How forced displacement flows affect public good contributions: The social consequences of conflict in Colombia

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Abstract:

Low intensity armed conflict is usually related to population displacement, altering networks and social capital in affected regions. With an incentivized questionnaire performed in the Colombian coffee growing axis (Eje Cafetero), we observe contribution to an abstract and anonymous public good when contributions are not enforceable. Game contributions are significantly higher in regions with high net-changes of population due to displacement, both for regions with net in-flow and net out-flow, compared to a more stable area. We find that the effect is especially strong for women in net out-flow areas; usually the most affected if male family members are forcibly displaced. We further propose a local inspection mechanism, and show that it increases contributions in all areas independently of the displacement history of the location and the individuals preferences with respect to this mechanism.

Keywords: Colombia, conflict, displacement, public good contributions

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1 Introduction

> "Social Capital refers to the norms and networks that enable collective action. It encompasses institutions, relationships, and customs that shape the quality and quantity of a society's social interactions. Increasing evidence shows that social capital is critical for societies to prosper economically and for development to be sustainable. Social capital, when enhanced in a positive manner, can improve project effectiveness and sustainability by building the community's capacity to work together to address their common needs, fostering greater inclusion and cohesion, and increasing transparency and accountability."
>
> The World Bank[1]

The concept of social capital has received increasing attention from sociologists (e.g. Coleman, 1988), political scientists (e.g. Putnam, 2000) and economists (e.g. Glaeser et al., 2002) over the last decades. For the case of developing countries exposed to conflict, social capital is of especially high importance (Corbacho et al., 2014). Specifically while physical capital can easily be recuperated once a phase of conflict ends, damages to social capital might be much more persistent through time. Many opinions exist concerning what should be included in the definition of social capital, but it is generally agreed that it is related to the existence of 'social networks' and the inclination, based on these networks, to do things for each other. Hence, disruptions in social networks might crucially alter social capital. Identifying the nature of these alterations is crucial to design effective post-conflict policies and programs.

Colombia has been in a long-lasting low-intensity armed conflict for more than fifty years. This conflict has had an important impact on the population, especially in rural areas. The number of attacks and massacres perpetuated by the different fronts lead to the killing of 220,000 Colombians, 80 percent of which were civilians. As a consequence, the internal displacement flows of the population have been very important. Colombia is the country with the highest number of Internally Displaced Persons in the world, with a total of between 4.9 and 5.5 million.[2] The in-flows and out-flows of displaced individuals have dramatically altered the structure and composition of social networks, and hence the dynamics of social capital.

With an incentivized questionnaire performed in the Colombian 'Eje Cafetero', we observe contributions to an abstract and anonymous public good when contributions are not enforceable. The aim of this paper is to study how the displacement history in different locations is linked to such behaviors. We find that areas that have suffered greater network disruptions, either due to high in- or out-flows of population due to displacement, show on average significantly greater contributions than a stable area. Meanwhile all studied locations faced similar levels of conflict incidence. We specifically focus on women, that might have an especially strong need to be included in local networks and community based organizations when they head a household (Barr et al., 2015), and indeed observe for them greater contributions. We further propose a

[1] http://go.worldbank.org/C0QTRW4QF0

[2] Source: 'Enough Already!' by the Centro de la Memoria Historica (2013) retrieved at: www.centrodememoriahistorica.gov.co/en/reports

mechanism to improve our abstract measure of social capital, specifically with the availability of a sanctioning mechanism for misbehavior. We find that this mechanism is effective in all areas, and its effectiveness is independent of the individuals preferences towards with respect to this mechanism. In a country like Colombia, studying the determinants of social capital, and what can be done to improve it, can have important policy implications for the design of development programs.

The relationship between incidence of conflict and social capital, using different measurements ranging from experimental approaches to opinion surveys and questionnaires on political and social involvement, has garnered increasing academic interest. Among others, Bellows and Miguel (2006) study how individuals directly affected by the war in Sierra Leone are more likely to participate in social and political movements, and Voors et al. (2012) study how altruism towards a close community increases for individuals exposed to violence in Burundi. Studies in Colombia show how the social networks' composition and the reliance on social networks is linked to armed conflict and forced internal displacement (Kaplan and Nussio, 2012; Attanasio et al., 2008). Our contribution to this literature is twofold. First, we focus on displacement flows, differentiating between three types of regions: those with high net out-flows and those with high net in-flows of displaced persons, and compare them to a control region with low changes in population level. In all studied regions the conflict incidence indicators have been at a similarly high level. However due to their different geographical locations, certain of these regions are neighbouring relatively more or relatively less violent regions, respectively. We find that in regions where displacement has been strong (both net in- and net out-flows), participants report to contribute significantly more to an abstract public good played with partners from the same municipality. Second, we study the effectiveness of a inspection mechanism in improving social capital as measured by such public good contributions. In a setting where trust in institutions needs to be rebuild, preferences across different types of institutions might influence reactions to them. We compare the behavior of participants in the standard public good game with a public good game that introduces a inspection authority from the municipality. The introduction of a inspector leads to a significant increase in contributions to the public good and the effect of the inspector does not differ across regions. Finally, we elicited participants preferences between two inspectors: local (from the municipality) or external (from the nation's capital Bogota).[3] We observe that farmers in net out-flow areas are most likely to choose local inspectors. However, we do not find that preferences over inspectors significantly affect the reaction to local inspectors when local inspection was imposed.

A further unique characteristic of our dataset is that we have observations linked to participants personal exposure to displacement. We can thus characterize participants based on their personal history of displacement and their current location. We distinguish between individuals that have been displaced themselves and

[3]See Gneezy and Fessler (2012) for an alternative approach to punishment on pro-social activities using dictator games.

individuals experiencing a rupture of their network due to the displacement of family members. We observe that individuals left behind who live in areas with a considerable in-flow of displaced persons contribute significantly more in the abstract public good situation. The opposite is true for displaced individuals arriving to areas with an substantial out-flow of displaced persons. While these results do not allow us to draw any causal conclusions due to the possible self-selection into displacement, they enable us to characterize a crucial minority strongly affected by internal displacement.

The topic of this paper is closely related to the literature on the negative correlation of armed conflict and economic activity. Cassar et al. (2013) study persistent effects of conflict on a sample of individuals years after the Tajik civil war. They find that violence reinforces kinship-based norms of morality while decreasing trust within affected villages. Dube and Vargas (2013) showed how coffee price fluctuations have affected the capacity of armed groups to recruit fighters from coffee-producing areas. The conflict has had additional non-negligible consequences for the local infrastructure: for example, in the district of Caldas, several cooperatives have had their collection points vandalized or destroyed at one time or another, leading to important economic losses. Forced displacement and its consequences concerning incentives for long-term investments, property rights and participation in local institutions are important research questions. While a number of studies have investigated the effect of Colombia's armed conflict on economic activity (for example Rettberg, Leiteritz and Nasi, 2010), to the best of our knowledge very little research has been done on the effect of the armed conflict on small coffee farmers' social capital. Muñoz-Mora (2010) studies the effect of the armed conflict on coffee production. Riascos and Vargas (2011) study the relationship between violence and growth. Arias and Ibañez (2012) and Ibañez, Muñoz-Mora and Verwinp (2013) look at the effect of the presence of armed groups and illicit crops on small farmers' crop and investment choices, showing that instability biases farmers' choices towards shorter term crops and investments. We aim to contribute to the understanding of the relationship between economic institutions and social capital in a conflict setting by analyzing social capital in a rural coffee-growing district.

