

# IDPM - UA discussion paper

## Poverty Reduction and local arenas: Community Level Intermediation and Exclusion of Externally Provided Resources

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## **Abstract**

Most rural development interventions consciously or unconsciously make use of local intermediation mechanisms in their endeavour to combat poverty at the local level. At the same time, how these local intermediation mechanisms occur in practice exerts an important influence on the functioning of external development interventions, particularly who enters and who is excluded from the provided resources. However, local intermediation cannot be completely controlled by an external intervention. As an interface between two different worlds, it results from the interaction between an externally designed institutional structure and the existing local structures. Sustainable poverty reduction, however, requires the opening of local political structures in favour of the politically excluded. This makes it important to understand how and to which extent external interventions can steer local intermediation, in an endeavour to change local political structures. Using the data of a survey in 33 Nicaraguan rural villages the paper identifies both structural and design variables that determine local intermediation and its influence on exclusion from aid flows. Special attention is paid to the local legitimacy of local leaders, the reliance on local brokers and the exclusion of the poor.

## **Key words:**

Rural development interventions, intermediation at the community level, exclusion of the poor, Nicaragua.

## Résumé

La plupart des interventions de développement se servent consciemment ou inconsciemment des mécanismes d'intermédiation locale afin de réduire la pauvreté au niveau local. En même temps, les caractéristiques réelles de ces mécanismes d'intermédiation influencent de manière importante sur le fonctionnement d'interventions externes de développement, particulièrement sur la détermination des 'inclus' et des 'exclus' d'un programme d'aide. Cependant, l'intermédiation locale ne peut pas être contrôlée complètement par une intervention externe. Comme une interface entre deux mondes différents, elle est le résultat de l'interaction entre une structure conçue de l'extérieur et les structures locaux. La réduction durable de la pauvreté, cependant, requiert une ouverture des structures politiques locaux au profit de ceux qui en sont écartés politiquement. Cela devient important pour comprendre comment et jusqu'à quel niveau des interventions externes peuvent diriger l'intermédiation locale, afin de changer les structures politiques locaux. En utilisant les données d'une enquête dans 33 villages nicaraguayens, le papier identifie des variables structurelles et politiques qui déterminent l'intermédiation locale et l'influence de celle-ci sur l'exclusion des flux d'aide. Nous prenons en compte la légitimité locale des dirigeants communautaires, l'emploi des courtiers locaux et l'exclusion des pauvres.

## 1. Introduction

Within the development debate there has been an increased attention to the local level. There is a growing belief that it is at this level that poverty reduction initiatives should be directed. Local people have better knowledge about their environment that is of crucial importance for the analysis of the problems and the search for possible solutions. Moreover, since it is their situation that is to be improved, poverty reduction initiatives have to know what local people consider valuable. Therefore, themes such as democratisation, decentralisation and participatory development have gained wide acceptance. However, at the same time there has been a growing awareness that the inclusion of these themes in development policies does not automatically lead to better development results.

One of the crucial dimensions that are at play here is the articulation between external support and the local level, and how this articulation influences the impact of this external support. Both institutional design and local social capital have been indicated as crucial determinants of this articulation (Khwaja, 2000; Klitgaard, 1994; Krishna, 2001). Part of the articulation consists of the local support that is needed for each local development intervention to be able to function properly. Local demands need to be identified, often beneficiaries must be selected and compliance of mutual agreements must be monitored and enforced. Local people have clear informational advantages. However, local people who intermediate between external and local actors and who claim to represent the community may be poorly accountable to local people. Moreover, it is not guaranteed that they represent all local interests (Conning & Kevane, 2002; Galasso & Ravallion, 2001; Platteau & Abraham, 2002). Also it is not guaranteed that local intermediaries will unconditionally support the development agenda of the external intervention. Without doubt, there exists a real trade-off between on the one hand the information advantages of local intermediaries and thus their bridge-building capacity, and on the other hand the accountability both towards the local people and the external intervention.

The exact nature of this trade-off depends on the contractual structure that is designed by the intervention and on the characteristics of the locality where the intervention is operating. These factors should be taken into account when an appropriate intermediation scheme is to be designed, i.e. that is optimal for the functioning of the intervention and local people. This contribution analyses the nature of this intermediation problem.

The paper has the following structure. After this short introduction a second section will present an overview of several theoretical and empirical studies that contribute to a better understanding of this interface problem, while a third section complements them with some conceptual specifications of our own on the local arenas. A fourth section presents the data of a survey that was realised in 33 rural communities in Nicaragua. With the help of

these data several multivariate models were created to look for explanatory variables of the local legitimacy of village leaders, intermediation structures at the village level and the exclusion of development support. A final section concludes the paper, underlining some important aspects for the policy-making of development interventions that work at the local level.

## 2. The Local Intermediation Problem

### 2.1. The local level

What is referred to as “local”? Uphoff (1993) identified 10 levels of decision-making that affect development, of which 3 levels are considered to be “local”. They are the locality level, the community level and the group level. For the purpose of our study we select the community level, also known as the village level. We believe this level has some specific characteristics that other levels have not. It is at this level that most projects are operating and that an external-local interface appears. Moreover, it is in this residential unit where group size is not too large that frequent and continuous interaction between people takes place. These local interactions are of the utmost importance for resource management problems, such as the generation and local distribution of outside ‘aid’ flows.

The most studied resource management problem at the local level, however, has been the creation and maintenance of *local common pool* goods, where co-operation is needed to optimise resource allocation and use, such as watersheds (Krishna & Uphoff, 1999), fishing grounds (Baland & Platteau, 1996), pasture fields, etc. Game-theoretic approaches, inspired by the prisoner’s dilemma literature, show how important information and trust are to establish local co-operation. Communities have the potential to surmount the non-cooperative optimal strategy of the prisoner’s dilemma. They have a group-size that is not too large so that situations with perfect information and repeated interaction can be approximated. Suchlike set-up has the potential to create reputation and sanction mechanisms that are sufficiently supported by all actors, who when taking account of the long-term consequences of their behaviour would support the cooperative strategy (Baland & Platteau, 1996; Hayami, 1997; Ostrom, 1991; Platteau & Abraham, 2002).

Another equally important but less studied problem of resource management at the local level arises when *external private* goods are channelled to the community and individually allocated. In such a situation the incentive structures are, however, quite different than with the provision of local common pool goods. While in the latter case community members are both intermediaries and beneficiaries, with the provision of private goods some beneficiaries are not active in the intermediation and thus have different interests than those who intermediate. Since benefits are targeted towards specific individuals who are not necessarily intermediaries, performance is less verifiable and peer monitoring may be less useful (Conning & Kevane, 2002)<sup>1</sup>.

<sup>1</sup> However, certain aspects within the provision of private goods can also have a public character. An intervention can condition future cooperation on the compliance of certain individual actions (e.g. collective reputation towards a credit programme). In such a situation the good relation of the community with the external intervention as source of future private goods becomes a common pool good.



Both resource management problems, however, are not unrelated. Elster (1989) classified problems of order of society into collective action problems (such as the management of local common pool goods) and bargaining problems (such as the individual allocation of private goods). While free-rider problems are identified as principal obstacle for the first problem, the main obstacle for the second problem is the lack of agreement on the distribution of the benefits. In his work he addressed the possible interactions between bargaining and collective action.

Collective action problems and bargaining problems have also some explanatory variables in common. First, as illustrated by Elster (1989) both problems are influenced by social norms. Second, they are both influenced by social networks. In a similar way as social networks are determinant for a successful management of local common pool goods, the social networks in which certain local people who provide the link with the exterior are embedded, may influence the local allocation of externally provided private goods.

## **2.2. The link with the “outside”**

We now extend our reflection to the link with the outside. Krishna (2001) showed how capable agency at the local-external interface is needed to transform local social capital within local communities - defined as the presence and quality of locally important informal networks - into flows of benefits. In other words local social capital or “integration”-type social capital as defined by Woolcock (1998), is not sufficient to guarantee a high development performance but should be complemented with synergetic relations with external actors. This is similar to the argument of Evans (1996) on the need of the scaling-up of local social capital into synergetic relations with external actors. Here, synergy is understood as complementarities between local communities and external actors that lead to positive-sum results, i.e. increasing the size of the cake.

The other dimension of synergy, as defined by Evans (1996), is the local embeddedness of the relations with external actors. Here, the basic question becomes if local networks can cross the community boundary and become a new dimension of social capital rather than instruments of rent seeking. This leads us from the size of the cake to the distribution of the cake. Local social capital is not only needed for high development, but as we will show it is also important in the way it leads local agency to foster an equitable distribution of the resource flows over the community.

However, contrary to what numerous external development interventions implicitly assume, the existence of good integration within rural communities is not always guaranteed. The picture of local communities as co-operating entities is in practice too romantic. It is much more accurate to

conceptualise them as conflicting entities. Often information is not that perfect as assumed and different conflicting interests co-exist, which may result in a community failure (Bowles & Gintis, 2001; Hayami, 1997). Recently, a lot of critique has been directed to participatory methods for research (Goebel, 1998) and development initiatives (Cooke & Kothari, 2001; Leeuwis, 2000; Platteau & Abraham, 2002) because of their erroneous assumptions of homogenous interests and needs in the communities, which mask the existing power relations and tensions.

