few days later, on 26 October 2016, in the commune of Bipemba. Apart from building the central police station and rehabilitating police infrastructure, the IOM project provided equipment. This equipment consisted in a new police car, motorbikes, smartphones and communication devices as well as computers and printers.



Photo 2: The central police station in the commune of Bipemba before the project



Photo 3: The new state-of-the-art central police station in the commune of Bipemba after the project



Photo 4: Mobility equipment for the new central police station in Bipemba after the project

Section 2. Methodology

2.1 The methodological design: a quasi-experimental approach

The methodology adopted by this impact study is described in detail in a volume annexed to this report. This section provides a brief outline of the design, methods, data and outcome indicators adopted by the evaluation.

We use a quasi-experimental design for the estimation of the impact on the insecurity outcome of the community policing project in the pilot commune. As the outcome change observed in the pilot commune of Bipemba could have been produced by factors external to the project, the commune of Muya was selected a control zone. Selecting Muya as control zone was acceptable as the evaluation assesses the impact of the policing component of the project only and Muya did not receive any assistance in this regard. The control commune' function is to ensure that we do not wrongly attribute outcome changes to the project while they were caused by factors or events external to the project.

In this report, we employ an impact estimation method called the difference-in-differences (DiD). The method is intuitive. It consists in deducting the outcome change observed in the control commune from the change measured in the pilot commune after the introduction of community policing. The DiD is the classic way to eliminate the change produced by external factors from the final impact estimates. In our design, the civilian oversight level of assistance is such an external factor that very likely affected the level of security in both the pilot and the control communes. The DiD eliminates this effect.

In the report, we will crosscheck the estimates produced by DiD with estimates that combine the DiD with a complementary method called the Propensity Score Matching (PSM) method. PSM is less intuitive than DiD. Its function is to eliminate the effect of what is known by scholars as "selection bias". Any quasi-experimental design is subject to selection bias as the units of analysis – here the pilot and the control communes – are per definition not selected randomly as in clinical drug tests for instance. It is the role of PSM to eliminate or at least reduce this selection bias that could account for changes in outcome. We applied two different procedures (explained in the annexed volume) to match data and, in this report, we will show estimates obtained by the different methods including the most sophisticated one that combines DiD with PSM.

2.3 How did we measure the outcome?

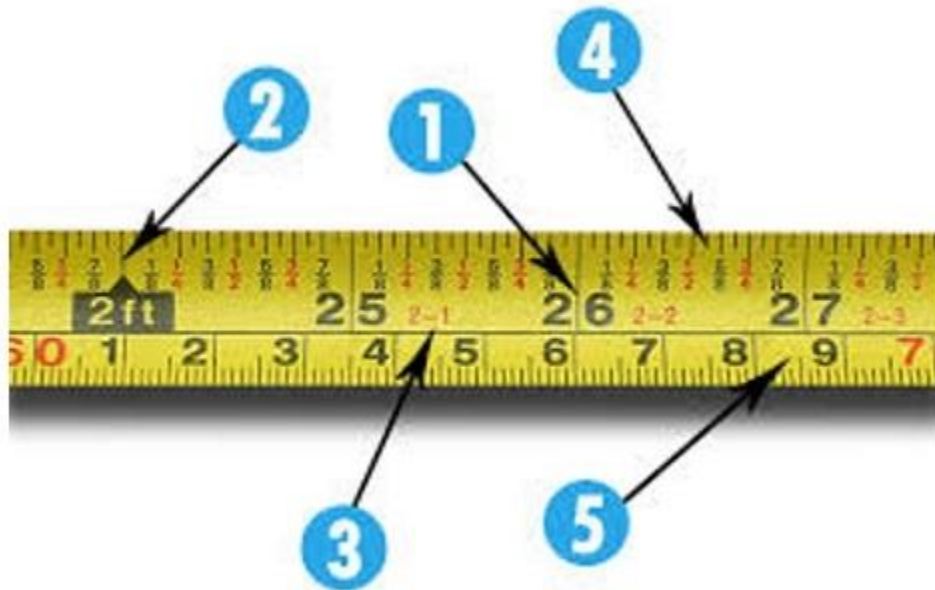
How did we measure the outcome insecurity? To measure insecurity, we used data collected through victimization surveys in pre- and post-community policing periods in the pilot and the control communes. The surveys were conducted in association with the private university of Mbjujimayi. A first representative survey was conducted in both communes in April 2016 (the baseline survey) and the second survey (the impact survey) took place 8 months after the deployment of the newly trained police officers in Bipemba in October 2017.

We use an index of insecurity to account for the multidimensionality of the outcome insecurity. Why do we need an index? The reason is the following. Insecurity is not a straightforward concept and, unlike repressive models of policing that estimate success in crime rates only, community policing understands insecurity more globally as

multidimensional. Insecurity comprises five dimensions that we call in this report “crime”, “incivilities”, “fear of crime”, “access to police services”, and “trust in police”. Crime alone does not account for insecurity. Incivilities or small public order disturbances account also for insecurity. Community police consider the fear of crime (a notion that is not necessarily correlated with crime) to be a key dimension of insecurity. Insecurity is also expected to be larger when policing services are not available. Access to police service may exist but their use is mitigated by residents’ trust in police. When police are not trusted, their services may not be used as much. Trust is thus the fifth dimension of “global” insecurity.

2.4 The index of insecurity and key outcome indicators

The methodology of computing the global multidimensional index is explained in a separate methodological volume. The index can be understood as a scale from 0 to 100% (or a ruler) from which several key outcome indicators can be derived or identified



In this report, we use the following key outcome indicators.

1. The first key outcome indicator is the **incidence of insecurity** or H_0 . If a resident is deprived of security from 60% to 100%, he is *globally* deprived of security. H_0 measures the proportion of residents in the population who are globally deprived of security. We may call the 60% mark the “insecurity line” in analogy to poverty studies that define a “poverty line”. H_0 measures the proportion of those who crossed the insecurity line.
2. The second outcome indicator is the **incidence of extreme insecurity** (H_1). By convention, we admit that residents live under conditions of extreme insecurity if they are situated above the 75% mark. H_1 is the proportion of residents in the population who have crossed the 75% extreme insecurity line.

3. The third indicator is the **severity of insecurity** or S. Severity of insecurity is measured for all residents. This indicator is expressed as an average. It can be understood as the average level of insecurity for a given population. While H_0 measures the percentage of residents that have crossed the insecurity line, S measures how much deprived of security are the average resident in a given territory or population segment.
4. The fourth outcome indicator, G_0 , measures what will be called here the **vulnerability to insecurity**. Resident vulnerable to insecurity have not crossed the insecurity line. But they are close to this line. All residents that are deprived of security from 50% to 60% are considered by our study as vulnerable to insecurity as a small change of security in their case could make them cross the 60% line.
5. The relative size of G_0 to H_0 serves to measure the **stability of security** for a given unit of analysis. This stability is measured less by the size of the vulnerable group than by its relative size to the incidence of insecurity. By convention, a situation might be considered very stable if the G_0 vulnerable population group does not exceed 20% of H_0 . It is moderately stable if this group does not exceed 50% of H_0 . Beyond that, it is unstable. If it exceeds 100% of H_0 , the security situation can be assessed as highly unstable as “overnight” H_0 could double or more.
6. Finally, we defined another outcome indicator we consider useful for police strategists. We call it the **“target group”**. This target group is the other side of vulnerability. It measures the number of residents that have crossed the insecurity line but are still close to it. All residents that are deprived of security between 60% and 70% belong to the target group. We call the group the “target group” as they could be (easily) reached out by police strategists in their attempts to reduce the incidence of insecurity. Being very close to the insecurity line, they are relatively easy to reach out by police and focusing on the target group can bring down H_0 with relatively few resources.

The report will systematically assess the impact of community policing on these outcome indicators.

Section 3. Results

3.1 The key outcome indicators estimates

Table 1 displays the impact estimates of the community policing project for the key outcome indicator after computing the difference-in-differences in Bipemba. The figures in brackets are the percentages change from the baseline data in Bipemba at time t_1 . The first column shows the estimates using non-matched data. The second column displays the estimates using the matched data paired with a first method and the third column shows the estimates based on matched data computed with a second method. The second matching method is preferred by scholars and considered the most reliable one. The methods are

described in the annexed methodological volume. This table is commented in the next subsection indicator by indicator.