The rest of the paper is structured as follows: in section 2, we discuss the different approaches to measuring social capital. In section 3, we present the field setting, specifically the Caldas department in Colombia. Section 4 presents the incentivised questionnaire, describes the sample and presents the hypotheses to be tested. In section 5, we present the results for the abstract public good situation and discuss how socio-economic factors and the history of conflict are related to behavior. Section 6 discusses the effectiveness of the introduction of a local inspector on contributions. Section 7 presents some extensions on behavior by participants directly affected by displacement. Section 8 concludes.

2 Measuring social capital

Since there are multiple different definitions of social capital, measuring social capital is not an easy task. According to the guideline of the World Bank,[4] social capital can be linked to five key dimensions that can be separately measured: groups and networks, trust, collective action, social inclusion and information and communication. Frequently these dimensions are evaluated through questionnaires. For example, questions about trust are framed as: "Generally speaking, would you say that most people can be trusted, or that you can't be too careful in dealing with people?"; about collective action as: "Do you help out a local group as a volunteer?"; and about networks as: "If you suddenly needed a small amount of money, how many people beyond your immediate household could you turn to?". However, data collected through self-reports can easily be biased if participants believe that certain answers are expected from them or if they do not want to reveal their true beliefs. Furthermore, answers on subjective grading scales might be difficult to compare across participants.

Self-reports can sometimes be validated by crossing them with reports from local organizations concerning volunteers or by observing actual borrowing and lending between group members. However, data concerning such actions is not always easily obtainable and is subject to significant noise. An interesting alternative is therefore to elicit behavior in controlled experimental conditions. If such behavior is reliably correlated with different dimensions of social capital, it can provide more reliable information than self-reports and more precise information than actual economic actions.

One dimension of social capital, namely collective action, can be linked to behavior in public good games.[5] A large volume of literature exists on laboratory public good games (for reviews, see Ledyard, 1995, and Chaudhuri, 2011). Recent studies have further investigated the external validity of behavior in such games. Fehr and Leibbrandt (2011) present a laboratory experiment with fishermen in Brazil that links the individual's behavior in a laboratory public good game with characteristics of the individual's nets used for fishing. Larger holes allow small animals to escape and thus the size of holes in nets provides information about the extraction level of these fishermen concerning the common pool resource they share. Indeed, the paper shows that behavior outside the laboratory can be linked to behavior in the laboratory game. In a similar vein, Rustagi, Engel and Kosfeld (2010) link Ethiopian forest managing groups' outcomes to the members' behavior in a laboratory public good game. Their results show that the proportion of conditional cooperators as identified through the laboratory experiment, can predict outcomes of the forest management group.

[4] Source: www.go.worldbank.org/TC9QT67HG0

[5] An experimental paradigm often used to measure another dimension of social capital is the trust game (e.g. Berg et al., 1995). Behavior in this game can be linked to behavior in real-life decision situations, for example, the likelihood to default on loans (Karlan, 2005) or reciprocity in vote buying (Finan and Schechter, 2012). However, behavior in the trust game can also be linked to risk preferences (Eckel and Wilson, 2004) and has been more generally linked to betrayal aversion (Bohnet and Zeckhauser, 2004).

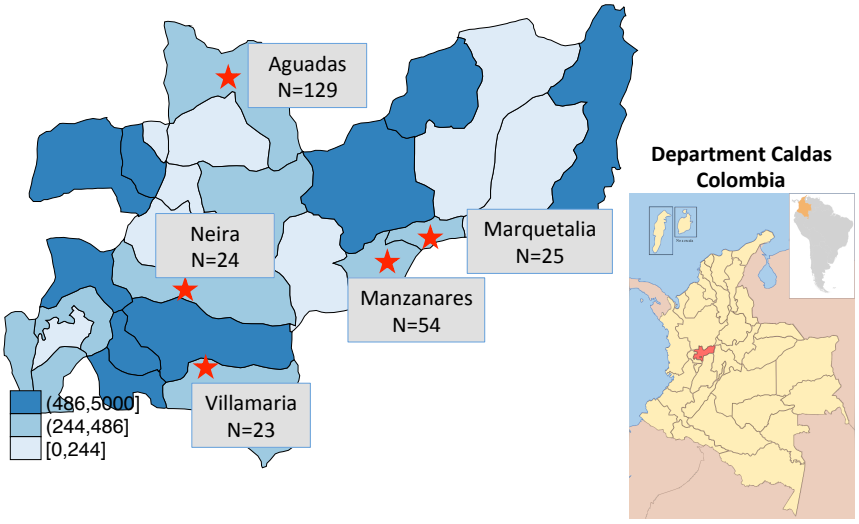

Figure 1: Department of Caldas and selected study locations. Blue shading indicates average homicide levels over last 10 years in the departments municipalities.

Hopfensitz and Miquel-Florensa (2012), in an study involving farmers from Costa Rica, linked laboratory free riding to free riding on cooperative rules by selling good-quality coffee outside the cooperative at higher prices.

3 Field setting: socio-economic and institutional situation of the Caldas district

The study was performed in different municipalities in the district of Caldas in the summer of 2012. The district of Caldas is at the center of the Colombian 'Eje Cafetero', a traditional coffee growing area. The Caldas department has 38.758 coffee farmers, with 87.127 ha of planted coffee. Coffee represents 59% of the Caldas agricultural gross domestic product (GDP).[6]

Violence has been high in all regions with some local variations in aggressors. The western part of the Caldas department had seen a significant presence of FARC (Fuerzas Armadas Revolucionarias de Colombia)[7] forces with progression of the AUC (Autodefensas Unidas de Colombia)[8], which left indigenous communities as special victims of the conflict. The eastern region was mainly AUC dominated with the progression of guerrillas. Table I and Figure 1 present measures of the intensity of conflict in the different municipalities.[9]

[6]Source: statistical reports by the Comite Departamental de Caldas (year 2013).
[7]Revolutionary Armed Forces of Colombia.
[8]United Self-Defence Forces of Colombia.
[9]See Restrepo, Spagat and Vargas (2004) for a description of the different data sources on the Colombian conflict.

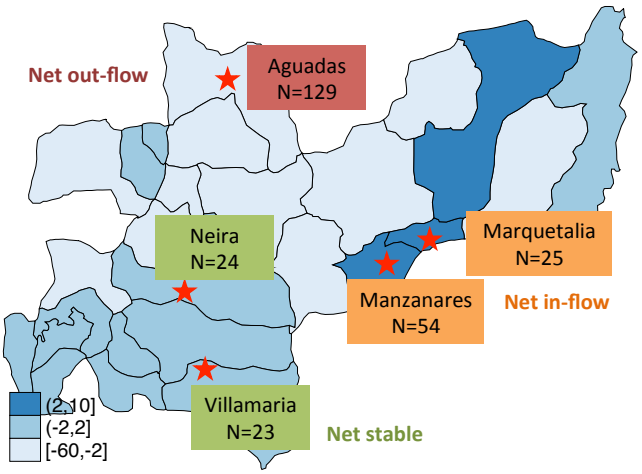

Figure 2: Department of Caldas and selected study locations. Blue shading indicates net population changes (IPD - IID) in the departments municipalities. Positive numbers (dark blue shades) represent net in-flow areas. Negative numbers (light blue shades) represent net out-flow areas.