Not only pre-existing power relations between the intervention (the intervention's interests) and the community often predetermine the results of participatory exercises in terms of 'knowledge' creation (Mosse, 2001), but also internal power relations within the community may exert determinant influence on the results. The creation and distribution of knowledge may be severely biased since not all people are equally represented in the public space. If external interventions do not sufficiently take into account local power structures, participatory exercises may be unable to achieve their principal aim of obtaining a representative picture of the community. More than that, if the thus biased picture is used to direct actions, interventions may, unconsciously, reinforce local power structures (Kothari, 2001).

Another difficulty with the community level consists in the flexibility of the community concept itself. Often local community leaders who manage the relations with external interventions strategically present their community in such a way as to increase the probability of acceptance by external development personnel, for example by concealing internal conflicts or by changing the borders of the community. Since it is their representation position that enables them to get in touch and negotiate with external interventions, an interesting question is to what extent these local leaders are accountable to both local people and external interventions.

### **2.3. Local development "brokers"**

Within the thus created trinity of development intervention, community and local intermediaries, we will focus on the position of the latter. They fulfil a bridging function between the two often extremely different worlds of the development intervention and the local community. They form a kind of interface between two social and cultural configurations where negotiation, strategic behaviour, multiple discourses and knowledge processes take a central place (Long, 2001).

Many local intermediaries only occasionally realise mediating tasks. Others are specialised "development brokers" who act on a more continuous basis. The latter have attracted the attention of several development anthropologists (Bierschenk et al., 2000; Laurent, 2001). Some of

these brokers had already a pivotal position within the community before the arrival of development interventions, while others on the contrary gained this position thanks to the arrival of these interventions. By exploiting informational asymmetries local brokers maintain their position as an indispensable link between development interventions and the local community. For local people, local brokers have some characteristics that give them a comparative advantage to get in touch with external actors and to attract resources to the community. Most brokers are higher educated and more mobile than other village members. That is why they manage the discourse that pleases the development interventions and they are able to use the available margin to manoeuvre and sell a good picture of their community. For the external intervention these brokers have better local information, they have the capacity to contribute to the analysis of local problems, and they have the ability to convoke and convince local people.

Institutional economics has addressed brokerage by means of the principal-agent framework that is characterised by information asymmetries that arise after the signing of a contract between a 'principal' and someone who is hired to take some action for him as an 'agent' (Arrow, 1985; Hart & Holmstrom, 1987). The resulting information asymmetries create a shirking problem that encourages the principal, who wants to enforce contract compliance by the agent, to look for an effective contract design. By taking an intermediary position between the external intervention and the community the development broker becomes an agent for both the development intervention and the community. In this way a double principal-agent problem is created, although – as explained above – the community can hardly be considered a clearly identifiable and purposeful principal, as it seldom has clear unified interests.

In case of large differences between the 'local' and the 'external' world the use of local brokers might substantially reduce transaction costs for both parties, i.e. the external intervention and the community. At the same time the information asymmetries give these brokers a certain margin to reconcile the not seldom conflicting interests of both parties. Since local brokers are expected to defend the interests of both sides, they are in an ambivalent position, wherein they must always pay attention to the risks of becoming too unpopular with one of both parties (Bierschenk et al., 2000).

This tension is not only the result of the different interests and expectations of both worlds but also depends on both the institutional design of the external intervention - for instance the exact responsibilities that are attributed to local brokers - and local characteristics that have an independent influence on the interaction between local 'knowledge' and outsider agendas. To obtain satisfactory results interventions have to design an intermediation scheme that in articulation with local characteristics manages to cope satisfactorily with information asymmetries and local political complexities.

#### **2.4. Beneficiary selection and poverty reduction as local political change**

The beneficiary selection problem has been extensively documented by a literature that focuses on the mechanisms used to target certain groups (Skoufias, Davis & de la Vega, 2001; Van de Walle & Nead, 1995; Van de Walle, 1998). Very recently, the black box of mechanisms at the intra-community level that affect targeting has been opened (Alderman, 2001; Conning & Kevane, 2002; Galasso & Ravallion, 2001; Rai, 2002). This recent literature indicates that the potential comparative advantages of the use of community intermediaries consist in their superior access to local information and their higher embeddedness in local networks. Using local intermediaries has the potential to improve screening mechanisms and distribution, all this at lower transaction costs. However, the centre can only imperfectly monitor local intermediaries, and therefore the comparative advantages of the use of local brokers might be eroded by moral hazard.

Sen (1995) already indicated that targeting is as much a political and sociological problem as an economic problem. Gelbach and Pritchett (1997) showed how the lack of political support of the local elite might affect targeting. They explain how a higher tax burden reduces the support of the local elite for redistribution, so that “more for the poor may actually mean less for the poor”. However, also without resorting to a tax system, a minimum support of the local elite, to which most local brokers belong, is needed to reach the poor.

Although local brokers, who form a large part of the local elite, potentially receive a lot of benefits of intermediating between external and local actors (such as political support and loyalty of local people, reputation and even personal satisfaction of being a good leader, etc.), in most cases these benefits are not sufficient for them to be disposed to support outside agendas. In most cases a share in the channelled resources is an unavoidable additional condition. This considerably reduces the potential of targeting to induce more profound structural transformations.

For those who define poverty reduction as income increases of the poor, this would not be a reason of preoccupation under the condition that the resources are optimally allocated in terms of cost-effectiveness. Under certain conditions targeting is warranted, while under other conditions universal provision of external private resources – i.e. without imposing any selection criteria – can be more cost-effective to reduce income poverty (Van de Walle, 1998).

However, for others – including us – poverty reduction does not only have an economic dimension but also includes the opening of local political structures towards the poor whatever economic impact it could have. Poverty reduction is broadened to include political change in favour of the poor who are politically excluded (Bastiaensen et al, 2003), and to reach the poor and

poorest as such is placed in the forefront again. This relational dimension of poverty is directly related to the processes that create and maintain poverty (Webster & Engberg-Pedersen, 2001). Thus, to induce structural changes required for poverty reduction to be sustainable, poverty reduction programmes have to become political entrepreneurs who try to by-pass the local elite and to find new actors outside of the local elite who can represent the politically excluded.

Also within the microfinance literature, the difficulties to reach the poorest have been increasingly documented (CGAP, 2002; Hickson, 2001; Morduch, 2000; Navajas et al., 2000; Rhyne, 1998). It is now widely accepted that microfinance institutions should aim at financial sustainability. Reaching the poor while maintaining financial sustainability, however, is not an easy job. Costs relating to beneficiary selection and the specification and enforcement of financial contracts are relatively fixed per credit transaction. That is why financial operations with poorer clients tend to entail higher transaction costs per unit of loan volume. This hampers microfinance programs to construct a portfolio that amply covers the poorer sectors (Barham et al., 1996).

In addition to this transaction-cost rationing, for microfinance programs the initial selection and intermediation problems become significantly more complex since the access to external resources is conditioned upon the posterior compliance with certain conditions. Particularly, the willingness (moral hazard) and capacity to accept and respect the contract from the beneficiary's point of view become important additional selection criteria. For programs that aim at financial sustainability this makes a crucial difference.

Both transaction cost rationing and the complication of the selection problem result from information asymmetries, which are to be kept under control by appropriate local intermediation schemes. While the use of local intermediation helps microfinance programs to reduce these information problems – it actually forms the principal source of their success in terms of beneficiary selection and contract compliance –, it is increasingly documented that local intermediation between the local and the external level as part of local agency is more diverse and complex than generally assumed (Bastiaensen & D'Exelle, 2002; Conning, 1999; Vaessen et al., 2002; Van Bastelaer, 1999). Informational advantages and multiple relationships within the community make it easier for local intermediaries to enforce contract compliance. However, local intermediaries may have other interests and incentives than the external actor, which can induce them to behave in a way that lowers the net benefits for the intervention. To prevent this, the incentives provided by the project should always be larger than the possible losses local intermediaries undergo, for example by deteriorating relationships with certain local people because of enforcing contract compliance. If not, the use of local intermediaries may even become a catalysing factor of local collective protests against the development intervention.

### 3. Local Arenas Around Development Interventions

In this section we will briefly conceptualise the arenas that arise around external development interventions. Bierschenk & Olivier De Sardan (1997) define arenas as “place[s] of concrete confrontation between social actors on common issues”. Without doubt around each development intervention an arena arises as different interests are confronted with each other. An important dimension of these local arenas is the way the relations between external interventions and local beneficiaries are established, and especially what local intermediation mechanisms are used.

Figure 1 presents the structure of the local intermediation between an external development intervention and local beneficiaries. The three double arrows indicate the possible relations between a development intervention, local intermediaries and final beneficiaries. Each arrow indicates a potential transfer of resources and/or information or the realisation of a certain action. A double arrow can indicate a unilateral engagement or a bilateral engagement. In the latter case, two actors commit themselves to interchange resources, information or actions and they enter into an implicit or explicit contractual relation. This means that in addition to a selection problem (with whom should a relation be established?), which is not limited to a contractual relation, an enforcement problem (whether the actors comply with their commitments) appears.

A poverty reduction program has certain hypotheses on local poverty and how to reduce it. For this it elaborates certain objectives that it wants to attain by, among other things, transferring (financial/material) resources to specific beneficiaries in the area where it wants to combat poverty (arrow 1a). Some interventions transfer private resources to beneficiaries without expecting any contribution of the beneficiaries. Other interventions enter into a real contractual relation by imposing certain contributions that the beneficiaries should realise after the transfer of the private goods, such as reproduction and distribution to other community members, or repayment (in kind or money) of the transferred goods.