Table 1: Estimates of impact on the key outcome indicators using various methods

	No score-matching	Matching scores using the 1 st method	Matching scores using the 2 ^d method
H ₀ (Incidence of insecurity)	-13.7** (56.1%)	-13.7** (56.5%)	-16.2** (65.6%)
H ₁ (Incidence of extreme insecurity)	- 2.7** (56.3%)	- 2.7** (57.4%)	- 3.0** (66.1%)
S (Severity of insecurity)	- 0.14** (30.4%)	- 0.14** (30.4%)	- 0.15** (31.9%)
G ₀ (Vulnerability to insecurity)	- 8.9** (48.6%)	- 9.4** (50.5%)	- 9.6** (47.8%)
G ₁ (Target group)	- 7.7** (57.5%)	- 7.8** (57.4%)	- 9.9** (73.3%)
N (Bipemba)	2'402	2'367	1'774
N (Muya)	2'410	2'367	1'774

Significance : *Significant at 5% ; **Significant at 1%

Source: Survey

The following series of tables provide more details by displaying the figures obtained by indicators in both communes at different times. The first table uses unmatched data (Table 2); the second table uses match data according to the first method (Table 3) and the third table shows results based on data matched using the second method (Table 4).

Table 2: Change in the insecurity indicators in the Bipemba pilot zone and the Muya control zone, and estimated impact of the project with unmatched data

	t ₁ (April 2016)		t ₂ (July 2017)		Estimated impact	Estimated impact of the project in %
	Pilot zone	Control zone	Pilot zone	Control zone		
No propensity score	Bipemba	Muya	Bipemba	Muya		
	%	%	%	%	N	%
H ₀ (incidence of insecurity)	24.3	21.6	7.4	18.3	-13.7**	-56.1
H ₁ (incidence of extreme insecurity)	4.8	3.7	1.5	3.1	-2.7**	-56.3
S (severity of insecurity)	0.46	0.45	0.29	0.42	-0.14**	-30.4
G ₀ (vulnerable group)	18.3	18.0	6.9	15.6	-8.9**	-48.6
G ₁ (target group)	13.4	12.8	4.0	11.1	-7.7**	-57.5
G ₂ (stability)			93.2% (unstable)	85.2% (unstable)		
N	1,205	1,205	1,197	1,205		

Significance : *Significant at 5% ; **Significant at 1%

Table 3: Change in the insecurity indicators in the Bipemba pilot zone and the Muya control zone, and estimated impact of the project with data matched using the 1st method

	t ₁ (April 2016)		t ₂ (July 2017)		Estimated impact	Estimated impact of the project in %
	Pilot zone	Control zone	Pilot zone	Control zone		
	Bipemba	Muya	Bipemba	Muya		
	%	%	%	%	N	%
H₀ (incidence of insecurity)	24.3	21.5	7.4	18.4	-13.75**	-56.5
H₁ (incidence of extreme insecurity)	4.7	3.6	1.5	3.1	-2.70**	-57.4
S (severity of insecurity)	0.46	0.45	0.29	0.42	-0.14**	-30.4
G₀ (vulnerable group)	18.5	18.0	6.9	15.8	-9.35**	-50.5
G₁ (target group)	13.5	12.8	4.0	11.1	-7.75**	-57.4
G₂ (stability)			93.2% (unstable)	85.8% (unstable)		
N	1,180	1,180	1,187	1,187		

Significance : *Significant at 5% ; **Significant at 1%

Table 4: Change in the insecurity indicators in the Bipemba pilot zone and the Muya control zone, and estimated impact of the project with data matched using the 2nd method

	t ₁ (April 2016)		t ₂ (July 2017)		Estimated impact	Estimated impact of the project in %
	Pilot zone	Control zone	Pilot zone	Control zone		
	Bipemba	Muya	Bipemba	Muya		
	%	%	%	%	N	%
H₀ (incidence of insecurity)	24.7	21.0	7.2	19.8	-16.20**	-65.6
H₁ (incidence of extreme insecurity)	4.6	3.1	1.7	3.1	-3.04**	-66.1
S (severity of insecurity)	0.47	0.45	0.29	0.42	-0.15**	-31.9
G₀ (vulnerable group)	20.0	18.3	7.1	14.9	-9.56**	-47.8
G₁ (target group)	13.5	12.2	3.5	12.1	-9.90**	-73.3
G₂ (stability)			98.4% (unstable)	75.6% (unstable)		
N	884	884	890	890		

Significance : *Significant at 5% ; **Significant at 1%

3.1 Incidence of insecurity

The incidence of insecurity declined very sharply in Bipemba after the introduction of community policing. By comparison, its level remained practically unchanged in the Muya control zone between the two waves of the survey. Depending on the calculation method used, the net impact of the project on the incidence of insecurity (H_0) is estimated to be a 56.1% drop of insecurity (model without matching), a 56.5% drop (matching model using 1st method), and a 65.6% drop (matching model using 2nd method).

The incidence of insecurity in Bipemba and Muya was practically identical in both communes when we measured it in the baseline study conducted in April 2016 (t_1). When measured with unmatched data, it was situated at 24.3% in Bipemba and at 21.6% in Muya. Measured in July 2017 (t_2) after approximately one year of the community policing project, the incidence of insecurity dropped to 7.4% in the pilot commune of Bipemba. The incidence level in the Muya control zone dropped also but very moderately. In La Muya, at time t_2 , the incidence of insecurity is measured at 18.3%. The net impact attributable to the introduction of community policing is 13.7 points corresponding to a 56.1% drop in the incidence of insecurity.

The amplitude of the impact proves to be even larger if we use the matched data. Depending on the matching method used, the decline varies. If we trust the 2nd matching method, the net impact estimate of the project is a large drop of insecurity by 65.6% in Bipemba.

3.2 Extreme insecurity

The net impact of the introduction of community policing on the incidence of extreme insecurity is a drop of 56.3% as measured with unmatched data. If we trust the second method of matching data, the estimate of the drop is 66.1%.

After the difference-in-differences calculation using unmatched data, the net impact of the introduction of community policing in Bipemba is a large drop of 56.3% of extreme insecurity. In other words, the project reduced dramatically the number (and proportion) of residents living under conditions of extreme insecurity. It dropped from 4.8% in Bipemba in the t_1 period to 1.5% in the t_2 period after the introduction of community policing in the commune. The incidence level of extreme insecurity dropped also in the control commune of La Muya but more moderately: it was reduced from 3.7% to 3.1% during the same period of time.

When this analysis is performed with matched data, the drop is even deeper. The net drop after the introduction of community policing in Bipemba is 66.1% according to the 2nd matching method.

3.3 The severity of insecurity

The community policing project reduced the severity of insecurity affecting all residents of the commune of Bipemba by 30.4%. The impact is slightly larger when matched data using the 2nd method are used: it is estimated at 31.9%.

How much did community policing reduce the severity of insecurity? In the baseline study, the severity of insecurity was measured at 0.46 in Bipemba and 0.45 in the Muya control zone. After the introduction of community policing in Bipemba, the level of severity dropped to 0.29. In the control zone, we measured the severity of insecurity at 0.42 at time t_2 . The net drop of the severity of insecurity that can be attributed to the community policing project is estimated at 30.4% when calculated with unmatched data and 31.9% when using matched data with the second method. This means that insecurity dropped for most residents in Bipemba. Not only did the project reduce the number of residents who crossed the insecurity line, but the severity of insecurity was reduced for the average resident by about 30%.

3.4 Vulnerability to insecurity

The community policing pilot project in Bipemba reduced also the vulnerability to insecurity by 49.2% if we use unmatched data. This net impact is 48.6% when data are matched using the 2nd method.

The group of residents vulnerable to insecurity (G_0) represented 18.3% of the population of Bipemba and 18.0% in Muya when we conducted the baseline study at time t_1 . After the introduction of community policing in Bipemba, this group's size greatly reduced and represents today only 6.9% of the population while, in the control zone of Muya, the size of the group reduced slightly at time t_2 still representing 15.6% of the population. The net impact of the community policing project in Bipemba corresponds to a 49.2% drop in vulnerability. While this is a significant drop, the vulnerability did not drop as much as the incidence of insecurity. The same calculation with matched data gives similar results. The net drop of vulnerability when using matched data with the second method is estimated at 47.8%. As a result, as we will see below, instability increased and the community policing gains are fragile.

3.5 The target group

The estimated impact of the community policing project on the target group (G_1) is a reduction by 57.5% of the size of this group. When using matched data with the second method, the drop is even larger: 73.3%.

The size of the G_1 target group was measured at 13.4% of the total population in Bipemba and 12.8% in Muya in the baseline study. After a year of exposure to community policing, this group was greatly reduced and represents only 4% of the population in Bipemba project. In the control zone of Muya, the target group's size was left practically unchanged between the baseline study and time t_2 period. At time t_2 , it still represents 11.1% of the population in Muya. The net impact estimate of the community policing project when using non-matched data is a drop of 57.5%. When using matched data with the second method, the drop is even larger: 73.3%.