We can see that violence has affected all municipalities. Average homicide rates over the last 10 years vary from 36 to 4842 (per 100.000 inhabitants) across the 27 municipalities of the department. Note that average homicide rates for whole Colombia have been over the same period at 39 (per 100.000 inhabitants).

As presented by Dube and Vargas (2013), the break of the Pacto Cafetero in 1989 and the consequent decrease in coffee prices increased the recruitment by armed groups and the presence of illicit crops in the region.[10] The situation, as described in Palacio and Cifuentes (2005), increased the displacement indexes starting in the beginning of the 1990s. As can be seen in Table II, the northern and more eastern parts of the department have suffered net out-flows of population, the western parts of the department have been net recipients, and the central area, the capital Manizales and the nearby towns, have had very small changes concerning the net balance of the population size.

According to the United Nations Office for the Coordination of Humanitarian Affairs (OCHA Colombia), the production of illicit crops in the department of Caldas is limited to the most eastern part of the district, and no production is reported in any of the municipalities in our sample. However, the fact that the municipalities of Manzanares and Marquetalia, that are close to the production zone identified by OCHA, have a high net in-flow of displaced population, may be due to population flows coming from towns where illicit crops are present.

The municipalities selected for the study sessions are in the northern part of the department (Aguadas), the central-northern part (Neira), central-south (Villamaria) and the eastern part (Manzanares and Marquetalia).

[10]See 'Los Derechos Humanos en el Departamento de Caldas' (2003) for detailed information on the impact of the armed conflict on infrastructure and different vulnerable groups in the department.

All selected municipalities show average homicide rates over the last 10 years in a range from 249 to 460, and are thus in an intermediate range relative to other municipalities of the department. Concerning population flows we observe some variance across the selected municipalities. As can be seen in Table II and Figure 2, Aguadas shows a high levels of net out-flow of population, Villamaria and Neira have very small net changes and Manzanares and Marquetalia are net recipients of population flows. Note that both Net In-Flow and Net Out-Flow areas have experienced a non-negligible outflow of inhabitants due to the conflict (Aguadas: IID2009=5.7; Manzanares: IID2009=4.6 and Marquetalia: IID2009=13.1), placing them in the top 40% concerning this variable in the department. The net in-flow areas, have however experienced an in-flow of population about double their population out-flow. The net out-flow area in contrast shows in-flows only about half the size as observed out-flows.

We were not able to obtain detailed historic data on the different migration waves, but interviews at the visited locations stressed that the displaced were mainly male farmers moving to a nearby coffee growing location to avoid conflict and the pressure to switch to farming illicit crops. The problem of left behind family members was highlighted during the same set of interviews. The families left behind, are mostly headed by women, which continue coffee farming on the families plots. Due to lower experience and skill level of women in coffee farming, the left behind women were actively searching for help and advice from neighbours and the cooperative. Consequently, it was pointed out that sub-locations that had faced an substantial out-flow of the population, were the most involved in the coffee cooperative and other community associations.

In all of the visited municipalities coffee production is based on small-scale farmers (owning less than 0.5 hectare of land). We aimed at selecting municipalities with similar structures concerning land property (small farmers) and the institutional setting of the coffee market (members of the two biggest cooperatives in the region).[11] Other locations in the Department (e.g. Manizales), are characterized by larger farms, and were thus not included in the study. Farmers of the western part of the district (i.e. west of the Cauca River), predominantly belong to a smaller indigenous coffee producers association and were also not included in the sample due to special social norms prevailing in indigenous populations.

In all of the municipalities, the role of the Federacion Nacional de Cafeteros de Colombia (FNC) has been relevant with regards to the provision of public goods beyond investment related to coffee farming. This role has been especially important in the provision of social public goods. For example, it is almost impossible to find a school in any of the veredas (municipality sub-locations) that did not receive significant support from the Fondo Nacional del Café to finance building and furniture.

[11] Participants in Neira, Villamaria, Manzanares and Marquelalia are members of the Cooperativa de Manizales. This cooperative (the biggest in the region) spans to municipalities on both sides of the cordillera. Farmers in Aguadas are members of the Cooperativa de Caficultores de Aguadas.

4 The choice situations and questionnaire

4.1 The incentivized questionnaire on public good behavior

Participants were presented with an incentivized questionnaire to elicit behavior in a public good type choice situation. The questionnaire format was used due to logistic constraints, not allowing for a proper experimental setup. Recent research has indeed confirmed that answers to hypothetical experimental scenarios are the best predictors of actual game behavior (Falk et al., 2015). Since answers to our incentivized questionnaire were not purely hypothetical but earnings were based on own choices, we expect answers to be even further correlated with true game behavior.

The study had two parts, as shown in Figure 3. In the first part, no inspection mechanism was available, which was later introduced at the beginning of the second part. The first part consisted of a choice task concerning investment in an abstract public good. Participants made their individual decisions and were informed that their earnings from total public good production would be determined by their own choices and the choices of three other players who participated in the game.[12]

The abstract public good situation was presented with the usual instructions in public good experiments. Each participant received an initial endowment of 10 monetary units and had to decide how many of these to transfer to a group envelope ($x_i \in \{0,10\}$). Each unit transferred to the group envelope was multiplied by 1.5 by the experimenters and the individual received one-fourth of the total in this group envelope. The individual would therefore receive a payoff of: $\pi_i = (10 - x_i) + 1.5/4 * (\sum x_j)$.

The situation was presented in neutral and abstract terms. Each farmer received two envelopes: one labeled 'personal envelope' with ten monetary units (wooden ice-cream sticks) and one empty envelope labeled 'group envelope'. Each participant had to decide how many monetary units to transfer from one envelope to the other. No feedback about decisions and earnings was given until the end of the session.

After the initial game, we introduced a inspection mechanism. The inspection mechanism was framed as costly to stress its significance. The cost consisted of a one-point deduction from final earnings to 'pay the inspector'. This fixed cost could not be avoided and did not alter the budget available for contributions to the public good. The inspection mechanism was not further specified but participants knew that it would lead to fines for participants with the lowest contribution towards their group and that the mechanism needed to be 'activated' by an inspector. The inspector had neither benefits nor costs associated with the activation. It was made especially clear that the collected fines would go back to the organizers of the experiment and not to the inspector. The inspection was thus not automatic but depended on the inspectors' willingness to activate the mechanism. It was also made clear that no one would 'control' what the inspector did. Expected

[12] Choices were based on randomly selected strategies from the same municipality.