However, in most cases the intervention does not have sufficient information or capacity to realise a good selection of local beneficiaries and to enforce contract compliance. That is why on the field the external intervention has to take recourse to local intermediaries (arrow 2a). The tasks executed by these intermediary persons can differ a lot but in most cases these actors can exert an important influence on beneficiary selection and contract compliance<sup>2</sup>. At the same time there are other intermediaries who are not contacted by the intervention with these intentions - and thus invisible to the intervention - but who take actions that can influence the operations of the intervention. An important category of these intermediaries is the beneficiaries of the intervention. Each beneficiary is a potential intermediary between the intervention and potential new beneficiaries.

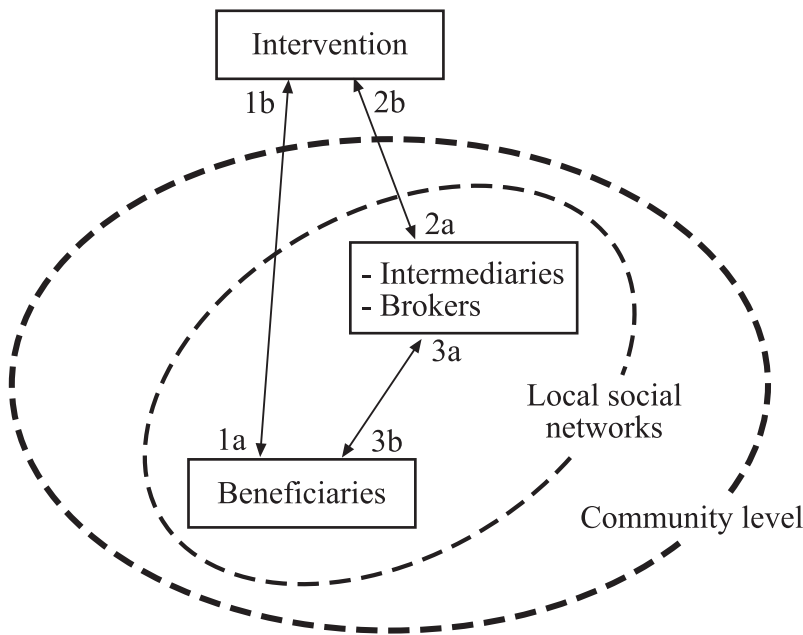
<sup>2</sup> In contrast with the intermediary persons we have to notice that local staff – although often also embedded in local social networks – is assumed to behave in accordance with the objectives of the intervention and is not considered to be a separate intermediating category (between the intervention and the community) in the figure.

Concurrently, local people consider anti-poverty interventions as important opportunities in their search for a way out of poverty (arrow 1b). However, for them it is often all but evident to become 'visible' or to get in contact with these interventions. That is why they too have to resort to intermediary persons (arrow 3a) who transfer information on the access conditions and the terms of contract – if any – or who have even real selection power.

Here, we must emphasise the difference between local leaders, local intermediaries and brokers. With 'local intermediaries' we refer to local persons who intermediate on a regular or occasional basis between local people and external actors that channel external resources to the community. For local intermediaries to become brokers, they have to be 'local leaders' as well, i.e. persons who represent local people towards other parties. They need a mandate of local people. This enables them to specialise in mediating tasks and to act on a more continuous basis. Thus, there are local leaders who are not brokers because they do not intermediate any external resources – although this category is somewhat limited, as most leaders do exert some influence on local intermediation – and there are people who exert an influence on the transfer of external resources to the local level but who do not represent local people, so they are not local brokers either.

Often the final beneficiaries maintain a (often implicit) contractual relationship with these brokers by whom they are taken into account in exchange for political support. These contractual relations are embedded within the existing social networks. Also for local intermediary persons who are not local leaders and thus do not need political support, it is clear that the relations that they maintain with other community members are determinant (arrow 3b) as these are the carriers of information and recommendations. At the same time, for brokers specialised in these intermediation activities, their relation with external interventions (arrow 2b) guarantees them a privileged access to external resources and local power. These take an important space within their livelihood strategy. Often the relationships these brokers maintain with external interventions are based on mutual commitment. In return of their intermediating activity these local brokers expect to benefit of the channelled external resources.

**Figure 1. The conceptual framework**



The final constellation of this structure can vary a lot<sup>3</sup>. It is the result of the interaction of external and local actors that act in correspondence with their individual objectives and strategies. At the same time, individual strategies are elaborated as reaction to the broader structure and the local social structures in which local actors are embedded. Concomitantly, while external development interventions by means of design variables (arrows 1a and 2a) can exert some influence on the local translation of their development support, local variables remain crucial. We are especially interested in the influence that both design variables and community variables exert on local intermediation structures and on the final outcome in terms of inclusion/exclusion of the poor of the channelled resources. Finally, we have to clarify that in most villages several interventions are working simultaneously, so that the scheme in figure 1 should be applied to the totality of interventions present in each village.

#### 4. The Data

To study the local intermediation of external interventions in Nicaragua a survey was realised in 33 rural villages, with approximately 50 observations per village. Translating Uphoff's (1993) classification of "local" levels to the Nicaraguan context, we decided to define established socio-economic residential units of between 70 and 250 households as "communities" or "villages" (both are used as synonyms throughout the paper), while we defined smaller populations as "groups" and larger populations as "localities". We believe these residential units have some specific characteristics that units with smaller or larger populations have not<sup>4</sup>.

<sup>3</sup> Development interventions often condition the transfer of external resources upon the formation of a local representative unit (i.e. a group of interlocutors often in the form of a local committee). Most committees are little democratic in Nicaraguan rural areas and are dominated by one broker who monopolises the contact with the intervention. The other members often do not play a brokerage role but are occasional intermediaries.

<sup>4</sup> The theoretical number of relations that should exist for a population to become completely connected is calculated by  $n^2$ , with  $n$  equal to the population size. This makes that for small population sizes it is a lot easier to have highly connected networks, while for large populations it becomes almost impossible. We also expect that there exists a range of population sizes where highly connected networks are not impossible to exist while they are neither guaranteed. It is this range of population sizes that we consider to be a constitutive characteristic of "communities" or "villages".



We selected 33 rural villages over the whole Pacific and Interior region of Nicaragua. The selection was realised in such a way as to maximise variation in socio-economic and geographical characteristics. Variation is very large in terms of agrarian structure, history, geographical characteristics, economic activities and access to urban centres. Agricultural and/or cattle production activities, however, are highly present in all surveyed rural villages.

The definition of the village boundaries and the elaboration of a village census were realised with local support. To reduce the possible polluting effects of strategic use of the community concept by local informants we consulted and compared different information sources. Out of these censuses 50 observations were selected randomly in each village. To study the relations of local people with external interventions, not only currently active interventions have been taken into account but also recently concluded development interventions. This enabled us to have sufficient observations of households with access to external development support, as few interventions keep working in the same community for several years.

#### **4.1. Types of development interventions**

The local intermediation problem as described in previous sections is present with all external development interventions that channel private goods to individual actors, such as food-for-work programs, food-for-education programs, technical assistance programs, microfinance programs, etc. We make abstraction of both the type of private goods that are channelled and the exact objectives of each program – such as community building, empowerment, accumulation of local capacities, economic development, social services, etc. – and we only analyse the distribution component of the transferred private goods. In contrast with studies that focus on one intervention, we studied all development interventions together. This permits us to obtain more general results and to study the effects of institutional design.

In the 33 villages where the survey was realised we identified 82 development interventions that in some way or another transfer private goods or services to individual households. An important variable that differentiates these external development interventions are the access conditions to the private goods. Within the contract between development interventions and local beneficiaries we are especially interested in the cost that interventions transfer to local people and on which they condition the access to the private goods, since it is along this dimension that a large part of the variation of development interventions is observed.

Table 1 presents two important types of conditions that characterise this cost. A first important condition is how much has to be paid for the channelled goods. Several interventions demand a small contribution (in financial

terms, in terms of time or labour) for the channelled goods, but often this contribution is not considerable in comparison with the value of the channelled goods. In such a case we speak of donations. Table 1 shows that 48 projects channel material resources by means of donations.

If considerable part of the cost of the goods has to be paid then this is often done by means of a deferred payment, i.e. a credit transaction. This leads us to the second important condition, i.e. whether the channelled resources have to be returned. In the same table<sup>5</sup> we observe that 51 projects channel resources by means of credit transactions. Within this group of interventions we distinguish two types. First, interventions that channel resources by means of credit transactions can aim for complete recuperation of the resources and for full-coverage of operation costs. We call these non-subsidising credit interventions. Second, for subsidising credit interventions the access cost for beneficiaries is lower since complete recuperation of resources is not fundamental – often leading to semi-donated transfers – and operation costs are not fully covered by the beneficiaries' contribution.

<sup>5</sup> Crossing both conditions is permitted as a project can simultaneously channel different goods at different conditions.

**Table 1. Types of projects**

	Donations		Total
	No	Yes	
Without credit transactions	5	26	31
	16.1%	83.9%	100.0%
Subsidised credit transactions	5	20	25
	20.0%	80.0%	100.0%
Non-subsidised credit transactions	24	2	26
	92.3%	7.7%	100.0%
Total	34	48	82
	41.5%	58.5%	100.0%

When crossing both variables, i.e. the transfer of economic resources by means of donations and by means of credit transactions, we observe that they are highly correlated. Very few projects that offer non-subsidised credit loans channel donations, while most projects that offer subsidised credit or that do not offer any credit do channel donations. This correlation is a result of the fact that both variables are correlated with the level of market-orientedness of each project. Therefore, one of both variables may be used to characterise the development interventions according to their level of market-orientedness. We prefer the use of credit loans since this variable permits us to classify the projects in three groups (instead of two). The first group consists of projects without any credit component, to the second group belong projects with subsidised credit loans and the third group consists of projects that offer credit loans at market conditions.