This result can be interpreted as indicating that the reform has already reached a certain level of saturation and that, in the future, it will be difficult to make significant gains in lowering the incidence of insecurity. The target group representing the number (or proportion) of residents that can be reached out relatively easily by an improvement of security became small – 4% in Bipemba. Any further progress in terms of community policing in Bipemba will have little impact on the future levels of the incidence of insecurity. The reform in Bipemba may be advised to change its focus to improve the vulnerability to insecurity instead. This is what we will argue in the next subsection.

3.6 Stability of security

Despite a very significant drop of insecurity in the Bipemba pilot zone, security remains relatively unstable in the project's intervention zone after the intervention of community policing. Stability is measured by G_2 and G_2 is high. Indeed, the ratio obtained by dividing G_0 by H_0 is 0.93 in Bipemba and thus situated well over the maximum of 0.5 for a stable security.

G_2 measures the stability of security (Table 5). When the size of the group of residents vulnerable to insecurity is high and the ratio of G_0 divided by H_0 is higher than 0.5 (half of H_0), security is considered unstable. In other words, a slight deterioration in the security situation may have a considerable impact on the rise of the incidence of insecurity. Many people, to say it differently, may cross the insecurity line. With data matched using the second method, the ratio is even higher than with non-matched data in Bipemba: 0.98. In other words, the gains obtained by community policing can be relatively quickly reversed if nothing is done to reduce further the vulnerability to insecurity. As the previous analysis in

subsection 3.5 showed that not much can be gained by focusing on the target group, we argue that the police reformers and strategists in Bipemba may consider focusing on the objective to stabilize the gains by targeting the vulnerable group. The police reform in Bipemba may now turn its attention to consolidate the gains rather than investing in further reduction of the incidence of insecurity.

Table 5: The stability of security in Bipemba and Muya after the introduction of community policing in Bipemba
Table 1: The stability of insecurity in the communes of Mbujimayi in the t_2 period (2017)

	No matching		Score (1 st method)		Score (2 nd method)	
	Pilot zone	Control zone	Pilot zone	Control zone	Pilot zone	Control zone
	Bipemba	Muya	Bipemba	Muya	Bipemba	Muya
G₂ (incidence of insecurity)	0.932	0.852	0.932	0.858	0.984	0.756
N	1,197	1,205	1,187	1,187	890	890

Section 4. Impact by Dimension

4.1 Which dimensions contribute most to insecurity?

The method used for computing the insecurity index allows to calculate the relative weight of each dimensions of the index (i.e. crime, incivility, fear of crime, access to police forces and trust) for each outcome indicator.² We performed this analysis using unmatched data only.

Access and trust are the two dimensions contributing most to the incidence of insecurity (Table 6) and to the vulnerability to insecurity (Table 7). This finding is true before and after the introduction of community policing. These two dimensions have a combined weight of over 50% in both H_0 (incidence of insecurity) and G_0 (vulnerability to insecurity).

Comparatively, the three other dimensions contribute much less to both the incidence of insecurity and the vulnerability to insecurity. Crime is the dimension that contributes the less to both indicators of insecurity.

This finding has implications for police strategists in Mbujimayi and, most probably, in DRC in general. By improving access and trust, police have and will continue to have in the future the most returns in terms of reduction of the incidence of insecurity and the vulnerability to insecurity. In the next subsection 4.2, we will show that community policing in Bipemba was particularly efficient in improving access and trust. As these two dimensions are the main levers of H_0 and G_0 , this explains why the community policing project in Bipemba is found so

² This is done by calculating the percentage to the total of the means obtained by each dimension for the indicator studied.

successful in reducing both the incidence of insecurity and the vulnerability to insecurity. In other words, the community policing strategy impacted most on the two main levers of insecurity. It was perfectly adapted security situation in Mbujimayi as the incidence of insecurity (and the vulnerability to insecurity) are mostly explained by the lack of access to police services and the lack of trust and legitimacy of police. Improving both resulted quickly in the high returns we observed in section 3 of this report.

Table 6: Weights by dimension in the incidence of insecurity before and after the community policing project on Bipemba and Muya, in %

	Crime	Incivility	Fear of crime	Access	Trust
H₀ (incidence of insecurity)	%	%	%	%	%
Bipemba t₁	8.7	20.2	19.9	25.2	26.0
Bipemba t₂	7.1	21.0	18.8	26.8	26.3
Muya t₁	8.1	20.6	20.2	25.3	25.8
Muya t₂	7.1	20.4	21.0	26.1	25.4

Table 7: Weights by dimension in the vulnerability to insecurity before and after the community policing project on Bipemba and Muya, in %

	Crime	Incivility	Fear of crime	Access	Trust
G₀ (vulnerability to insecurity)	%	%	%	%	%
Bipemba t₁	5.3	16.6	21.9	29.3	27.0
Bipemba t₂	4.9	16.6	20.2	31.3	27.0
Muya t₁	6.6	18.9	19.8	27.3	27.3
Muya t₂	4.3	17.3	21.8	29.5	27.1

Source: survey

4.2 Estimated impact by dimension of insecurity

This subsection provides information on how large was the impact of the community policing project on each dimension of insecurity separately. We start this review with the crime dimension.

Crime

Did the introduction of community policing reduce crime? The answer is yes. Using non-matched data, we applied the DiD to estimate the net impact of the community policing project in Bipemba on the crime dimension in the index. Overall, all crimes considered,

crime was reduced by 19.6% in Bipemba as net effect of the project (Table 8).³ It should be noted that crime rates decreased in both the pilot commune and the control commune. However, the scale of the drop was greater in the pilot zone.

Considering the different types of crime we collected data for in the surveys, we observe that the main drops concerned assaults (-40.1%) and sexual violence (-35.9%). The impact on burglary rates is much lower: -14.1%. The explanation for the lower estimate of impact in the case of burglaries is that burglaries have dropped significantly in both areas – the pilot zone and the control zone – in 2017. Thus, the DiD method estimates the impact of the community policing project as only -14.1% in their case even if burglaries rates dropped by more than half in Bipemba.

Table 8: Estimated impact of the community policing pilot project on crime after the difference-in-differences calculation on the dimension of crime in the insecurity index (means)

Crime	Bipemba pilot zone	Muya control zone	Estimated impact of the project in %
	means	means	
t₁ (2016)	0.56	0.55	
t₂ (2017)	0.26	0.36	
Change	-0.30	-0.19	-19.6

Table 9: Change in burglary, assault and sexual violence rates in the Bipemba pilot zone and the Muya control zone, and assessment of the impact of the project for each of those categories of crime after the difference-in-differences calculation without matching procedure

Burglary	Bipemba pilot zone	Muya control zone	Estimated impact of the project in %
t₁ (2016)	35.04	35.61	
t₂ (2017)	16.46	21.98	
Change	-18.6	-13.6	-14.1

Assault	Bipemba	Muya	Estimated impact of the project in %
t₁ (2016)	9.87	8.57	
t₂ (2017)	3.67	6.63	
Change	-6.2	-2.2	-40.1

Sexual assault	Bipemba	Muya	Estimated impact of the project in %
t₁ (2016)	1.69	1.59	

³ To estimate the impact, we compare the means for the entire population of the crime dimension as computed in the insecurity index and apply the DiD to obtain the net effect that can be attributed to the intervention of the project.

t₂ (2017)	1.42	1.83	
Change	-0.27	0.24	-35.9

Incivility

Globally, the incivility dimension of the insecurity index declined slightly. However, as the drop of incivilities was greater in the control commune of Muya, the net impact of the project is slightly positive with a 4.3% increase in the incivilities dimension (Table 10).

The following series of tables provide more details on the impact of the community policing project for the main incivilities. After the DiD calculation, it appears that the only area of incivility which declined more strongly in the community policing pilot zone than in the control commune, is the presence of aggressive youth gangs. The study estimates the impact as a net drop of 33.5% in this case (Table 11). For other incivilities, the analysis shows that they all declined in Bipemba after the introduction of community policing (except for the issue of drugs which increased), but that these drops were greater in the Muya control zone.

Given that neighborhood chiefs are particularly involved in dealing with incivilities and that, for example, insalubrity falls within their remit, one possible explanation for the drops in Muya is that the neighborhood forums in Muya have been particularly dynamic and active on these issues. In other words, as incivilities are mostly handled by the neighborhood chiefs, respectively the forums established within the framework of the IOM-supported project in the control commune as well, this might partially explain why our research design does not detect an impact for incivilities. We find however that community policing impacted relatively strongly on the reduction of youth gangs that affect negatively security in Bipemba.