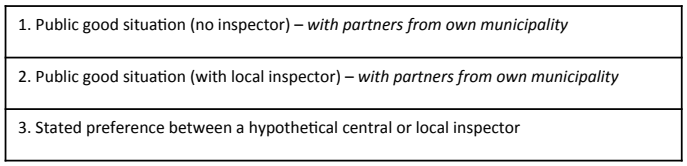

Figure 3: Order of events in experimental session.

individual payoffs given this inspection mechanism would therefore depend on the subjects' beliefs when an inspection would be performed. Specifically, the expected payoff of the lowest contributor of the group would be: $\pi_i - c * P(\text{inspection performed})$, where c indicates the fine to be payed, and $P()$ the probability that an inspection is performed. If the individual beliefs that the probability of inspection is equal to zero, payoffs would be the same as in the case without inspections. Behavior would therefore remain unchanged regardless of the presence of an inspector. If, however, a participant is certain that the inspection will be performed, the mechanism would yield a situation equivalent to perfect monitoring. In this case own payoff-maximizing individuals would have to use some sort of level-k reasoning to determine their actions. I.e. dependent on how much they believe other participants will contribute to the public good, they will aim at contributing an $\epsilon > 0$ larger amount compared to the lowest contribution (e.g. Stahl and Wilson, 1994; Nagel, 1995).

Participants were informed that the person selected to activate the inspection was someone from their own municipality (local inspector). Contribution decisions in this game thus enable us to measure the effectiveness of a local inspection institution on enforcing contributions in a public good type situation. Behavior of local inspectors was based on choices by randomly selected local participants who answered the question: If you were the inspector, would you inspect? [13]

Since real-life inspection mechanisms are often not local, we further elicited relative preferences between the above presented inspection mechanism and a central inspection mechanism. While in the local inspection scenario the inspector came from the same municipality, under the hypothetical central inspection case the inspector was presented as a representative of the FNC from Bogota. Participants were asked which type of inspection they preferred (local or central) after all public good games were played and before any feedback was given about the outcomes of these games.

4.2 Methods and summary statistics

The experimental sessions were performed in different municipalities in the district of Caldas in the summer of 2012. The selected municipalities are divided into an urban part and several sub-locations called veredas.

[13] An individuals answer to this question was never used concerning the same individuals contribution decision.

The commercial services of the municipality are at the urban area, while farmers live at the sub-locations. At each sub-locations live on average 40 farming families, which share some communal services as water and the management of the local school. Sub-locations are on average around one hour away from the urban center of the municipality, and the habitants usually can only reach the urban center by the daily bus service. While it is not possible due to the sensitivity of the information to obtain detailed data on the in- and out-flows of displacement on each of these sub-locations, it is reported that generally displacement has mainly affected farmers in these remote areas. Also they have been the usual receivers for in-flow given that displaced individuals are mainly farmers.

The study was performed with the logistic support of CRECE, the research center of the National Coffee Federation in Manizales, the district capital, and the Cooperatives of Aguadas and Manizales. In each of the municipalities several sub-locations were randomly selected and the sessions where performed in the primary schools of the sub-locations.[14] Invitations to the sessions where send by the extension officers of the cooperative, inviting one participant per household. Turnout based on invitations averaged 95% in the chosen locations. Given the extremely high response rate and the size of the sub-locations, concerns on sample selection at the local level are minimal. Given the distance between sub-locations and the low mobility of farmers, the possibility of sample contamination between the different sessions was minimal. Sessions were run in the afternoons to be able to use the local school premises, and lasted approximately for 1h30 for the experiments and post- experimental questionnaires. Average earnings from study participation represented approximately a half-day's labor salary of an agricultural worker. We conducted nine distinct experimental sessions in eight locations. The study had two distinct parts: a series of public good type decision situations, analyzed in this paper, and a sequence of trust game situations presented in Hopfensitz and Miquel-Florensa (2014).

Participants made individual decisions with respect to three hypothetical players whose strategies were based on choices made by others. This gives us 260 independent observations concerning contributions to the public good. Overall, each participant made decisions with respect to two different incentivized public good choice tasks (see Figure 3). In an in-subjects design we can therefore compare behavior with and without the existence of the inspection mechanism. No feedback was given between the tasks. Each situation was orally explained and questions were asked to participants to ensure their understanding. Due to low literacy rates, no written instructions were handed out and all participants were assured that there was no right or wrong decision in the game. After the experimental part, participants responded to a personal questionnaire with respect to various personal, economic and household variables.

[14] An exception had to be made in the municipality of Manzanares due to safety concerns, and the farmers of the sub-location were invited to go to the municipal center for the study which was scheduled just after a meeting of the local farmers assembly.

A total of 260 farmers participated in the study; 39% of them were women, with an average age of 51 years (std. dev. 13.4). In Table III(a) we present summary statistics for our total sample of participants. Average earnings from the experiment were equivalent to about 10.000 COL pesos (about $5.25 US). Table III(b) presents summary statistics for some key variables at the municipal level. We see some differences across the included municipalities, especially concerning the share of the population not born in the municipality and the impact of displacement. We will explore this variation to explain contributions in the public good task.

4.3 Hypotheses

We aim at investigating three questions with our experimental data. Specifically: (1) whether contributions to the public good (i.e. social capital) are altered in areas with high net in- or out-flows of displaced individuals; (2) whether the gender imbalance related to displacement is influencing contributions to the public good and (3) whether an imposed inspection institution can improve contributions.

Concerning the first point, we hypothesize that in addition to exposure to violence as such, the additional strain on the population due to the internal displacement will influence the willingness to contribute to public goods in the local community. Along with earlier results that have observed that exposure to conflict increases an individuals altruism and investment towards the local community (Voors et al, 2012; Bellows and Miguel, 2006), our first hypothesis is:

> Hypothesis 1: Both net in-flows and net out-flows of population in an area will increase the willingness to contribute to public goods.

In relation to the second point we expect that the effect will depend on the individuals position in each area. Net in-flow areas face the problem of absorbing newcomers, that have to be integrated, in the community. As for the case of other types of stress events in an area, this will influence the whole population. Net out-flow areas predominantly face the problem of a loss of its members moving to other areas. The loss of a displaced person will particularly pose a problem for individuals dependent or relying on the displaced person. We therefore expect that the effect will be mainly visible for those that face a higher risk of being left behind. Since a large proportion of displaced are men (in our sample 89%; see Table A:1) we hypothesize that women will be more affected by the displacement flows in areas showing a high net out-flow. Specifically:

> Hypothesis 2: Women will show a stronger effect concerning public good contributions than men in net out-flow areas. We expect no gender differences in net in-flow areas.

In relation to the last of the three points, we will further investigate the preferences for a inspection mechanism and its effectiveness. Building new institutions will be important in all areas exposed to high

displacement flows. However we hypothesize that preferences for the type of inspector will depend on community specific problems. We expect that areas with a high net in-flow of displaced will be relatively more likely to fear influence by the newcomers on local decisions. Meanwhile, areas with high net out-flow of individuals will have an increased concern for the local network. Specifically:

> Hypothesis 3: When facing the choice between a local inspector or a nation wide (thus external) inspection, participants from net in-flow areas will prefer a non-local mechanism, while participants from net out-flow areas will choose a local mechanism.

Finally the effectiveness of an imposed inspection mechanism might depend on these preferences. An imposed inspection mechanism might thus be more efficient for those who also have a preference for and belief in the mechanism. We hypothesize that:

> Hypothesis 4: Individual preferences for the local inspection mechanism will increase contributions when this mechanism is in place.

We will now turn to the analysis of the experimental results. First, when no inspection mechanism was available and second when the inspection mechanism was imposed.