## 4.2. Local intermediation of external development interventions

For each individual relation with an external development intervention we assessed local intermediation by asking the beneficiary how the relation was established. As the figures in table 2 show, for the three types of projects local intermediation is very important for people to obtain access. Local intermediaries may be very important bridges to external development interventions since they transmit important information to the local level, they may recommend potential beneficiaries to project staff or they may have even real selection power<sup>6</sup>. We also see that local brokers, i.e. local intermediaries who are also local leaders, are highly present.

<sup>6</sup> Although important, we do not include the mandate that external interventions give to local agents in our analysis.

**Table 2. Mechanisms of access vs. different types of projects**

	No-finance	Subsidised finance	Non-subsidised finance	Total
Number of relations with projects	365	752	459	1576
Own initiative	8,5%	7,6%	23,5%	12,4%
Visit by project staff	29,9%	29,5%	29,8%	29,7%
Intermediation by a local leader (from the same community)	52,1%	43,6%	22,4%	39,4%
Intermediation by a peer, non-leader (from the same community)	6,8%	12,6%	16,8%	12,5%
Intermediation by someone from outside the community	3,0%	6,3%	7,0%	5,7%
	100,0%	100,0%	100,0%	100,0%

Note: The studied mechanisms of access refer to the beneficiary's point of view

In table 3 we crossed local intermediation mechanisms by region and by socio-economic group. For the latter variable we calculated a relative poverty indicator equal to the inverse of the average of three standardized important household level indicators (the number of economic activities<sup>7</sup>, the number of months per year without food difficulties and the house infrastructure measured as a composite index of the quality of roof, soil and walls). The number of economic activities was standardized by its 5 percent trimmed mean while the house infrastructure index and the number of months per year without food difficulties by their ordinary mean. All means are calculated at the village level and not for the sample as a whole, as we are interested in relative poverty and local inequality. Taking account of the large differences between the different socio-economic regions where the sample of villages was taken, these are the only household level economic variables measured in the survey that we find appropriate for cross-sectional analysis.

<sup>7</sup> Accounting each agricultural crop as a separate economic activity

In each community the quartiles of this poverty indicator were calculated, and each quarter is aggregated over the 33 communities. We observe in table 3 that local intermediation is important for all socio-economic groups and this in the two regions where the survey was realised. Local intermediation (both by local leaders and by peers) is somewhat higher in the more densely populated Pacific region. In the Interior region people are more dependant on their own initiative. The poor tend to be more dependant on local brokers to accede projects, and the more so in the Pacific region. In the latter region more than 50 percent of all relations with external interventions has been intermediated by local brokers for the poorest class, while this class is very limitedly contacted directly by project staff.

Table 3 also shows that the channelled resources benefit the richer sectors more than the poorer sectors. A lot of poor households are excluded from any development support, although in both regions technically this does not have to be the case, shown by an average of more than 1 relation per household. The data seem to indicate that increasing the channelled resources does not guarantee that the poorer sectors are more included. While in the Pacific region there are more relations with projects than in the interior region, the poorest quarter remains with a similar small average number of relations with projects per household.

**Table 3. Mechanisms of access vs. poverty vs. region**

	Pacific					Interior				
	I	II	III	IV	Total	I	II	III	IV	Total
Number of relations with projects	330	292	204	144	970	290	205	191	132	818
Number of relations per household	1,78	1,55	1,04	0,81	1,30	1,71	1,22	1,07	0,80	1,20
Own initiative	9,6%	8,0%	6,8%	6,9%	8,1%	19,5%	14,3%	20,3%	16,1%	17,8%
Visit by project staff	34,8%	27,4%	31,3%	15,3%	29,0%	29,9%	35,4%	24,2%	33,0%	30,4%
Intermediation by a community leader (from the same community)	33,9%	42,3%	39,6%	54,2%	40,5%	34,4%	32,3%	36,6%	37,5%	34,9%
Intermediation by a peer, non-leader (from the same community)	15,3%	15,3%	17,7%	17,6%	16,2%	11,2%	12,4%	13,1%	7,1%	11,2%
Intermediation by someone from outside the community	6,4%	6,9%	4,7%	6,1%	6,2%	5,0%	5,6%	5,9%	6,3%	5,5%
	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%	100,0%

Note: The studied mechanisms of access refer to the beneficiary's point of view  
I = richest quarter - IV = poorest quarter.

Local intermediation may actually be higher than shown by tables 2 and 3, as local people who get in touch with external interventions 'on their own initiative' may have had contact with local intermediaries before. Since local intermediaries often have a privileged access to important information of the intervention, such as the type of channelled private goods and the access conditions, they are frequently consulted. While the intermediation categories included in the table are of a "direct intermediation"-type, this last type of more hidden local intermediation is of a more "indirect" type.

Also seen from the point of view of the project staff local intermediation may be higher than shown in tables 2 and 3. Although several development interventions allege they do not make use of local intermediation, in practice all interventions are to a certain extent influenced by local intermediation mechanisms. The visits made by project staff may have been guided by local recommendations. Project staff makes frequent use of local informants to start or expand operations, and the information on the project is always transmitted by means of social networks within the community. Although we do not measure these types of intermediation empirically as they are not captured by the beneficiary's point of view on the access mechanisms to development interventions, we do take account of them as latent mediating variables.

It must also be stressed that local intermediaries are not only important to establish individual relations with external development interventions; they may also play a vital role in the further development of these relations. Often access to external assistance is conditioned upon the compliance of certain actions that local brokers are expected to monitor and enforce. Also, re-negotiation of the contract terms is often needed as the environment is continuously changing.

After the short analysis of pooled data in this section, we will realize an inter-village multivariate analysis, which permits us to include village-specific structural variables, to study in the following sections respectively the local legitimacy of village leaders, local intermediation structures and the exclusion of development support, all at the village level.

## **5. Local Legitimacy of Village Leaders - Brokers**

By taking an intermediary position between external development interventions and their beneficiaries, local brokers actually become brokers for both parties. They facilitate the legitimisation of their position towards both parties by creating a situation wherein both the external interventions and the local community need them. They have clear comparative advantages, and information asymmetries towards both parties give them certain space to manoeuvre. However, sometimes this is not enough to avoid the contesting of their legitimacy by one of both parties due to the often-conflicting demands of both parties in a permanently changing environment. While for external interventions local brokers should facilitate beneficiary selection (respecting the intervention's criteria) and the compliance of contract terms (if necessary) by the selected beneficiaries, for local people they should take actions that sustain their local legitimacy.

A community, however, has seldom unified interests and opinions. This also applies to the identification and opinions on local brokers and leaders<sup>8</sup>. Divergence of the opinions on the same local leaders is widespread, the more so in divided/polarised communities. That is why in an attempt to measure

<sup>8</sup> For empirical reasons (to guarantee a sufficiently high number of observations) we opt for studying the local legitimacy of local leaders, including the leaders that have not been identified as brokers (as identified in our survey as "direct" intermediaries). Most of these non-brokers leaders, however, are highly active within more "indirect" intermediation (not measured by our survey), so that they too are important for the relations with the outside.

the local legitimacy of local leadership, we aggregated the different opinions on all identified local leaders to create one aggregated index of the local legitimacy of local leadership. We asked each respondent to identify the three most important leaders and to evaluate them on their capacity, fairness (the degree to which they distribute benefits equally) and unselfishness (the degree to which they do not take profit of their intermediary situation). Each one of these three dimensions was measured by one question to which they could answer with yes (= 1) or no (= 0). Then, for each dimension the village average of all individual leader evaluations was taken. All the three so created variables are highly correlated (see annex for correlation matrix). In communities where local leadership is perceived to have higher capacity, local leadership scores also better on fairness and unselfishness. Because of the high correlation between these three indexes we decided to use the average of them to create an index of the local legitimacy of local leadership, denominated LEAD\_LEG.

Before using the empirical material, we present the variables that we consider for inclusion in our multivariate model explaining the legitimacy of local leadership. A first important variable that we expect to influence the local legitimacy of local leadership is the poverty level of the municipality to which the village belongs, POV\_MUN. This variable has three possible values referring to three ranges of income poverty in the municipality<sup>9</sup>. In poorer villages the need for local leaders is higher as they can be very important agents to attract external resources. All actions that have the potential to increase local welfare are welcomed, so that generally local leaders are unconditionally accepted and remain relatively non-criticized.

However, local leaders are not equally accepted in all conditions. We expect local leaders to be more contested in communities where a larger part of the locally channelled external resources is intermediated by local brokers – measured as the proportion of all individual relations with external interventions that have been established by means of intermediation by local brokers (BROK\_REL). This has a lot to do with fairness. Local brokers are more visible than other intermediation mechanisms (such as local intermediation by peers non-leaders or other occasional contacts) and can be easily marked to be responsible for possible unfair distributions. In poor rural villages the local distribution of external resources is a very delicate matter. Local brokers, however, generally favour their own networks, which have a limited scope. This makes that the more access to development support is intermediated by local brokers, the more people feel unfairly treated by some of these brokers.