Table 10: Estimated impact of the community policing pilot project on incivilities after the difference-in-differences calculation on the dimension of incivility in the insecurity index

Incivility	Bipemba pilot zone average	Muya control zone average	Estimated impact of the project in %
t₁ (2016)	1.61	1.63	
t₂ (2017)	1.44	1.39	
Change	-0.17	-0.24	4.3

Table 11: Estimates of impact for insalubrity, aggressive youth gangs, drug problems and street fighting in the Bipemba pilot zone after the introduction of community policing

Insalubrity	Bipemba	Muya	Estimated impact of the project in %
t₁ (2016)	40.08	50.79	
t₂ (2017)	32.64	33.64	
Change	-7.44	-17.15	24.2

Aggressive youth gangs	Bipemba	Muya	Estimated impact of the project in %
t₁ (2016)	25.36	22.24	
t₂ (2017)	18.28	23.66	
Change	-7.08	1.42	-33.5

Drug problems in the street	Bipemba	Muya	Estimated impact of the project in %
t₁ (2016)	57.71	53.79	
t₂ (2017)	59.42	52.11	
Change	1.71	-1.68	5.9

Street fighting	Bipemba	Muya	Estimated impact of the project in %
t₁ (2016)	56.03	53.99	
t₂ (2017)	49.96	45.79	
Change	-6.07	-8.20	3.8

Fear of crime

The estimated impact of the project on the fear of crime is a net 45.7% drop (Table 12). Residents of Bipemba felt safer, were much more positive than their fellow residents in the control commune of Muya about the risks of crime victimization, and assessed insecurity as lower than in Muya.

The impact on the fear of crime during the day and at night is relatively modest. We calculated a drop -18.3% of the fear of crime during the day (Table 13) and a drop of -16.9% of the fear of crime at night (Table 14) as net impact of the project. The drop is larger – a reduction of 48.4% - for the self-assessment of residents of the risk of being a victim of crime in the next 12 months (Table 15). Residents of Bipemba rated security higher than in Muya and we calculated the net impact of the project as a 28.2% increase in the rating (Table 16).

Table 12: Estimates of the impact of the community policing project on fear of crime in the commune of Bipemba (change of means in the index)

	Bipemba pilot zone	Muya control zone	Estimated impact of the project in %
	average	average	
t₁ (2016)	1.75	1.68	
t₂ (2017)	0.89	1.62	
Change	-0.86	-0.06	-45.7

Table 13: Estimates of the impact of the community policing project on the fear of crime during the day in Bipemba

	Bipemba pilot zone	Muya control zone	Estimated impact of the project in %
	average	average	
t₁ (2016)	17.94	21.44	
t₂ (2017)	6.0	12.79	
Change	-11.94	-8.65	-18.3

Table 14: Estimates of the impact of the community policing project on the fear of crime at night in Bipemba

	Bipemba pilot zone	Muya control zone	Estimated impact of the project in %
	average	average	
t₁ (2016)	77.58	77.27	
t₂ (2017)	59.61	72.44	
Change	-17.97	-4.83	-16.9

Table 15: Estimates of the impact of the community policing project on perceptions of the probability of being a victim of crime in the next 12 months in Bipemba

	Bipemba pilot zone	Muya control zone	Estimated impact of the project in %
	average	average	
	%	%	
t₁ (2016)	61.67	57.62	
t₂ (2017)	28.43	54.15	
Change	-33.24	-3.47	-48.3

Table 16: Estimates of the impact of the community policing project on perceptions of the security level in Bipemba

	Bipemba	Muya	Estimated impact of the project
	average	average	
t₁ (2016)	4.12	4.31	
t₂ (2017)	5.54	4.57	
Change	1.42	0.26	28.2

Access

In the insecurity index, the DiD calculation indicates a marked decline in the lack of access to police services perceived by residents: -36.7%. In other words, access to policing services has greatly improved in Bipemba as direct result of the introduction of community policing. Table 17 shows that the means obtained by this dimension in the index remained practically unchanged in the control zone of Muya between t₁ and t₂, while in the pilot commune of Bipemba the change is large: -0.79.

Table 17: Estimate of the impact of community policing on the dimension of access to police services in Bipemba

	Bipemba pilot zone	Muya control zone	Estimated impact of the project in %
	average	average	
t₁ (2016)	2.29	2.19	
t₂ (2017)	1.50	2.24	
Change	-0.79	0.05	-36.7

Table 18 provides more detailed information on the improvement of access. We find evidence of a positive impact of community policing on many services of the police. The net impact of community policing is highest on prevention (92% increase in Bipemba compared to the baseline study at time t₁). DiD estimates of impact are: proximity of police (90% improvement), partnership policing (83.6%), problem-solving (75.3%), response times (58.7%), police visibility in the neighborhood in the form of foot patrols (45.6%). There is no single area of the doctrine of community policing that has witnessed an improvement with the project. As mentioned before, the increase of access plays a key role in the reduction of the incidence of insecurity in Bipemba.

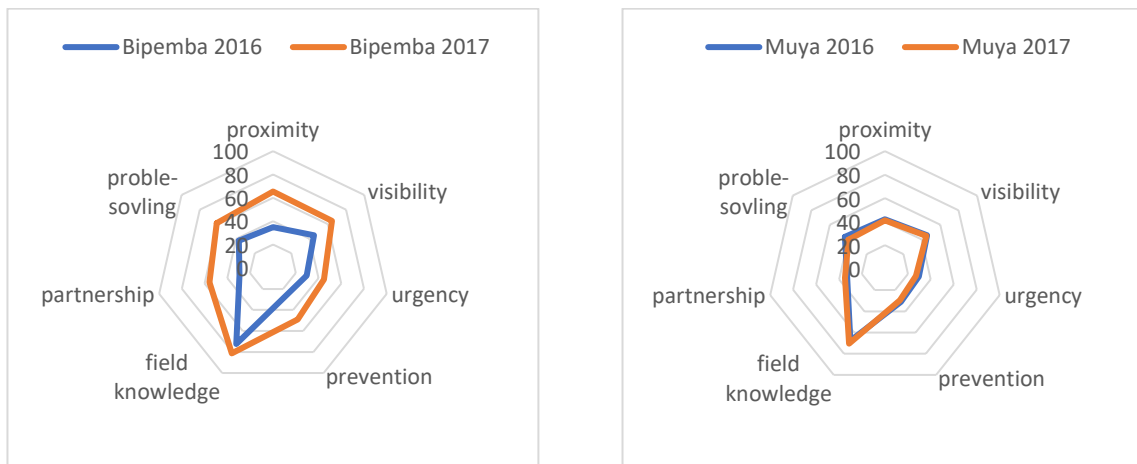
Table 18: Estimates of the impact of community policing in Bipemba by type of service

Community policing services	t ₁ (2016)	t ₂ (2017)	Estimated impact of the project in %
Proximity	34.9	65.4	90.0
Response times	29.8	44.8	58.7
Visibility	45.0	64.7	45.6
Prevention	26.3	49.2	92.0
Partnership	29.3	55.8	83.6
Field knowledge	72.4	81.3	8.6
Problem resolution	37.3	61.7	75.3

Source: Surveys

The following figures (Figure 2) present graphically the changes in both communes between the baseline study at time t₁ and the impact survey at time t₂. Each angle point on the perimeter of the polygons corresponds to the percentage of positive opinion of residents for the corresponding service. The figure on the left shows the evolution in the Bipemba pilot zone and the figure on the right the evolution in the Muya control zone. The blue polygon measures the opinion at the time of the baseline study in 2016 and the orange polygon measures these opinion at the t₂ period in 2017. No evolution is perceptible in the control commune of Muya. The blue and orange polygons overlap exactly. In the pilot zone, the percentages of positive opinions increased strongly for practically all services as can be observed from the 2017 orange polygon.

Figure 2: Comparative evolution of policing polygons in the pilot zone (Bipemba) and the control zone (Muya) between the t₁ and t₂ periods



Trust

On the insecurity index, as direct result of the project, we observe a sharp increase of trust in police estimated at 41.3%. The negative sign of the impact estimate shown in Table 19 should be read as a percentage decrease of the *lack of trust* in police. As anticipated by the

reform, community policing results in a sharp rise of police legitimacy. By increasing police legitimacy, the community policing project managed to reduce greatly the incidence of insecurity as trust is a major contributor to this indicator. In other words, the community policing project activated a main lever of the incidence of insecurity.