5 Public good contributions: no inspections

5.1 Abstract contribution to public good

We start by analyzing the determinants of behavior in the public good situation with no inspections. Overall contributions to the public good game were 5.76 points out of 10 (std. dev. 2.63). From Figure 4 we see that, on average, participants contributed 6.02 and 6.06 points in the areas that were net-receivers and net-exporters of displaced populations, respectively. This is significantly more than contributions in the central stable region (Wilcoxon test[15]; p=0.029 and p=0.0003, respectively). This result is in line with hypothesis 1. Contributions by net in-flow and out-flow areas are not significantly different (p=0.781).

We further observe that different parts of the population react differently to disruptions of the social network (see regressions in Table IV). Women in net out-flow areas make significantly larger contributions than men in their area and than women in other areas (Table IV: (3) and (4)). This result is in line with hypothesis 2. High intensity of displacement in a region especially threatens women, who are more likely to be left behind. In response, women will build new links with other community members. Our results confirm this effect for an anonymous interaction.

[15] All tests, unless otherwise specified, are Wilcoxon rank-sum tests; p values are two-sided.

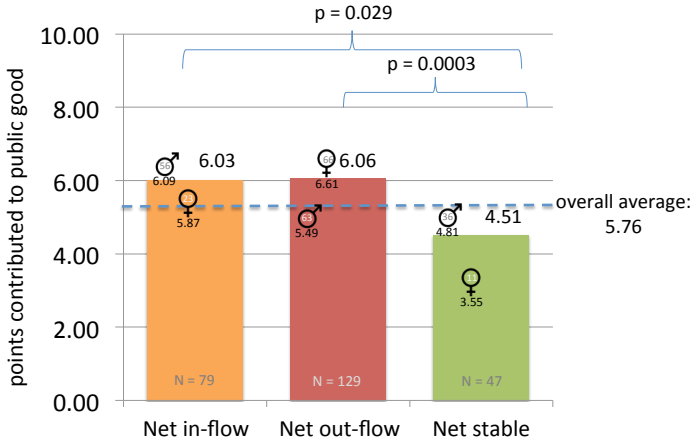

Figure 4: Contribution to Public Good (no inspections)

5.2 Controlling for conflict indicators

Displacement is obviously linked to violence and conflict. To get a better understanding of the results presented above, we thus have to take into account the relationship between net in-flow and out-flow areas and their level of violence. As discussed in section 3 (see also Table II), homicide rates and other conflict indicators are not very different for the areas with net in-flow and net out-flow. This is because the areas receiving a net in-flow in our sample are far from what could be considered safe areas. Both net in-flow municipalities are located at the eastern side of the cordillera, south of coca producing areas that are portrayed by even higher levels of violence and are exposed to an even higher degree of conflict (OCHA Colombia). While one of them presents higher homicide rates (Manzanares), the other is at the low end of that indicator (Marquetalia). In comparison the net out-flow areas are worse than their neighboring municipalities, but not worse than the high conflict area in the net in-flow area. While overall public good contributions are not different when we compare net in-flow and net out-flow areas, we might anticipate some significant differences across areas exposed to more or less violence.

Since our main concern is with conflict that has been ongoing over the last years, we use the average homicide rate over the last 10 years (see Table II) to identify areas that had a relatively high or low exposure to violence for the municipalities with high displacement flows. Indeed we observe slightly higher contributions to the experimental public good in a high conflict, net in-flow area (Manzanares) compared to a low conflict, net in-flow municipality (Marquetalia): 6.07 versus 5.92. However this difference is not significant (p=0.79).

6 Increasing social capital: a local inspection mechanism

A large literature in experimental economics has investigated the effects of central taxation of free riders (e.g. Falkinger et al., 2000) and decentralized punishment (e.g. Fehr and Gaechter, 2000). Both mechanisms are generally effective in increasing contributions to the public good. Note that our inspection mechanism differs from these. Unlike central taxation, we introduce uncertainty in the effectiveness of the inspection mechanism. Participants are not certain that free riders will actually be punished, with the outcome depending on the actions of another participant and not on an independent random mechanism. Differences in reactions to a local inspector compared to the first public good decision will thus provide information regarding the belief in the effectiveness of this institution. Unlike decentralized punishment institutions, our inspection does not represent a higher level of public good, since inspecting has no obvious costs for the inspector.

Participants repeat the first game played, with the difference that a local inspector is introduced. Figure 5 shows how behavior changes versus the first game. On average, contributions increase by 0.790 points (p=0.0009). Note that since the game with the coordinator was always played second, possible order effects would rather underestimate the effect of the coordination device since repetition typically reduces contributions in public good situations (e.g. Fehr and Gaechter, 2000).

Since all participants played both games, we can study how the effect of the treatment (introduction of a inspector) varies across different regions and across individual characteristics. Moreover, we can see how individual and location characteristics interact with regard to contribution in both treatments. Hence, we proceed by estimating

$$y_{irt} = \beta * Treatment + \alpha_1 * Treatment * X_i + \alpha_2 * Treatment * X_r + \gamma_1 X_i * X_r + \gamma_2 X_i + \gamma_3 X_r + \varepsilon_{irt} \quad (1)$$

Where y_{irt} is the contribution of individual i in region r under each of the treatments t (No inspector and inspector), X_i represents individual characteristics, and X_r represents regional characteristics.

In Columns (1) and (2) of Table V we see that the treatment does significantly increase contributions by approximately 0.8 points on average (see also Figure 5). We further examine the effects of the area's displacement history. As we observed in the previous section for the game without inspector, we see that areas with net in-flow and net out-flow of displacement show greater public good contributions (Table V columns (3), (4)); however, the effect of the inspection mechanism does not differ significantly across areas (Table V columns (5), (6)).

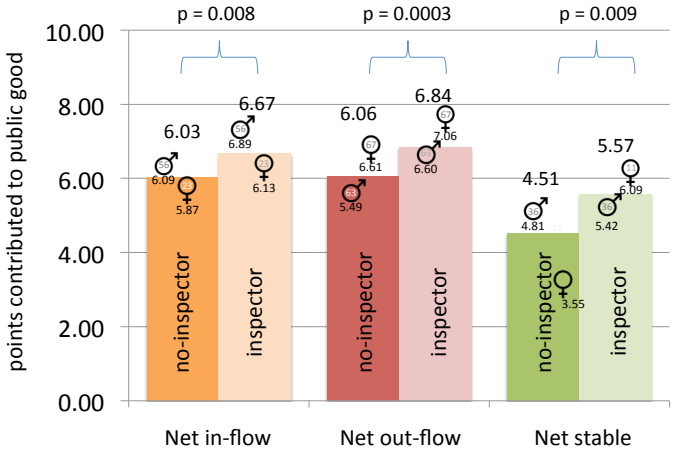

Figure 5: Comparing contributions to public good with and without inspection mechanism.

It needs to be stressed again that our aim has been to compare areas with high net in- or out-flow of individuals. However these net changes are not necessarily correlated with the absolute in-flow or out-flow in a region. For example remember that the municipality with the highest net in-flow in our sample (Marquetalia), is also characterized by the highest absolute out-flow (see Table I). We thus separately analyze the impact of in-flow and out-flow by using raw indexes for in-flow (IIPD: Index of Pressure of Displacement) and out-flow (IID: Index of Intensity of Displacement) instead of the categorization based on net changes. We see that the absolute in-flow decreases contributions while the out-flow leads to increased contributions. The interaction of these indicators with treatment is insignificant (Table A:2).