Another important variable is community social capital. In communities with higher levels of social capital defined as community unity, it is easier for local leaders (and thus also brokers) to obtain or maintain local legitimacy. By definition local leaders are expected to represent the ‘collective interest’ and when necessary to catalyse collective action in defence of this collective interest. In communities where community unity is higher, col-

<sup>9</sup> Source: Dirección de planificación – FISE. Municipal poverty is defined as the percentage increase of consumption of the poor population relative to the poverty line that is needed to eliminate poverty. Municipalities with a poverty gap equal or higher than 21 percent are considered extremely poor; between 7 percent and 20 percent are considered to face medium poverty and less than 7 percent to face low poverty. In 1995 the poverty line equaled an annual consumption of US\$ 428.94 per capita.

lective action is easier to realise and consequently the ruling leaders are less contested. Moreover, if local leaders act against the collective interest, it is expected that they be more easily contested. To evade replacement they have to act in defence of the collective interest. In divided communities, it is less evident what is meant by the collective interest and local leaders are more contested. However, these communities often lack the means (collective action) to replace them, so that local leaders can maintain their position in spite of low local legitimacy.

However, the relation goes also in the other direction. Highly legitimated leadership has a higher capacity to stimulate local collective action, an important aspect of social capital as we defined it. This bi-directional causality forces us to estimate more than one equation simultaneously in a system of equations. At the same time we are conscious that the significance of the correlation between community unity (which we would measure by means of a village index of perceptions on community life, see section 7 where we define UNIT\_COM) and LEAD\_LEG might also be the result of the correlation of both perceptions indices with a third factor that is individual-specific such as optimism, the way to perceive life, etc. To solve this problem we have to do a panel data estimation that enables us to control both household specific and village specific variables. For the moment we opt for the drastic and preliminary “solution” of excluding the variable that measures community unity from this equation and we will address this problem in future work.

We also expect that the legitimacy of local leaders be influenced by the past presence of agrarian reform, measured by the percentage of households that received land from the agrarian reform (AGR\_REF). The agrarian reform in Nicaragua was realised in the 1980s and the early 1990s and in addition to the increased land access involved the injection of an enormous amount of economic resources to the local level. These resources were locally intermediated by political and (often) opportunistic leaders. This and the fact that agrarian reform areas were zones of ‘artificial social creation’ (characterised by high levels of immigration) in a context of political polarisation and often armed conflict resulted in high distrust towards this local leadership. Moreover, the access of these local brokers to external resources – a very important source of their local legitimacy – has now drastically decreased. The agrarian reform created also a lot of new local brokers reducing the concentration of local brokerage, which is confirmed by the significant and positive partial correlation between AGR\_REF and the centralism of local brokerage, CENT\_BROK (0.547; sig. .001\*\*\*). This increased rivalry between local brokers, social cleavages in the community and local legitimacy of local leadership. For CENT\_BROK we used a Herfindahl index of all relations with projects that are intermediated by brokers, i.e. the sum of the squared shares of the different brokers within the total amount of relations intermediated by brokers.

One of the comparative advantages of local leaders lies in their educational superiority. However, in a lot of communities the mean level of education has risen in the last decade and the comparative advantage of local leaders is increasingly corroded. More people are able to understand and inspect the actions of local leaders. At the same time more persons are capable to exert a representative function and to challenge local leaders. Theoretically this could enforce local leaders to be more accountable increasing their local legitimacy. However, seen from a dynamic perspective we expect it to be all but evident to move to this superior equilibrium. Most communities are characterized by centralized leadership and have little experience with democratic rules. Traditional leaders tend to interpret the challenges towards their position as signs of distrust and ingratitude, which induces them to high resistance. That is why we expect that local legitimacy of local leadership decreases with increasing village levels of education. To measure the latter variable we first calculated the average education level at the household level considering all household members older than 18 years and we then took the village mean of all households, excluding the households of local leaders (EDUC\_1).

**Table 4.** *An explanatory model (OLS) of the local legitimacy of local leaders*

Dependent variable	LEAD_LEG			
	Beta	T	Sig.	Toler. <sup>a</sup>
POV_MUN	0.439	3.12	.004***	0.531
BROK_REL	-0.298	-2.82	.009***	0.944
AGR_REF	-0.333	-3.13	.004***	0.929
EDUC_I	-0.245	-1.70	.100	0.505
N	33			
Adj-R2	0.663			
F-ratio	16.75			
F-probability	0.000			
Prob > chi <sup>2</sup> <sup>b</sup>	0.122			

<sup>a</sup> Tolerance value

<sup>b</sup> Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, with Ho: Constant variance

We have tested for the basic assumptions of linear regression. The chi square test in table 4 indicates absence of heteroskedasticity. Visual examination of the partial regression plots has confirmed the absence of normality and linearity violations. Univariate normality is also confirmed in the table of descriptive statistics in the annex. Multicollinearity is limited as all tolerance values are above 0.10.

We observe in table 4 that – as expected – local legitimacy of local leadership is significantly lower in villages affected by agrarian reform and in villages where local brokers intermediate a larger share of the locally channelled resources. At the same time local legitimacy is higher in poorer regions. Poverty is also higher in the less densely populated and less accessible Interior region. We did not control for the two most important socio-economic regions where the survey was realized, as it resulted highly correlated with three of



the explanatory variables. Besides lower poverty, the Pacific region is also characterized by higher education and higher use of local brokerage. Without doubt, the latter is due to the considerable higher presence of and experience with development support.

## **6. Intermediation Structures at the Village Level**

After studying what influences local legitimacy of local leaders, in this section we will study the position of local brokers within local intermediation structures and how this is influenced by local and external variables. We are interested in the extent to which local brokers are used instead of other local intermediation mechanisms, and the extent to which local brokerage is concentrated in a limited number of brokers. Both issues are important if we want to determine the need and potential for local political change, as local brokers can have important political power. At the same time, we expect that there exist substantial differences as to the local intermediation structures that the different development projects try to construct.

The level of analysis remains the village level. We opt for aggregating per village all local resources that the multiple external interventions channel. By studying the aggregate picture we can look for structural variables that have a general effect on the intermediation structures at the village level, while we can still include variables that indicate the composition of the aggregate development support to study the importance of the type of development support. The characterising variables of local intermediation structures that we want to explain are the proportion of locally intermediated relations with projects that have been intermediated by local brokers (BROK\_INT) and the concentration of local brokerage (CENT\_BROK).

A first important dimension we expect to determine the use of local brokerage is the market-orientedness of the totality of relations with external interventions in a village. This dimension is represented by an index that measures the relative presence of market-oriented or charity-oriented projects. This index, EXT\_MARKET, is equal to the weighted sum of all relations, with the weight equal to the type of project (with 1 for projects without any finance component; 2 for projects with subsidised finance; and 3 for projects that offer finance at market conditions) divided by the total number of relations.

The more market-oriented is external development support – i.e. the higher the proportion of operation costs that should be paid by local beneficiaries – the higher is the expected effort of the receiving party and thus the more serious the enforcement problem. This makes an important difference for the local intermediation mechanisms on which external interventions rely. In table 2 (section 4) we have seen that all three types of projects make equally use of local intermediaries. However, in the same table we also

observe that market-oriented projects are more reluctant to make use of local leadership, and local intermediation is more realised by non-leader peers. For market-oriented projects autonomy of local leadership is more important since this may have immediate effects on the financial results of their operations. Local brokers may have too much local power so that by relying on local brokerage it may become difficult for external interventions to 'enforce' a good agency. Moreover, local brokers often maintain a lot of patron-client relations that are characterised by rules of loyalty and paternalistic protection, which cannot easily be made compatible with the rules of a sustainable credit system, including the need to emphasise individual selection procedures and repayment under all conditions. Selection of beneficiaries may be led by clientelistic mediation and not by externally imposed criteria and local brokers may be reluctant to enforce the repayment of loans towards the clients.

In their attempt to influence the discriminatory power of local brokers, besides changing the use of local brokers development interventions can also change the level of responsibility that they transfer to these local intermediaries. In this respect Bastiaensen (2000) showed how a rural credit program with sustainability objectives optimised its intermediation structure by reducing the decision power of local brokers. The program started its operations with local committees that were expected to select clients and administer (the disbursement and recuperation of) the funds. However, this intermediation scheme led to politically or religiously conditioned clientelistic mediation with non-satisfactory results in terms of repayment. A new intermediation scheme was implemented that was characterised by the participation of a neutral administrator of the program in the local committee where he or she had a right of veto in all decisions. In this way, the program was able to disconnect selection and enforcement decisions from the prevailing local clientelistic structures. In a recent phase even the remaining decision power of the local committee was completely transferred to the specialised personnel of the central banking office. In other words, a shift was made from the use of broker-agents to the use of local staff-agents.

Charity-oriented projects, in contrast, often delegate a lot of tasks to the local level as this agrees with the empowerment or democratisation discourse that many of these projects engage in. These projects often impose the creation of local committees as they expect them to guarantee local representation and accountability, and by this way making their services more responsive to local demands. However, local social structures in the Nicaraguan rural areas are seldom democratic, so that the creation of a local committee as such does not automatically guarantee local representation and accountability.

A second important dimension we expect to influence the use of local brokerage consists of the local characteristics that influence the comparative advantages of local brokers. In our conceptual section we have argued that local brokers have certain advantages to facilitate access of local people to development resources. Local peers who are no brokers can also interme-

diate. However, we expect that local people resort relatively more to local brokers than to other peers in villages with lower education levels, higher poverty levels and higher intra-community differences of connectedness with urban centres (where most offices of external interventions are located and thus access to important information is acquired), measured by the standard deviation of the number of visits per month to urban centres (ISOL\_INEQ). In these villages local brokers have more comparative advantages than local peers to intermediate so that intermediation power is more concentrated in local brokers.