Table 19: Estimate of the impact of the community policing project on the lack of trust in police in Bipemba

	Bipemba pilot zone	Muya control zone	Estimated impact of the project in %
	average	average	
t₁ (2016)	2.06	2.01	
t₂ (2017)	1.09	1.89	
Change	-0.99	-0.12	-41.3

The following tables provide separate estimates of the impact of the community policing pilot project on the image of the police and the opinion of resident regarding police deontology (or equity of treatment). While the image of the police remained practically unchanged in the Muya control zone during the project duration, it improved considerably with the introduction of community policing in Bipemba. The estimated impact of the project is a sharp 101.9% increase of positive opinions regarding the quality of the work of the police (Table 20). Similarly, residents exposed to the community policing project in Bipemba expressed a markedly more positive opinion of police deontology. Positive opinion in this regard increased by 54.6% as direct result of the project (Table 21).

Table 20: Estimate of the impact of community policing on the image of the police in Bipemba

	Bipemba pilot zone	Muya control zone	Estimated impact of the project
	%	%	%
t₁ (2016)	35.18	39.95	
t₂ (2017)	71.36	40.29	
Change	36.18	0.34	101.9

Source: surveys

Table 21: Estimate of the impact of the community policing on the opinion regarding police deontology in Bipemba

	Bipemba pilot zone	Muya control zone	Estimated impact of the project
	%	%	%
t₁ (2016)	19.94	14.59	
t₂ (2017)	36.15	19.92	
Change	16.21	5.33	54.6

Source: surveys

Table 22 presents the survey results regarding the level of satisfaction of a contact with the police. The estimated impact of the project is an increase of 212.8% in the percentage of residents saying they were “very satisfied” with the contact they had with the police. The “very satisfied” group increased by 19.8 points between the t₁ period and the t₂ period in Bipemba, while in the same period this group reduced in Muya by 20.2 points.

Table 22: Estimates of impact of the community policing project on the residents very satisfied by a contact with the police in Bipemba

		Dissatisfied	Fairly satisfied	Very satisfied
Bipemba pilot zone	t ₁ (2016)	39.1	42.1	18.8
	t ₂ (2017)	43.4	17.9	38.6
	Change			19.8
Muya control zone	t ₁ (2016)	38.0	30.7	31.3
	t ₂ (2017)	76.3	12.6	11.1
	Change			-20.2
Estimated impact of the community policing project on those who were “very satisfied”				212.8%

Although residents’ experience of contact with the police during the last 12 months has globally greatly improved in Bipemba since the introduction of community policing, satisfaction depends on the type of situation. Satisfaction increased markedly with the way police handles complaints for assaults; it dropped however in the case of complaints for burglaries. Residents of Bipemba who reported cases of burglary to the police display lower levels of satisfaction in 2017 than in 2016. This is also true in Muya. The net estimated impact of the project proves to be negative: - 34.6% (Table 23). By contrast, we find evidence of an important improvement of how police handled complaints for assaults after the introduction of community policing. The net impact estimate of the project is a 167% increase of satisfaction.

Such mixed results might have a relatively simple explanation. The community policing training did not include improving police officers’ skills in criminal investigations requiring forensic investigative methods such as taking fingerprints as no such equipment (and databases) are available in Mbujimayi. However, for assaults where, in many cases, the aggressor is known to the victim, police are perceived as successful in handling these matters.

Table 23: Estimates of impact of community policing on the level of satisfaction of residents with how the police handles complaints for burglaries and assaults respectively in Bipemba

		Bipemba pilot zone	Muya control zone	Net impact of the project
Level of satisfaction after reporting:	Date	%	%	%
Burglary	t ₁ (2016)	20.5	11.7	
	t ₂ (2017)	10.0	8.3	
	Change	-10.5	-3.4	-34.6
Assault	t ₁ (2016)	26.7	26.7	
	t ₂ (2017)	60.0	15.4	
	Change	33.3	-11.3	167.0

Source: surveys

The introduction of community policing did impact on reporting rates of incidents to the police. Between the baseline and the impact surveys, the levels remained practically unchanged for burglary in the Bipemba pilot zone (10.5% in 2016 and 10.7% in 2017). As the reporting rate increased in Muya, the DiD estimate is negative for Bipemba (-33.8%).

Consistent with the higher levels of satisfaction with police for assaults, we find evidence however that community policing increased the reporting rates in Bipemba for assaults. The impact estimate is positive with a 58.8% increase in reporting to the police.

In the baseline study, we had observed that neighborhood chiefs are the main recipients of complaints for burglaries. In the impact survey, we did not find evidence for an important change in this regard (see Table 24). In Bipemba, 40.6% of burglaries are still reported directly to neighborhood chiefs in 2017. The proportion is practically identical in Muya where 42.4% of burglaries are reported to neighborhood chiefs in 2017. The figures for 2016 were comparable. The project appears to have had a slight net positive effect of 7% on the numbers reporting incidents to neighborhood chiefs.

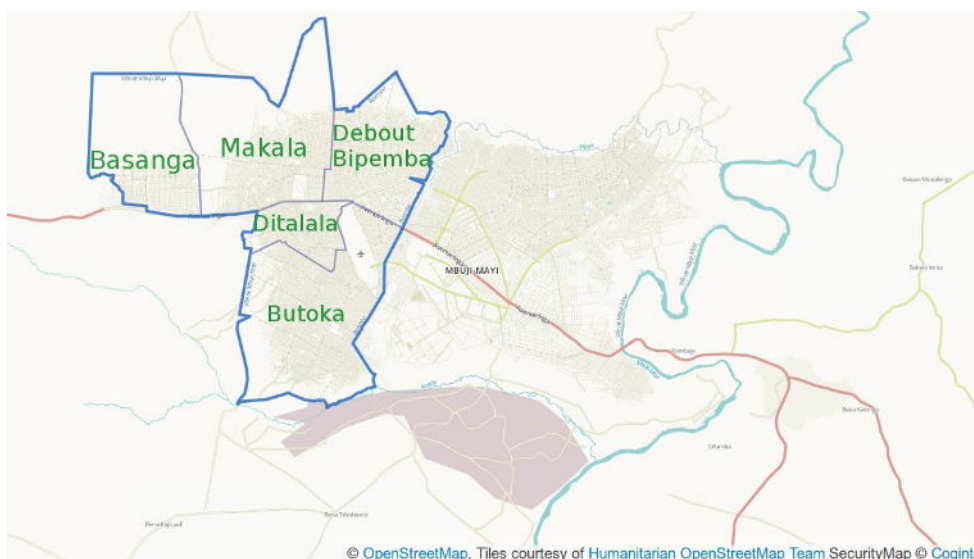
With regard to assaults, the situation is different. The community policing project results in an estimated 16.8% decrease of reporting to the neighborhood chiefs. In other words, as police gain trust and confidence of residents that they can handle successfully investigations on assaults, residents start turning more to the police in such cases. In Muya, where the community police was not introduced but neighborhood chiefs were strengthened in their role as civilian oversight of security, reporting to the neighborhood chiefs increased.

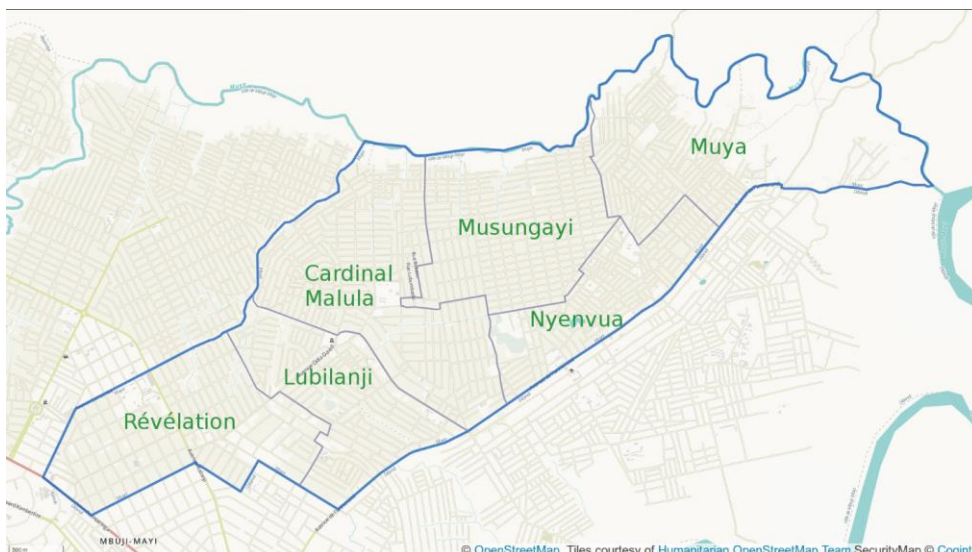
Table 24: Estimates of the impact of community policing on the rates of reporting respectively burglaries and assaults to the police and neighborhood chiefs in Bipemba