While we observe no regional differences concerning reaction to the imposed local inspector, we hypothesize local differences in preference for this type of inspection. As discussed earlier, we proposed two (hypothetical) inspectors to participants: a farmer from the municipality or an external inspector from the National Coffee Federation headquarters in Bogota. Participants generally had real-life experiences related to both types of inspectors: for example, through involvement in community associations managed by a local leader and the local and regional committees of the National Coffee Federation (note that all participating farmers in our study are members of the FNC).

Figure 6 presents results concerning preference for inspection. We find that regions with a net out-flow of population show the strongest preferences for municipal inspectors (i.e. 62.31%). Preferences are lower in the net stable area (48.94%) and significantly lower in the regions characterized by a net in-flow (45.57%, p=0.018). This is in line with hypothesis 3.

We finally investigate the relationship between preferences and reactions to the local inspection mechanism. Stated preferences for the local inspection are higher in regions with net out-flows, but reactions to this

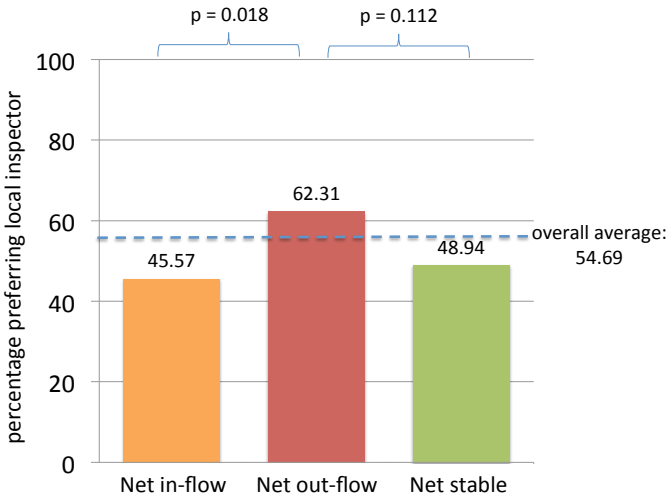

Figure 6: Preference for local inspector

inspector are the same as in high in-flow areas. Indeed, we observe that preferences for the local inspector do not influence the effectiveness of the introduction of the local inspector (Table VII, columns (2) to (4)). Thus, when a local inspector is imposed, reactions are independent of farmers' preferences concerning the type of inspection. This results is thus contradicting our hypothesis 4. However the strength of preferences might play a role here. Unfortunately the strength of preferences was not elicited during the study.

7 Extension: the impact of personal displacement history

While the analysis of the previous section mainly focused on area differences concerning displacement, we might further wonder whether individual effects concerning displacement history can be observed. While the comparison across areas allowed us to identify regions that were relatively similar concerning exposure to conflict and economic variables, individuals with a personal exposure to displacement can obviously not be considered as random representatives of the population. Displaced individuals might be different in many respects, for example by having characteristics that made them more vulnerable to being attacked in the first place. In addition those actually leaving might be characterized by factors making them more mobile or more willing to take the risk of displacement. Our sample enables us to investigate the characteristics of those displaced or otherwise exposed to displacement and how they behave in an anonymous public good dilemma.

A number of participants were themselves displaced, others had members of their family displaced and are thus left behind. We present in Table A:1 the characteristics of participants directly affected by displacement,

either as being personally displaced (N=9) or being left-behind after the displacement of a first-degree family member (N=25). Given the overall percentage of women in our sample (39.6%), women are overrepresented among left behind individuals (48%). The opposite is true for displaced individuals, that are by majority male (8 out of 9, i.e. 89%). Both groups consider violence to be an important problem at their location: it is highlighted as an important problem by 17.4% and 11.1% of the left behind and displaced individuals respectively (versus 5.9% in the overall sample).

An important question in this setting, together with the differential contributions across regions, is whether the personal displacement history has any effect on public good contributions and on the effectiveness of the proposed mechanism to increase these contributions. Being left behind or displaces has a such no significant impact on public good contributions (Table A:3 (1)). However we find that participants with displaced family members contribute significantly more when they are in net in-flow areas (see Table A:3 for interactions between personal history and location history). In contrast incoming displaced persons arriving in net out-flow areas contribute significantly less.[16] Thus specifically in the regions with high net in-flow, those left behind from displacement are generally higher contributors to the public good (7.4 points versus 5.82, p=0.04). This sub-group is in a complex situation, left behind by their own family but in a community with a significant in-flow of newcomers. Their increase in pro-social behavior might be caused either by their own vulnerability or by increased empathy for the newcomers.

8 Conclusions

With an incentivized questionnaire performed in the Colombian 'Eje Cafetero', we observe contribution to an abstract and anonymous public good when contributions are not enforceable. We study how the displacement history in different locations is linked to such behaviors: we find that areas with net in-flow and net out-flows of population due to displacement have significantly higher contributions than an area with stable population. We further propose a mechanism to improve our abstract measure of social capital, specifically with the availability of a sanctioning mechanism for misbehavior. We find that this mechanism is very effective, increasing contributions by around 8 % of the endowment. We also find that the effectiveness of this mechanism does not vary across regions or across individuals with different preferences with respect to this mechanism. At the individual level, we specifically focus on women, that might have an especially strong need to be included in local networks and community based organizations when they head a household (Barr et al., 2015).

Our contribution is twofold. First, the setting allow us to compare three areas with very similar levels of

[16] See Ibañez and Moya (2010) and Moya (2013), among others, for studies on the behavior of displaced individuals in Colombia.

incidence of conflict, but very different population displacement flows. This allows us to study the effect of network disruptments, due to displacement, independent from the well known effects of conflict on behavior. Second, the fact of having information on the individual and location history with respect to displacement, allows us to investigate their interaction. We find that displaced individuals in areas of net out-flow, and left-behing families in areas of net in-flow show relatively smaller contributions and have a greater preference for a national inspection mechanism. This result might help to understand behavior and preferences of these two small and vulnerable groups.

With respect to effective policy design, we point out the robust positive impact on contributions, through introduction of a local inspector. This confirms that local community associations, controlled by members of the community, may be an effective instrument to improve and maintain social capital.

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Table I : Intensity of armed conflict

	Aguadas	Neira	Villamaría	Manzanares	Marquetalia	Dept. Caldas
Homicides rate 2011	39.23	33.80	26.87	33.35	26.77	
Homicides rate 2012	30.80	30.17	24.47	8.40	6.69	
Average Homicide rate last 12 years (2001-2012)	**49.30**	**59.91**	**35.58**	**58.91**	**39.74**	
Total masacres (1996-2012)	0	2	0	0	1	25
Forced displacement of persons 2012	17	5	10	14	18	340
Forced displacement (agregate 1984 - 2012)	1915	910	458	1473	4303	77077
Forced displacement (agregate 2001 - 2012)	1836	880	439	1424	4241	73550
Forced displacement (agregate 2008 - 2012)	298	137	101	199	231	6016
Actions from armed groups (agregate 1998-2011)	5	0	0	9	1	175
Petitions for 'Restitucion de Tierras'	12	1	3	4	4	288
Hectars claimed on the 'Restitucion' claims	351.52	0.59	10.30	5.01	34.01	12314.68
Incidence by armed groups:						
Guerrilla attacks	8	1	1	5	1	
Paramilitary groups attacks	2	6	1	108	2	
Guerrilla members killed	17	2	18	36	24	
Paramilitary group members killed	2	0	0	0	0	
Civilians killed	7	8	1	1	1	

Souce: Verdad Abierta Website (retreived 8 june 2013). Incidence by Armed group from CERAC.