Also in communities with lower levels of recent immigration, measured by the village 5 percent trimmed mean of the number of years living in the community (YEAR\_COM), and fewer personal conflicts, measured by the median number of personal conflicts (CONFL\_COM), we expect that people rely more on local leaders. As constructing social networks takes time, recently arrived actors have less ample social networks. This makes these new actors to be less taken into account by local leaders, or in case these actors themselves hold a leading function they also take account of fewer people. The same happens in communities with a high number of personal conflicts.

Besides the use of local brokers we are also interested in the variables that influence the extent to which local brokerage is concentrated in a limited number of brokers. For this we will estimate a second model with the centralism of local brokerage as dependant variable. We expect this variable to be influenced by the historical presence of agrarian reform, AGR\_REF and the village mean of the number of relations with external development interventions, REL\_EXT. Both the Nicaraguan agrarian reform and the presence of external development support have given important incentives for the formation of new local brokers, with a democratisation of local political spaces as an interesting result.

**Table 5. Reliance on local brokers (OLS)**

Dependent variable	BROK_INT			
	Beta	T	Sig.	Toler. <sup>a</sup>
EDUC_2	-0.602	-2.41	.024**	0.226
POV_MUN	0.358	2.00	.056*	0.444
ISOL_INEQ	0.508	3.04	.005***	0.506
YEAR_COM	0.119	0.59	.563	0.346
CONFL_COM	-0.246	-2.00	.056*	0.931
EXT_MARKET	-0.591	-4.47	.000***	0.810
N	33			
Adj-R2	0.548			
F-ratio	7.46			
F-probability	.000			
Prob > chi2 <sup>b</sup>	.160			

<sup>a</sup> Tolerance value

<sup>b</sup> Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, with Ho: Constant variance

Multicollinearity problems are limited in both models as all tolerance values are above 0.10. The hypothesis of homoskedasticity cannot be rejected as indicated by the chi square test in tables 5 and 6. Visual examination of the partial regression plots confirms the absence of normality and linearity violations. Univariate normality is also confirmed in the table of descriptive statistics in the annex.

All coefficients in the first model have the expected sign, but not all are equally significant. In table 5 we observe especially the very high coefficients of the village mean education level, the village internal differences of the connection to urban centres, and the relative presence of relations with market-oriented projects. At the same time it seems that social networks can be more rapidly constructed than expected, as the number of years that people live in the community has not been identified as an important and significant explanatory variable in our model. As to the model in table 6 we observe that both coefficients are significant and have the expected sign.

**Table 6. Concentration of local brokerage (OLS)**

Dependent variable	CENT_BROK			
	Beta	T	Sig.	Toler. <sup>a</sup>
AGR_REF	-0.301	-2.71	.011**	0.838
EXT_REL	-0.426	-1.91	.066*	0.838
N	33			
Adj-R2	0.334			
F-ratio	9.02			
F-probability	0.001			
Prob > chi2 <sup>b</sup>	.603			

<sup>a</sup> Tolerance value

<sup>b</sup> Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, with Ho: Constant variance

A last comment is warranted on the interaction between local and external variables. External development interventions design intermediation schemes that they consider to be supportive of their objectives. However, since local characteristics exert a strong influence on local intermediation, how intermediation actually occurs can significantly differ from the intermediation as desired by external actors. In some environments it is difficult to implement a certain type of intermediation structure. To what extent external interventions can determine the structure of local intermediation then becomes an important research question.

The regression results in table 5 show that poverty, low education levels and the local inequality of remoteness to urban centres increase the reliance on local brokers, while market-oriented projects are reluctant to rely on local brokers. This incompatibility and its consequences for the functioning of external development support are illustrated by a study of Bastiaensen and D'Exelle (2002) on a rural finance program. Patron-client networks and their associated rules of loyalty and paternalistic protection cannot easily be made compatible with the rules of a sustainable credit system, including the need

to emphasise individual selection procedures and repayment under all conditions. The study indicates that poor, vulnerable communities might prefer defensive relationships of the 'patron-client' type to the relations with the rural finance program. As such these communities could thereby become 'confined' to an institutional path that provides short-term risk mitigation but also involves longer-term disadvantages in terms of economic opportunities and distribution of power. In this process, the study also identified an element of complicity on the part of many 'charity' development organisations, which continue to assist the poor in such communities with short-term subsidies, which are inevitably used by local patrons to maintain legitimacy towards their clients.

## **7. Exclusion of Development Support at the Village Level**

Since the transfer of external resources to the local level is a main component of the operations of development interventions, an important question is how should they be channelled so that externally imposed selection criteria are respected? Most projects impose certain beneficiary selection criteria that are based on individual characteristics that in practice are often imperfectly observable. Most characteristics such as income, housing conditions and even nutritional status of children may be strategically misrepresented or even changed (Sen, 1995; De Herdt, 2000) to respond to the intervention's selection criteria. This makes that selection criteria – if any – need to be assessed locally. However, assessing local characteristics is costly for external personnel.

Local intermediary persons have informational advantages that can improve the targeting of the external intervention. However, it is not guaranteed that the use of local intermediaries will lead to better targeting. Local intermediaries may use other selection criteria since the access to external assistance may become an additional crucial component in the multi-stranded relations they maintain with community members and this may lead them to face incentives that do not coincide with the interests of the external intervention. To improve targeting new targeting mechanisms have been designed in recent years based on self-selection (e.g. food for work programs) and conditional transfers (e.g. food for education programs) (Conning & Kevane, 2002; Ravallion, 2003). However, also these new targeting mechanisms are influenced by local intermediation. Even when a development program explicitly evades local leaders, still spontaneous, local intermediation by peers exerts a large influence on the perceptions and the strategies of local agents.

In this section we study the level of exclusion of the totality of resources that the multiple external interventions channel to the local level and how local structural variables (including local intermediation) influence this exclusion. When studying the totality of external development interventions it

is impossible to use an aggregate goodness-of-fit indicator of targeting since each intervention uses its own targeting criteria. However, by focusing on the aggregate picture we can look for structural variables that have a general effect on the exclusion or inclusion of certain groups, while we can control for the composition of the aggregate development support - and their inherent selection criteria - to study its importance.

To measure the exclusion from the totality of external resources we use the proportion of households without any access to external development support (EXT\_EXCL). As we are interested in the exclusion of the poor (see discussion before in section 2d) we apply a poverty weight to each household, with poorer households having a higher weight in the index. For this poverty weight we use the poverty indicator used in section 4.

A first set of variables that we expect to exert a determinant influence on the local distribution of external resources is local social capital. We understand social capital as the presence and quality of *informal* networks. In accordance with the arguments of Krishna (2001) we believe that informal networks are more relevant in Nicaraguan rural communities than *formal* organisational structures<sup>10</sup>. As to social capital we identify two types that influence the distribution of development support but each in a specific way. We differentiate between bonding social capital, which refers to close relations with family, friends and neighbours, and *bridging* social capital, which refers to relations between people of the same community that transcend the existing community cleavages (Woolcock, 2001).

As to bonding social capital we expect it to influence beneficiary selection by means of three mechanisms. First, local brokers are leaders who have their clientele, which consists of poor people that are highly dependant on favours of their patron-leader. In table 3 we have seen that the poorer sectors make relatively more use of local brokerage. That is why we expect the use of local brokerage, measured by the percentage of all locally intermediated relations that are intermediated by brokers (BROK\_INT), to reduce the exclusion of the poor.

However, there is also a limitation as to the use of local brokerage. The networks around local brokers have a limited scope, which makes that local intermediaries have limited capacity and interest to direct the transfer of external resources to persons outside of their social networks. This has several effects. First, we expect that the more centralised is local brokerage (CENT\_BROK), the higher the exclusion of the poor. Second, irrespective of the centralism of local brokerage, the fact that local brokers have limited social networks makes that the more projects are working in the community (EXT\_NUM), the larger becomes the exclusion of external development support. This is similar to the conclusion of Galasso and Ravallion (2001), who found that within-village targeting improves with program-size. We attribute this effect to the fact that the access to outside interventions is significantly

<sup>10</sup> The density of formal organisation is not an appropriate indicator of social capital as this is highly dependant on the presence of external agencies. Local people create formal organisations on demand of external actors, but after the withdrawal of these external actors formal organisations quickly disintegrate.

facilitated for (groups of) persons with certain skills, such as their mobilising capacity and their knowledge and strategic use of the existing development discourses in order to attract and convince outside interventions. However, these skills can only be acquired in the interaction with these outside interventions. This makes that previous experience with outside projects substantially increases the probability to be reached by another project, so that (new) projects become concentrated in the same networks. At the same time in each community the same groups remain excluded from external interventions independently of the amount of projects that are working in the community, which highlights the structural problems of local social exclusion. In such a situation increasing the amount of projects increases the exclusion of external development support. In contrast, concentrating resources in few projects forces local brokers to look for people outside of their networks.