		Bipemba pilot zone	Muya control zone	Net impact of the project
Reporting rates of burglary to police	Period of survey	%	%	%
	t ₁ (2016)	10.5	14.4	
	t ₂ (2017)	10.7	18.2	
	Change			-33.8
Reporting rates of burglary to neighborhood chief	t ₁ (2016)	43.1	47.9	
	t ₂ (2017)	40.6	42.4	
	Change			7.0
	Rate of reporting of assault to police	%	%	%
Reporting rate of assault to neighborhood chief	t ₁ (2016)	12.7	14.6	
	t ₂ (2017)	22.7	17.1	
	Change			58.8
	t ₁ (2016)	28.0	20.4	
Change	t ₂ (2017)	31.3	28.9	
	Change			-16.8

Section 5. The Indicators in the Districts of Bipemba

Map 3: The neighborhood forums in the commune of Bipemba and the commune of Muya



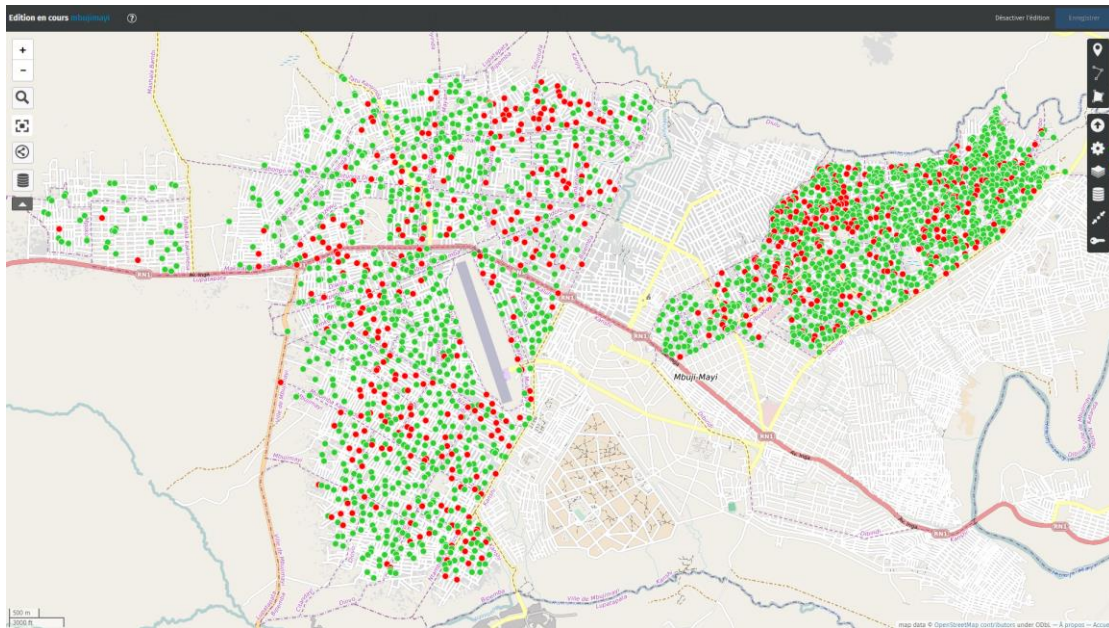


Although the data loses a lot of its representativeness and the margins of error increase when the outcome indicators are measured at neighborhood level, a territorial analysis may still allow to identify trends worth noticing. In April 2016, a team from Coginta, with the help of the neighborhood chiefs, mapped out digitally the administrative boundaries of all the neighborhoods of Bipemba (and Muya). As these neighborhoods were regrouped in so-called forums, we produced the map of the five forums of the commune of Bipemba (see Map 3) and measured the outcome indicators in each forum.

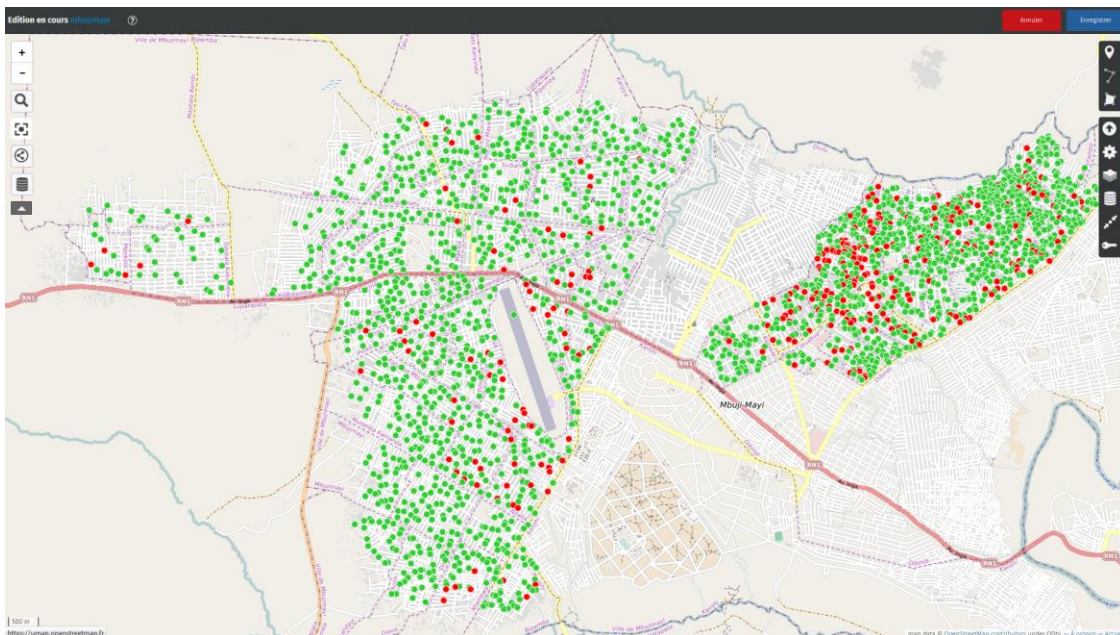
By comparing the next two maps, it is possible to have a visual of the evolution of the incidence of insecurity (H_0) in the Bipemba pilot zone and the Muya control zone between the baseline survey at t_1 and impact survey at t_2 . The red dots represent residents who crossed the insecurity line and the green ones those who did not. These maps should be read alongside with Tables 24 and 25 which provide the figures for H_0 for all forums of Bipemba and Muya. Map 4 present the baseline situation and Map 5 the situation after the implementation of the project in Bipemba. Map 6 is a heat map based on data on residents who crossed the insecurity line in Bipemba. It allows visualizing the remaining insecurity hotspots in Bipemba after the introduction of community policing.

Without going into the details, Map 5 has obviously much less red dots in Bipemba than Map 4. By contrast, the situation in Muya seems – at least visually when looking at the red dots - rather unchanged. Tables 25 and 26 confirm this impression. In Muya, change was moderate in all forums. Cardinal Mulala and Musungayi experienced the larger drops of respectively -5.6 and -5.8 points. By contrast, in Bipemba, the drops are much larger in Debout Bipemba (-23.9 points), Malaka (-17.5 points), Butoka (-16.2 points) and Ditala (-13 points). The only forum that did not experience a reduction of insecurity is Basanga. The incidence of insecurity increased slightly by 4.3 points.

Map 4: Incidence of insecurity in the communes of Bipemba and Muya in the t_1 period (April 2016)



Map 5: Incidence of insecurity in the pilot commune of Bipemba and the control commune of Muya after the project in the t_2 period (July 2017)