Table II : Characteristics by municipalities

	Aguadas	Neira	Villamaría	Manzanares	Marquetalia	Dept. Caldas
Population (2009)	23383	29130	50123	24355	14880	976438
Index Pressure of Displacement: IPD (in-flow)	2	0.5	1.3	9.5	22.7	4.2
Index Intensity of Displacement: IID (out-flow)	5.7	2.3	0.6	4.6	13.1	6.2
Balance: IPD-IID	**-3.8**	**-1.9**	**0.7**	**4.9**	**9.6**	**-2**
Analfabetization (population 15 years and more)	12.4%	13.8%	7%	12.3%	12.5%	7.2%
Population Level 1 SISBEN (poverty level) (2009)	27.7%	20.2%	34.4%	40.8%	63.4%	33.4%
Population with Unsatisfied Basic Needs (2009)	23.0%	22.6%	12.5%	28.1%	26.9%	17.8%
Share of tax collection in Municipal Gov. revenues (2009)	9.1%	15.6%	31.7%	7.7%	7.6%	
Indicator of Municipal Fiscal Efficiency (2009)	57.44	60.43	64.12	57.81	63.06	
Public services coverage (2005)						
- Sewerage: Main urban area	98.3%	98.9%	97.9%	92%	94.8%	
- Sewerage: Rural part	34.4%	58.6%	73.5%	18.4%	4.1%	
- No energy, sewerage or water (rural)	3.6%	2.5%	2.2%	2.4%	3.8%	

Source: Carta Estadistica 2010-2011 Departamento de Caldas. Gobernacion de Caldas.
Indexes of Intensity and Pressure of Displacement: Number of persons affected over total population.

Table III: Summary statistics of (A) all participants (260 observations); (B) key varables by region

A:

1. Demographic information	Mean	*Std. Dev.*
Age	51,5	13,44
Woman	40%	0,49
Number of persons that share same home	3,83	1,96
Number of siblings	6,6	3,59
Number of children	3,21	2,39
Born in the municipality	73,90%	0,44
If not born, years in the municipio	24,9	16,28
Always lived in this municipio	75%	0,43
Someone in the family was displaced due to violence	9,61%	0,29
Displaced person (forced displacement)	3,46%	0,18
Education level:		
no education	4,24%	0,2
from 1 to 5 years of primary education	67,95%	0,46
from 6 years primary to 3 years of high school	1,54%	0,12
from 6 to 9 years of high school (bachiller)	23,93%	0,42
superior education	1,54%	0,12
2. Community Involvement		
Participation in community association	40,32%	0,49
Identification of the two most important social problems in the community:		
Problems of violence	5,85%	0,23
Low returns from coffee	63,28%	0,48
Bad financial management at the municipality	25%	0,43
Bad financial management at the Community level	10,15%	0,3

3. Coffee Market: Land property and production	Mean	*Std. Dev.*
Area of the farm (in Hectareas)	4,05	*4,32*
Production in 2011 (in arrobas)	160,88	*249,74*
Coffee is only source of income of the household	71,10%	*0,45*
Share of income from coffee	73,28%	*25,26*
Farms other crops apart from coffee	17,69%	*0,38*
Renewal of the coffee plants in the last 2 years	89,19%	*0,31*
Renewal with financial aid from FNC	*61,92%*	*0,48*
Renewal with financial aid from the cooperative	*18,84%*	*0,39*
4. Coffee Market: Cooperative		
Attended training courses out of the cooperative	42,86%	*0,49*
Share of production in 2011 sold to the cooperative	91,65%	*22,52*
Received an inspection at the coffee farm	66,93%	*0,47*
Years in the cooperative	13,45	*11,91*
Reason to join the cooperative		
Coop for economic help	50%	*0,53*
Coop for family reasons	20,86%	*0,41*
Coop for help with imputs	46,45%	*0,49*
Coop for social beenfits e.g. education programs)	50%	*0,50*
Coop for better price	65%	*0,47*
Coop since only alternative in area to sell coffee	13,38%	*0,34*
Had an elected post at the cooperative board	7,82%	*0,26*
Never goes to cooperative meetings	11,15%	*0,31*
Always votes on cooperative elections	83,84%	*0,36*
Always votes on FNC elections	81,53%	*0,38*

B:	All	Aguadas	Neira	Villamaria	Marquetalia	Manzanares
Number of participants	260	132	24	24	25	55
Not born in the municipality	26%	9,8%	46%	67%	48%	29%
Always lived in the municipality	75%	90%	54%	42%	60%	69%
Family member displaced for violence	10%	10%	4%	4%	20%	9%
Area of land (in hectar)	4,05	3,11	7,72	4,69	3,65	4,55
Production in 2011 (in arrobas)	160,88	143,75	144,85	206,32	76,90	243,30
Time at the cooperative (years)	13,45	15,22	9,22	7,18	11,61	14,41
Joined Coop for social help	50%	51%	42%	63%	52%	47%
Joined Coop for price	65%	66%	63%	75%	56%	65%
Joined Coop since only alternative	13%	17%	9%	13%	4%	11%
Participates in Community Association	40%	43%	42%	46%	44%	30%

Table IV : Contribution to abstract public good when no control is available

Dependent variable: Points out of 10 contributed to the group envelope (no control)

	(1).	(2).	(3).	(4).
Net out-flow area	2.512***	2.344***	1 371	1 401
	(0.732)	(0.799)	(0.917)	(0.953)
Net in-flow area	1.595**	1.212*	1 009	0.955
	(0.740)	(0.716)	(0.776)	(0.783)
Woman		0.116	-1.315**	-1 038
		(0.358)	(0.554)	(0.649)
Woman*net out-flow area			2.055***	1.762**
			(0.736)	(0.802)
Woman*net in-flow area			1 090	0.830
			(0.884)	(0.949)
Constant	4.565***	-0.0587	4.966***	0.351
	(0.476)	-1 913	(0.540)	-1 976
Observations	255	253	255	253
R-squared	0.087	0.134	0.103	0.146
Individual Controls	N	Y	N	Y
Sesion fixed effects	Y	Y	Y	Y

*Robust standard errors (clusterd ind) in parentheses: *** p<0.01, ** p<0.05, * p<0.1*
Individual controls: education, born in municipality, Affected by displacement, Other income apart from coffee, age, age squared, woman

Table V : Contribution to abstract public good game when control is available

Dependent variable: Points out of 10 contributed to the group envelope (with and without control)

	(1).	(2).	(3).	(4).	(5).	(6).
Treatment: Local control	0.790***	0.789***	0.789***	0.814***	1.064**	1.196***
	(0.181)	(0.183)	(0.183)	(0.185)	(0.443)	(0.437)
Net out-flow area			2.007***	1.830***	2.150***	2.041***
			(0.556)	(0.604)	(0.626)	(0.671)
Net in-flow area			1.371**	1.273**	1.580**	1.544**
			(0.621)	(0.629)	(0.676)	(0.685)
Treatment * net out-flow area					-0.287	-0.420
					(0.515)	(0.511)
Treatment * net in-flow area					-0.418	-0.542
					(0.540)	(0.539)
Constant	5.765***	6.721***	4.714***	1 710	4.577***	1 519
	(0.164)	(0.412)	(0.404)	-1 658	(0.453)	-1 661
Observations	511	511	511	507	511	507
Number of participants	256	256	256	254	256	254
R-squared	0.022	0.073	0.073	0.102	0.074	0.103
Individual Controls	N	N	N	Y	N	Y
Session Fixed effects	N	Y	Y	Y	Y	Y