As to bridging social capital, measured by community unity (UNIT\_COM), we expect it to reduce substantially the exclusion from external resources. Local people who are embedded in social networks that transcend the existing social cleavages within the community take account of more people for possible selection as beneficiaries of the external interventions. We assessed this type of social capital by measuring the perceptions on networks of mutual support and collective action. The habitants were asked to attribute subjective ratings to three statements on these dimensions (with 1 = agreement with the statement in all circumstances, 0.5 = agreement in certain circumstances, disagreement in other, 0 = disagreement in all circumstances) and the overall mean was used as index of community unity (see annex 3), UNIT\_COM. Another variable we will include to measure bridging social capital is the percentage of people with personal problems with other people of the same community, PROBL\_COM.

Another important socio-economic variable that we expect to exert a substantial influence on the beneficiary selection of many development interventions is economic inequality. Galasso and Ravallion (2001) analysed its effect for one specific program, the Bangladesh's Food-for-Education Program, and observed a positive correlation with the exclusion of the poor. We expect to confirm this result for our cross section of projects.

We are especially interested in the inequality of land ownership, which we measure by the village-level standard deviation of land property. Land access is an indispensable means of survival in Nicaraguan rural communities. When differentiating between the two most important agro-socio-economic regions where the survey was realised, i.e. the Pacific and the Interior region, we see that land property is especially important in the less densely populated and less developed Interior region where land is the most important resource. In contrast, in the more developed Pacific region other resources can be important as well. That is why we multiplied this variable with a dummy that indicates the Pacific/Interior region (with 1 = Pacific region and 2 = Interior region), obtaining LAND\_INEQ.

Besides an important means of survival land property is often a determinant source of local power, also within the local arenas around external development support. A large part of the rural development support reaches especially land-holding households, while land-poor households are relatively less covered. We expect the exclusion of the poor to be higher in communities with a higher land inequality and this for two reasons. First, charity projects give a large voice to local powerful actors. As the (land-)poor are weakly represented by local political actors, this limits drastically their chances to receive external economic resources. Second, some projects openly prefer the economically stronger households, who have a more privileged access to land resources. For the more risk-averse market-oriented projects these households are less risky and, because of scale economies, cheaper to attend. At the same time the smaller and more risk-averse households are more reluctant to enter into a risky contractual relation with these market-oriented projects. These mechanisms make that external development support in economically unequal communities does not succeed in reducing local poverty, but instead by reaching non-poor sectors reconfirms or even increases economic inequality.

To study the effect of the selection criteria imposed by external interventions we included the market-orientedness of external interventions (EXT\_MARKET) in the model. The contribution of EXT\_MARKET can be divided in two effects, each working in the opposite direction. First, for the reasons indicated in the previous paragraph micro-finance projects and other market-oriented projects face large difficulties to reach the poor. Second, donations are more prone to rent-capture by local elites.

We also expect that in communities with higher mean education levels (EDUC\_2), the exclusion of external resources will be lower. In these communities the difficult communication between local people and external actors, due to the large differences between both life-worlds, will be somewhat smaller, reducing exclusion and auto-exclusion. Moreover, the poor will have more capacity to participate or to be represented within the local political arenas around development interventions.

Galasso and Ravallion (2001) also found that more isolated villages present higher difficulties for the poor to establish contact with a development intervention. The connectedness with urban centres, where development interventions have their offices will be measured by URB\_TRAV, the natural logarithm of the 5 percent trimmed mean of the frequency to travel to the nearest urban centre (in times per month).

We also have to control for the presence of development support, measured by the village mean of the number of relations per household with external interventions (EXT\_REL). We expect the exclusion of the poor from external development support to decrease with increasing presence of development support. However, since a lot of variables influence both the presence of development support and the local distribution of this support, we will



simultaneously estimate an equation that explains the presence of development support.

We expect the presence of development support to increase with a higher number of development projects, lower average education levels (EDUC\_2) and higher community unity (UNIT\_COM). The influence of the latter variable indicates that external interventions prefer the more united villages, which have a higher collective action capacity and are thus more comfortable working areas. The presence of conflicts between community members (CONFL\_COM), which results uncorrelated with the community capacity of collective action, can be concealed towards the outside world to increase the probability of future cooperation with external actors and thus is not expected to influence the attraction of external development support.

Villages that suffered more severe damage caused by the devastating hurricane Mitch in October 1998 are expected to have received substantially more development support. To measure the damage we created an index equal to the village mean of the sum of three dummies, indicating damage to crops, damage to productive infrastructure and damage to housing infrastructure (MITCH). Also the villages with a higher past presence of agrarian reform continue to benefit from the remaining local organisational structures that still attract “socialist” non-governmental development organisations. Finally we expect the presence of development support to be lower in villages in the less densely populated and less accessible, but also poorer interior region. For this we created a dummy (PAC\_INT), with 1 for villages in the Pacific region and 2 for villages in the Interior region.

In table 7 we observe the results of a regression model of a system of simultaneous equations that explains the exclusion of external development support, the amount of locally channelled resources, the centralism of local brokerage and the proportion of local brokerage within local intermediation. The last two equations in the model are the same as we used in previous section.

As to the regression assumptions we tested for them after applying OLS to each of the individual equations. Heteroskedasticity is not present as indicated by the chi square tests. Visual examination of the partial regression plots of the individual equations confirms the absence of normality and linearity violations, while univariate normality is also confirmed in the table of descriptive statistics in the annex. Multicollinearity problems are limited as all tolerance values are above 0.10.

In the regression model we observe that channelling more resources reduces the exclusion of the poor. However, taking account of efficiency – we cannot unlimitedly increase the channelled resources – we have to concentrate on the other explanatory variables. One of the most important of these explanatory variables is the structure of local social networks. The regres-

sion results confirm that the exclusion of locally distributed external development support is lower in villages with higher levels of community unity (UNIT\_COM), where local intermediation is more realized by local brokers (BROK\_INT) or where local brokerage is less centralized (CENT\_BROK). The latter is the case in agrarian reform villages and where a lot of resources are channelled, as indicated by the third equation in the model.

As expected land inequality (LAND\_INEQ) increases the exclusion of external resources. As to URB\_TRAV, we obtained an opposite sign to what expected. A higher village mean of the frequency of visits to the nearest urban centre increases the exclusion of the poor. More visits to urban centres makes that a lot of people spend time outside of their community. This hinders a smooth circulation of local information and reduces social control on what happens within the community, including the local distribution of externally provided private goods.

By adding this final piece of analysis to our previous analyses on the determinants of local legitimacy of local brokers and the structure of local brokerage (respectively in sections 5 and 6), we are able to address the questions as to how and to which extent external interventions can steer local intermediation, in an endeavour to change local political structures in favour of the poor. Now it is time to put these three pieces together and to derive conclusions and policy recommendations.

**Table 7. Explanatory model on the exclusion of external development support (3SLS)**

Equations	EXT_EXCL				EXT_REL				CENT_BROK				BROK_INT		
	Coef.a	T	Sig.	Toler. b	Coef.a	T	Sig.	Toler. b	Coef.a	T	Sig.	Toler. b	Coef.a	T	Sig.
MITCH					0.384	2.27	.025**	0.633							
AGR_REF					0.922	3.18	.002***	0.674	-0.353	-2.75	.007***	0.838			
EDUC_2	-0.026	-1.18	.242	0.145	-0.184	-2.38	.019**	0.284					-0.126	-2.70	.008***
CONFL_COM	0.066	0.62	.535	0.744	0.452	0.93	.354	0.874					-0.605	-2.34	.021**
UNIT_COM	-0.579	-3.98	.000***	0.774	1.425	2.52	.013**	0.730							
PAC_INT	-0.089	-2.04	.044**	0.185	-0.314	-2.02	.047**	0.317							
EXT_NUM	0.007	1.36	.178	0.572	0.038	2.01	.047**	0.658							
CENT_BROK	0.471	2.41	.018**	0.578											
BROK_INT	-0.284	-3.01	.003***	0.403											
LAND_INEQ	0.032	1.90	.060*	0.233											
URB_TRAV	0.029	1.76	.082*	0.435											
EXT_MARKET	-0.045	-1.05	.298	0.475									-0.457	-5.48	.000***
EXT_REL	-0.224	-2.90	.005***	0.386					-0.133	-2.07	.041**	0.838			
YEAR_COM													71E-5	0.18	.858
ISOL_INEQ													0.032	3.20	.002***
POV_MUN													0.093	1.75	.083*
Constant	0.606	3.14	.002***		-0.773	-1.09	.280		0.795	17.20	.000***		1.252	4.71	.000***
N	33				33				33				33		
R2	0.785				0.607				0.372				0.627		
F-ratio	22.13				8.10				10.79				9.95		
F-probability	0.000				0.000				0.000				0.000		
Prob > chi2 c	.610				.682				.603				.160		

<sup>a</sup> Non-standardized coefficients

<sup>b</sup> Tolerance values after applying OLS to each equation separately

<sup>c</sup> Breusch-Pagan / Cook-Weisberg test for heteroskedasticity, after applying OLS to each equation separately

## 8. Conclusions and Policy Recommendations

This paper has provided some elements that are needed to address the important question of how external support should be articulated with the local level to contribute to a sustainable poverty reduction. A general starting point of the paper is that local arenas substantially influence the functioning of development interventions. At the same time these interventions cannot control the actions local people undertake in the local arenas. That is why we have looked for an explanatory model of the structure of these arenas to understand how and to which extent development interventions can influence them. We have also studied how and to which extent these arenas influence the exclusion of external development support. Local people struggle to capture part of the economic resources that are channelled by external actors and it is all but evident that the poorer sectors have equal access to external development support. Sustainable poverty reduction, however, requires the opening of local political structures in favour of the poor who are politically excluded.