Map 6: Heatmap identifying the insecurity hotspots in Bipemba in the t_2 period

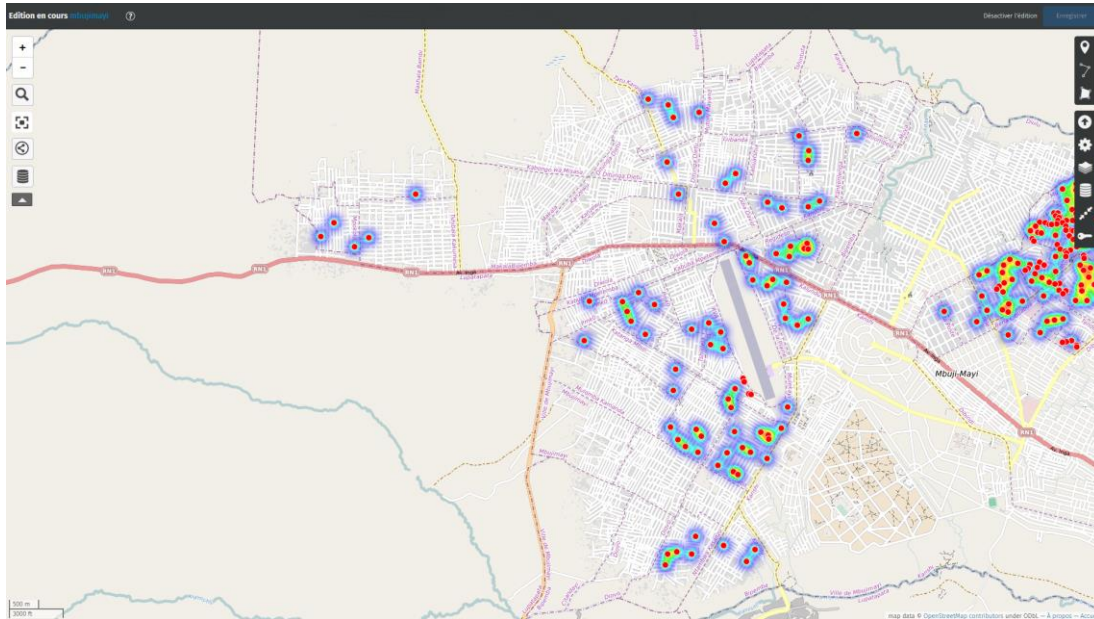


Table 25: Change in incidence of insecurity (H_0) in the neighborhood forums of the pilot commune of Bipemba between the t_1 and t_2 periods

	Butoka	Basanga	Makala	Debout Bipemba	Ditala
	%	%	%	%	%
H_0 in t_1	26.0	6.3	20.5	30.1	19.3
H_0 in t_2	9.8	10.6	3.0	6.2	6.3
Change	-16.2	4.3	-17.5	-23.9	-13.0

Table 26: Change in incidence of insecurity (H_0) in the neighborhood forums of the control commune of Muya between the t_1 and t_2 periods

	Révélation	Lubilanji	Cardinal Mulala	Musungayi	Nyenvua	Muya
	%	%	%	%	%	%
H_0 in t_1	19.7	24.7	31.1	18.8	16.9	12.3
H_0 in t_2	18.4	22.8	25.5	13.0	16.7	10.9
Change	-1.3	-1.9	-5.6	-5.8	-0.2	-1.4

Within the forums of Muya, some neighborhoods present very high levels of H_0 . Although these are just trends, given the small number of interviews per neighborhood, the incidence of insecurity seems the highest in the neighborhoods of Mgr N’Kongolo Joseph (45.5%),

Tshibanu Mpoyi (45.2%) and Muluma Musulu (41.8%). In Bipemba, Table 27 is a selection of the neighborhoods with the highest incidence of insecurity. Several neighborhoods display incidence levels as high as 30%: De la Plaine and Regideso.

Table 27: Incidence of insecurity in the neighborhoods most affected by the H_0 in Bipemba in the t_1 and t_2 periods

	Mpokolo	Mulekayi	Nzaba	Lubuebue	Kandolo	De la Plaine	Regideso
	%	%	%	%	%	%	%
H₀ in t₁	9	32	31	44	44	31	33
H₀ in t₂	27	20	27	20	25	30	30

The next table (Table 28) presents the outcome indicators of the incidence of insecurity (H_0), extreme insecurity (H_1), vulnerability to insecurity (G_0) and stability (G_2) per forum in the Bipemba commune at t_1 time and at t_2 time after the introduction of community policing.

As mentioned above, H_0 declined in all forums except in Basanga where it increased slightly to reach 10.6%.

Extreme insecurity (H_1) declined everywhere except in Ditala where 2.5% of residents live in extreme insecurity conditions.

Vulnerability to insecurity (G_0) declined everywhere except in Basanga where it increased quite markedly, reaching 12.8% of residents. Elsewhere, the number of vulnerable residents is 7.5% or less.

As a rule, security is unstable in all neighborhoods. The significant improvements in Makala are very fragile given that the instability indicator is very high (246.7%). Instability is also very high in Basanga and Ditala (approximately 120%), while it is more moderate for the two other forums: Butoka and Debout Bipemba. The very significant improvements in Debout Bipemba are particularly interesting insofar as they are close to the stability level according to the G_2 indicator (66.1%).

Table 28: Change in outcome in the neighborhood forums of the commune of Bipemba before and after the introduction of community policing for the main outcome indicators

	Butoka	Basanga	Makala	Debout Bipemba	Ditalala
	%	%	%	%	%
Incidence of insecurity					
H₀ t₁ (April 2016)	26.0	6.3	20.5	30.0	19.3
H₀ t₂ (July 2017)	9.8	10.6	3.0	6.2	6.3
Change	-16.1	4.3	-17.5	-23.9	-13.0

Incidence of extreme insecurity						
H₁	t ₁ (April 2016)	5.5	0.0	3.5	6.6	2.5
H₁	t ₂ (July 2017)	1.6	0.0	1.5	1.0	2.5
Change		-3.9	0	-2	-5.6	0
Vulnerability to insecurity						
G₀	t ₁ (April 2016)	15.4	4.2	22.5	20.3	22.4
G₀	t ₂ (July 2017)	7.4	12.8	7.4	4.1	7.5
Change		-8.0	8.6	-15.1	-16.2	-14.9
Stability of insecurity						
G₂	t ₁ (April 2016)	59.2	66.7	109.8	67.7	116.1
G₂	t ₂ (July 2017)	75.5	120.8	246.7	66.1	119.0
N		500	47	202	292	160

Section 6. The gender gap of community policing

We found evidence for a gender bias in the implementation of community policing in Bipemba. While both gender benefited from community policing, men benefited significantly more than women. The net estimated impact of community policing on the incidence of insecurity is a drop of 69.2% for men against 40.8% for women. In Bipemba, 10% of women are affected by the incidence of insecurity against 4.7% of men in 2017 after the introduction of community policing. A similar gender gap is observed for all outcome indicators (Table 29). To take another example, extreme insecurity reduced by 70.6% for men but by 41.3% (only) for women. For women, insecurity tends to be concentrated in the territories that are at the periphery of the commune: Basanga and Butoka. In Basanga, the incidence of insecurity reaches 17.4% for women (compared to 4.2% for men) in July 2017. In Butoka, it reaches 12% for the women compared to 7.6% for men in this southern territory. One may add that 21.7% of women in Basanga are vulnerable to insecurity, a particularly high number denoting a precarious situation for women in this western section of the commune of Bipemba.

Table 29 : DiD estimates of the impact of community policing in the treatment area of Bipemba by gender with non-matched data

Index indicator	Area	Period	Men (N = 2'388)	Women (N = 2'424)	
H ₀ Incidence of insecurity (Treatment area of Bipemba	t ₁ (pre-treatment)	26.6	22.3	
		t ₂ (post-treatment)	4.7	10.0	
	Control area of Muya	t ₁ (pre-treatment)	22.7	20.5	
		t ₂ (post-treatment)	19.2	17.3	
			DiD net change	-18.40 **	-9.10 **
			% change	-69.2%	-40.8%
	Treatment area of Bipemba	t ₁ (pre-treatment)	5.1	4.6	

Index indicator	Area	Period	Men (N = 2'388)	Women (N = 2'424)
H ₁ Incidence of extreme insecurity		t ₂ (post-treatment)	0.0	3.0
	Control area of Muya	t ₁ (pre-treatment)	3.0	4.4
		t ₂ (post-treatment)	1.5	4.7
		DiD net change	-3.60 **	-1.90
		% change	-70.6%	-41.3%
S Severity of insecurity for the whole population	Treatment area of Bipemba	t ₁ (pre-treatment)	0.47	0.45
		t ₂ (post-treatment)	0.28	0.29
	Control area of Muya	t ₁ (pre-treatment)	0.46	0.44
		t ₂ (post-treatment)	0.45	0.39
		DiD net change	-0.18 **	-0.11 **
		% change	-38.3%	-24.4%
	G ₀ Vulnerable Group	Treatment area of Bipemba	t ₁ (pre-treatment)	19.3
t ₂ (post-treatment)			6.9	6.8
Control area of Muya		t ₁ (pre-treatment)	20.0	16.1
		t ₂ (post-treatment)	19.7	11.5
		DiD net change	-12.10 **	-5.90 **
	% change	-62.7%	-34.1%	

After the introduction of community policing in Bipemba, the incidence of insecurity (H₀), extreme insecurity (H₁) and vulnerability to insecurity (G₀) are also markedly higher for the 18 to 25 age group (Table 30). The incidence of insecurity (H₀) is situated at 13.1% for this younger age group, while it is significantly lower – about 5.6% on average - for the older age groups. Extreme insecurity affects 3.2% of this younger age group compared to 1% on average for the others. The estimates of the impact of community policing are consistently lower for the younger age group. Table 30 provides the details for each age group. In other words, the younger age group benefited far less than others from the introduction of community policing and, as a consequence, they feature higher levels of insecurity on all key outcome indicators.