*Standard errors (cluster on individual) in parentheses:*** p<0.01, ** p<0.05, * p<0.1*
Individual controls: education, born in municipality, Affected by displacement, Other income apart from coffee, age, age squared, woman

Table VI : Contribution to Public Good Game: Preferences for local control

Dependent variable: Points out of 10 contributed to the group envelope (with and without control)

	(1).	(2).	(3).	(4).	(5).
Treatment: Local control	0.799***	0.825***	0.879***	0.879***	0.879***
	(0.184)	(0.186)	(0.261)	(0.263)	(0.264)
Net out-flow	2.147***	1.775***	1.972***	1.812***	2.135***
	(0.539)	(0.641)	(0.568)	(0.609)	(0.713)
Net in-flow	1.535**	1.358**	1.360**	1.268**	1 088
	(0.599)	(0.686)	(0.624)	(0.631)	(0.727)
Preference: LOCAL control	0.237	0.0996	0.312	0.151	0.310
	(0.276)	(0.281)	(0.327)	(0.327)	(0.588)
Treatment * Prefer LOCAL control			-0.149	-0.102	-0.100
			(0.368)	(0.372)	(0.373)
Net in-flow area * Prefer LOCAL control					0.430
					(0.800)
Net out-flow area * Prefer LOCAL control					-0.599
					(0.694)
Constant	4.442***	1 720	4.576***	1 656	1 531
	(0.389)	-1 682	(0.438)	-1 671	-1 665
Observations	507	503	507	503	503
Number of participants	254	252	254	252	252
R-squared	0.076	0.103	0.076	0.103	0.110
Individual Controls	N	Y	N	Y	Y
Sesion Fixed effects	Y	Y	Y	Y	Y

*Standard errors (clustered on individual) in parentheses:*** p<0.01, ** p<0.05, * p<0.1*

Individual controls: education, born in municipality, Affected by displacement, Other income apart from coffee, age, age squared, woman

Appendix A: additional tables

Table A:1: Descriptive statistics of participants with personal displacement history

	Displaced	Left behind	*Left behind in net in-flow area*	*Left behind in net out-flow area*	All sample	*Net in-flow area*	*Net out-flow area*
Age	48,22	53,12	*55,10*	*52,92*	51,57	*53,06*	*51,14*
Women	11,1%	48,0%	*40,0%*	*57,1%*	39,6%	*28,8%*	*46,8%*
Not born in town	88,9%	36,0%	*50,0%*	*21,4%*	26,2%	*35,0%*	*15,4%*
Family in coffee business	66,7%	62,5%	*55,6%*	*71,4%*	64,1%	*59,5%*	*67,9%*
Does not have other incomes	11,1%	20,8%	*22,2%*	*21,4%*	29,0%	*26,6%*	*31,4%*
Did renew coffee plantation	0,0%	4,2%	*11,1%*	*0,0%*	10,8%	*8,9%*	*12,2%*
Joined coop. for family history	11,1%	29,2%	*10,0%*	*46,2%*	20,9%	*13,0%*	*26,0%*
Joined coop. for inputs	0,0%	50,0%	*40,0%*	*61,5%*	46,5%	*31,2%*	*51,9%*
Joined coop. for social help	22,2%	60,0%	*60,0%*	*64,3%*	50,0%	*48,8%*	*48,7%*
Joined coop. for price	66,7%	52,0%	*50,0%*	*57,1%*	65,0%	*62,5%*	*64,7%*
Joined coop. as unique alternative	11,1%	12,5%	*10,0%*	*15,4%*	13,4%	*9,1%*	*15,6%*
Identifies violence as a problem	11,1%	17,4%	*22,2%*	*15,4%*	5,9%	*6,5%*	*4,5%*
Number observations	9	25	*10*	*14*	260	*80*	*156*

Question: Which are the two most important social problems in your community? Lack of oportunities for the youth, Bad management of Community associations, Bad management of the municipality, Problems to get employment, low returns from coffee, Violence in the area, Lack of manpower.

Table A2 : Contribution to abstract public good: actual in- and out-flows

Dependent variable: Points out of 10 contributed to the group envelope (with and without control)

	(1).	(2).	(3).	(4).
Treatment: Local control	0.789***	0.814***	0.695*	0.770*
	(0.183)	(0.185)	(0.392)	(0.395)
Indicator of actual out-flow (IID2009)	0.418***	0.381***	0.275*	0.277*
	(0.117)	(0.127)	(0.147)	(0.152)
Indicator of actual in-flow (IPD2009)	-0.180***	-0.163**	0.777*	0.547
	(0.0619)	(0.0692)	(0.457)	(0.506)
Treatment * IID2009			0.0252	0.0145
			(0.0929)	(0.0941)
Treatment * IPD2009			-0.00796	-0.00645
			(0.0431)	(0.0438)
Constant	4.698***	1 693	3.584***	0.854
	(0.416)	-1 662	(0.501)	-1 684
Observations	511	507	511	507
Number of participants	256	254	256	254
R-squared	0.073	0.102	0.073	0.102
Individual Controls	N	Y	N	Y
Session Fixed effects	Y	Y	Y	Y

*Standard errors (clustered on individual) in parentheses:*** p<0.01, ** p<0.05, * p<0.1*
Individual controls: education, born in municipality, Affected by displacement, Other income apart from coffee, age, age squared, woman

Table A3 : Contribution to Public Good Game: Location and personal network disruption history

Dependent variable: Points out of 10 contributed to the group envelope (with and without control)

	(1).	(2).	(3).	(4).
Treatment: Local control	0.789***	0.814***	0.789***	0.814***
	(0.183)	(0.185)	(0.183)	(0.185)
Net in-flow area	1.310**	1.299**	1 054	1.087
	(0.629)	(0.635)	(0.658)	(0.669)
Net out-flow area	1.978***	1.838***	2.021***	1.889***
	(0.565)	(0.609)	(0.570)	(0.611)
Left Behind from displacement	0.390	0.293	-0.330	-0.234
	(0.472)	(0.500)	(0.573)	(0.636)
Net in-flow area * Family Left Behind			1.839**	1.444
			(0.869)	(0.900)
Displaced individual	-0.00863	0.0568	-0.105	-0.0359
	(0.691)	(0.687)	(0.739)	(0.719)
Constant	4.698***	1 718	4.738***	1.895
	(0.417)	-1 669	(0.419)	(1.697)
Observations	511	507	511	507
Number of participants	256	254	256	254
R-squared	0.075	0.101	0.084	0.106
Individual Controls	N	Y	N	Y
Session Fixed effects	Y	Y	Y	Y

*Standard errors (clustered on individual) in parentheses:*** p<0.01, ** p<0.05, * p<0.1*

Individual controls: education, born in municipality, Affected by displacement, Other income apart from coffee, age, age squared, woman