Table 30 : DiD estimates of the impact of community policing in Bipemba per indicator and age group

Index indicator	Area	Period	18-25 (N = 1167)	26-35 (N = 1157)	36-45 (N = 995)	46-65 (N = 1180)	65 and more (N = 313)
H ₀ Incidence of insecurity	Treatment area of Bipemba	t ₁ (pre-treatment)	27.0	24.0	20.6	26.0	23.3
		t ₂ (post-treatment)	13.1	7.5	4.7	4.1	6.9

Index indicator	Area	Period	18-25 (N = 1167)	26-35 (N = 1157)	36-45 (N = 995)	46-65 (N = 1180)	65 and more (N = 313)
H ₁ Incidence of extreme insecurity	Control area of Muya	t ₁ (pre-treatment)	23.3	16.1	21.5	25.0	21.4
		t ₂ (post-treatment)	18.2	22.0	15.0	17.0	19.8
		DiD net change	-8.80 **	-22.40 **	-9.40 **	-13.90 **	-14.80 **
		% change	-32.6%	-93.3%	-45.6%	-53.5%	-63.5%
	Treatment area of Bipemba	t ₁ (pre-treatment)	4.5	4.9	3.6	5.5	6.7
t ₂ (post-treatment)		3.2	1.7	0.4	1.0	0.0	
S Severity of insecurity for the whole population,	Control area of Muya	t ₁ (pre-treatment)	4.9	2.2	1.6	6.2	1.4
		t ₂ (post-treatment)	4.8	3.8	2.1	2.0	1.2
		DiD net change	-1.20	-4.80 **	-3.70 **	-0.30	-6.50 **
		% change	-26.7%	-98.0%	-102.8%	-5.5%	-97.0%
	Treatment area of Bipemba	t ₁ (pre-treatment)	0.45	0.46	0.45	0.47	0.47
t ₂ (post-treatment)		0.36	0.29	0.26	0.25	0.25	
G ₀ Vulnerable Group	Control area of Muya	t ₁ (pre-treatment)	0.46	0.43	0.45	0.45	0.44
		t ₂ (post-treatment)	0.44	0.42	0.40	0.40	0.42
		DiD net change	-0.07 **	-0.16 **	-0.14 **	-0.17 **	-0.20 **
		% change	-15.6%	-34.8%	-31.1%	-36.2%	-42.6%
	Treatment area of Bipemba	t ₁ (pre-treatment)	16.5	17.4	18.3	20.2	20.0
t ₂ (post-treatment)		12.0	6.8	4.3	5.1	2.8	
G ₀ Vulnerable Group	Control area of Muya	t ₁ (pre-treatment)	18.1	19.7	17.4	16.3	20.0
		t ₂ (post-treatment)	17.2	15.3	16.2	13.4	17.3
		DiD net change	-3.60	-6.20 *	-12.80 **	-12.20 **	-14.50 **
		% change	-21.8%	-35.6%	-70.0%	-60.4%	-72.5%

A finer analysis shows that the higher level of insecurity displayed by the 18 to 25 age group is explained mainly by the gender gap that deepens for this group. Young women did not benefit at all from the community policing project in Bipemba. None of the impact indicators are statistically significant, except for the slight drop in the severity of insecurity. By contrast, younger men benefited from the community policing project and insecurity dropped significantly for them for all key outcome indicators. To take one example, the incidence of insecurity dropped by 62.7% for young men while it did not drop significantly for young women at all. To take another example extracted from Table 31, extreme insecurity dropped by 105.3% for young men and increased (but the increase is not significant statistically) by 91.2% for young women. Further research is necessary to interpret the gender gap we detected.

Table 31 : Impact estimates of community policing in Bipemba on outcome indicators by gender for the youth group (18-25)

		Young men (N=534)	Young women (N=633)
H₀ Incidence of insecurity (DiD net change	-19.0**	-0.2
	DiD % change	-62.7	-0.8
H₁ Incidence of extreme insecurity	DiD net change	-6.0*	3.1
	DiD % change	-105.3	91.2
S Severity of insecurity (mean)	DiD net change	-0.11*	-0.04*
	DiD % change	-23.9	-9.1
G₀ Vulnerability to insecurity	DiD net change	-3.3	-3.8
	DiD % change	-20.1	-22.9
G₁ Target group	DiD net change	-7.8*	2.3
	DiD % change	-47.6	15.9

Significance: * significant at 5%; ** significant at 1%.

Source : Survey

Conclusion

Using a combination of impact evaluation methodologies, we found robust empirical evidence for a large positive impact of the introduction of community policing in Mbujimayi on security. Security improved in the pilot commune despite a context of rising violence and tension in the Kasai provinces. Security improved also in the control commune of Muya, suggesting a positive impact of the civilian oversight mechanism set up in both communes. Whether and how the governance layer of community policing improves security will be addressed in the parallel study we currently conduct in Lubumbashi and qualitative interviews in Mbujimayi.

Using a multidimensional index for measuring insecurity, we could show that four dimensions of insecurity were impacted by community policing. Access to police services and trust in the police have improved significantly, while the fear of crime and crime have dropped sometimes considerably as direct result of the community policing project. Levels of incivility, however, have not been affected by the project except for the disorders linked to aggressive youth gangs which dropped in the pilot commune of Bipemba significantly.

While community policing was found by this study to be highly efficient in reducing the fear of crime and in improving access and trust to police, we showed that only the latter two dimensions are critical to reduce the incidence of insecurity and the vulnerability to insecurity. Access and trust, so we observed in this evaluation, are the two major contributors to the incidence of insecurity. They weight more than any other dimensions on

insecurity and are the two main levers explaining why, when access and trust are low, residents cross the insecurity line. We can safely say that the community policing project in Bipemba was highly successful mainly because it improved the services of the police and police legitimacy in the eyes of residents and activated, by doing so, the two main levers of insecurity.

Although these short-term improvements observed are considerable, they remain fragile because the level of vulnerability to insecurity remains high. In the longer term, the gains are threatened by a relatively sizable group of vulnerable residents. As access and trust are also the key ingredients of vulnerability, any future progress in the stabilization of security and the consolidation of improvements must concentrate on these two dimensions. In other terms, improved services and police legitimacy will also be the key features of the long-term success of the project. Any weakening of one - or both - of these dimensions would quickly translate in a rapid increase of the incidence of insecurity. The study did not discuss the potential threats to community policing but clearly the fact that most police officers in Bipemba are still not on the payroll of the national police, and thus not paid, is a major threat to the gains obtained so far. The local neighborhood forums have partially and temporarily substituted to the national state to offer compensations to these officers who may, as in the city of Lubumbashi as we will observe in the parallel report, quit the police or return to practices contrary to community policing and known as “tracasseries” in DRC – meaning bother residents and use every opportunity to have them paying for fines that are pocketed by the police.

This finding is relevant for Mbujimayi and is consonant with observations that we made in other African countries. The lack of access to police – an institution that is often underequipped, understaffed and poorly paid - is one key dimension that needs to be addressed by assistance programs to police; at the same time, police (lack of) legitimacy is the other key ingredient of the high levels of the incidence of insecurity. Legitimacy is highly associated to community policing and its principles, including gratuity of services. Strengthening the service capacity of the police goes hand in hand with improving the trust of residents in their police. In Bipemba, the project was successful in both in the short-term. As seen, the image of the police improved by over 200% in the pilot commune while many services of the police improved greatly. Where services did not improve – like in burglary investigations -, satisfaction did not improve either and residents did not change their behavior by reporting to the police. This does not mean that they do not report, but they still prefer to report to neighborhood chiefs than to police in the city of Mbujimayi.

Not all benefited as much from community policing. The methodology we used allowed gaining insights on who benefited most from the introduction of community policing. The report found evidence of a gender bias in community policing as implemented in Mbujimayi. The impact estimates on all key outcome indicators are larger for men than for women. Women, in other words, benefited less from the introduction of community policing in

Bipemba. We also observed that the young women of the age group (18-25) enjoyed little benefits from the introduction of community policing. Overall, they did not benefit from the community policing project. Further analyses might be needed to understand how police authorities could address the current gender bias of the implementation of the community policing project. This may involve increasing the number of women police, addressing better sexual violence cases, and weight more on incivilities as women are more sensitive to incivilities than men according to our preliminary findings.