An important dimension of these local arenas is the way the relations between external interventions and local beneficiaries are established, and especially what local intermediation mechanisms are used. Both external interventions and local people rely on local pivotal persons who act as an interface.

These local persons can execute a representative function for local people or can be only accidental intermediaries. In the former case they are real “brokers” that intermediate between both worlds and are expected to defend the interests of both the external intervention and local people. They are in an ambivalent position and pay attention to maintain their legitimacy towards both parties. Empirical analysis has shown that their legitimacy (towards local people) is higher in poorer regions, while it is lower in communities where brokers intermediate proportionally more resources. Their local legitimacy is also lower in agrarian reform regions.

An important aspect of local intermediation consists of the use level of these local brokers. It seems that for both local and external actors there exists an optimal level of the use of local brokerage. On the one hand both external interventions and local people need local brokers. For local people local brokers increase the community’s capacity to attract external resources and they channel resources to the poorer sectors more than other local intermediation mechanisms do. For external actors local brokers can substantially facilitate their operations as they have better local information, they have the capacity to contribute to the analysis of local problems, and they have the ability to convoke and convince local people.

On the other hand, the use of local brokerage may not be too high. The more use is made of local brokerage the lower becomes their local legitimacy. At first sight this seems somewhat paradoxical: a higher use of local brokers reduces the exclusion of the poor from external resources, but at the same time it also reduces local support for local brokers. Local brokers are highly needed, as without them the poor would be more excluded. However, local brokers are also more visible than other intermediation mechanisms (such as local intermediation by peers non-leaders or other occasional contacts) and can be easily marked to be responsible for possible unfair distributions. In poor rural villages the local distribution of external resources is a very delicate matter. Local brokers, however, generally favour their own networks, which have a limited scope. This makes that the more access to development support is intermediated by local brokers, the more people feel unfairly treated by some of these brokers.

Also for external interventions, local brokerage may not be too high. The higher the use of local brokerage the higher the power of local brokers, and it may become difficult for external interventions to enforce them to behave in accordance with the interventions’ agendas. Especially for market-oriented projects autonomy of local leadership is important since this may have immediate effects on the financial results of their operations. Local brokers often maintain a lot of patron-client relations, which are characterised by rules of loyalty and paternalistic protection. These rules, however, cannot easily be made compatible with the rules of a sustainable credit system, including the need to emphasise objective individual selection procedures and repayment under all conditions. Market-oriented programs are also more prudent with transferring responsibilities to the local level and design special mecha-

nisms to improve beneficiary selection and contract compliance. One of such mechanisms is the common practice of conditional renewing of the loans by micro-finance projects to enforce repayment by the individual beneficiaries.

In a similar way, Platteau and Gaspart (2003) argue in favour of sequential disbursements to discipline local brokers from the outside. Another method can be designed to discipline local brokers from within the community, such as for instance an adequate management of information transmission. Many people obtain knowledge of the existence of a project by means of a local broker. The people that do not know of the presence of external interventions (or the access conditions) are automatically excluded. To the extent that the information on the intervention arrives at highly deprived persons that do not form part of the networks around the local intermediaries of a particular project (for instance by using local intermediation structures that exist around other projects) these persons obtain the means to pressurise local brokers to take account of them. This brings us to the point of the concentration of local brokerage, which may not be too high, as it increases the exclusion of development resources.

One of the key questions then becomes how external interventions can optimise both the use level and the concentration level of local brokerage. To be able to do so external interventions should at least realise permanent local appraisals in the communities with appropriate attention to the social embeddedness of each possible local broker. To take corrective measures, external actors - if necessary - could split up resources and channel them towards different and independent local brokers, and preferably the brokers with most ample local networks. For this, in addition to identifying local brokers it may be necessary to train new agents where it is difficult to find local intermediaries with sufficient capacity. The principal aim of this political entrepreneurship is the democratisation of the coverage of local brokerage, i.e. obtaining a local brokerage that represents the largest possible and poorest part of the local population.

All types of projects that are honest with their objectives of reducing poverty and capability inequalities should make efforts to democratise local arenas. The feasibility of an intermediation structure, however, is not completely independent of local structures. In some environments it is more difficult to implement a certain type of intermediation structure than in other environments. This means also that the democratisation of local arenas can face serious local resistance. We have seen that in agrarian reform villages local brokerage has become less centralised but it also faces lower local legitimacy. The old leaders had to share local power with new leaders, so that local brokerage became less monopolised. This increased rivalry between local brokers and social cleavages in the community, reducing the local legitimacy of local brokerage. This indicates that it is all but evident to change the persistent 'caudillo' structures, which are a product of the colonial inheritance and up to day continue to influence economic and political exchange in Latin America (North, 1990).

Besides these cultural constraints, the articulation of external support with the local level is also constrained by the stages of economic development. Community imperfections substantially increase with economic development (Platteau & Abraham, 2002). Our data confirm this as they show that communities in more developed regions have significantly lower levels of community unity (partial correlation: 0.384; sig. .030\*\*) and less legitimacy of local leadership (partial correlation: 0.684; sig. .000\*\*\*).

There are also important differences between development programs as to their capacity to democratise local arenas. Charity-oriented interventions often create local committees, which they expect to guarantee local representation and accountability. Local social structures in the Nicaraguan rural areas are, however, seldom democratic. As charity-oriented projects do not intervene in the formation of local committees, these committees tend to replicate local power structures. This makes that charity-oriented projects are susceptible to be used by local brokers in their search for local legitimisation of their power and thus to confirm existing power relations and exclusion processes.

Market-oriented projects are less vulnerable because they diversify local intermediation mechanisms. Although they often do not have the explicit intention to change local power structures - they try to bypass local brokers to safeguard a good selection of beneficiaries and a high repayment of their credit loans - we expect them to offer better perspectives for improving *local power structures* than charity-oriented development projects. At the same time, they often channel more resources, so that they have better perspectives for local economic change. However, the direction of this economic change and thus its consequences for local power distribution and social exclusion depends a lot on the outreach of the intervention. This brings us to a revision of the traditional argument in favour of targeting. Traditionally, the analysis of local political structures has been limited to its effect on the success of targeting as a means to reach poorer sectors. However, if we consider local political change to be an end of targeting at the same level of poverty reduction and income inequality, a renewed interest in targeting may be warranted.

The transfer of development resources to the local level can also have other types of side effects on local society. We believe in particular that charity-oriented programs that use an anti-poverty discourse and pose few access restrictions entail the danger of corroding community unity. In countries where a large part of the population considers itself to be poor, most people expect having a right of access to the development support. Locally channelled resources are, however, generally limited. That is why it is impossible to satisfy all needs, so that conflicts easily occur. These arguments are similar to Laurent (2001) who observed how the arrival of external development support and the rise of local "big men" have created a permanent uncertainty within a local village in Burkina Faso. Local co-financing (in whichever form; e.g. food-for-work programs) may reduce this tension, since it may lower the incentives to engagement, even leading to complete self-exclusion of certain actors.

A final remark is required on the behavioural rules that constrain human interaction. Norms of collective action, norms of distributive justice, behavioural norms that constrain the actions of local leaders and the externally imposed contract rules of the intervention are all important in our story. The extent to which local interactions respect and (re)-create these rules and norms can have a determinant influence on beneficiary selection. Behavioural norms are of determinant importance for the structure and the outcome of interactions between local people and across the local-external divide. At the same time these behavioural norms are also the result of the cumulative outcome of these interactions. We are aware that the present situation depends on previous interactions between people, thus history matters. Although we did not enter into the dynamics and the evolution of structure and norms (we limited the analysis to the present situation of structural variables that we expect to have influenced on past interactions), we think this warrants more attention. Experimental economics and multi-agent modelling are promising techniques that permit to take due account of adaptive behaviour (learning, norms, customs, etc.), bounded rationality and bargaining and thus have the potential to improve the assessment of changes in local social structures and norms and how local and external actors are expected to influence them.

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## Annex:

### 1. Descriptive statistics and normality test (variables are ordered as to their appearance in the paper)

33 observations			Descriptives				Shapiro-Francia Normality test	
			Min	Max	Mean	S.D.	Z	Sig.
1	LEAD_LEG	Index of local legitimacy of local leadership (see annex 2)	0.41	0.88	0.68	0.13	0.625	.266
2	POV_MUN	Poverty level in the municipality that covers the village, with 1 = low poverty, 2 = medium poverty and 3 = high poverty	1.00	3.00	2.18	0.68	-27.648	1.000
3	BROK_REL	The squared root of the proportion of relations with projects that was intermediated by brokers	0.33	0.77	0.54	0.12	0.754	.225
4	AGR_REF	The squared root of the percentage of households that received land by agrarian reform	0.00	0.68	0.34	0.19	-0.771	.780
5	CENT_BROK	The squared root of the sum of the squared shares (Herfindahl index) of the different brokers within the total amount of relations intermediated by brokers	0.39	1.00	0.66	0.16	0.951	.171
6	EDUC_1	The village mean of the household education level (= mean education level of all household members >= 18 years), excluding the households that occupy a leader position	1.32	5.76	3.01	1.08	0.288	.387
7	BROK_INT	The squared proportion of local intermediations of relations with projects that was realised by brokers	0.10	1.00	0.57	0.24	-0.466	.679
8	EDUC_2	Village mean education level of all persons >= 18 years	1.46	5.76	3.11	1.10	0.187	.426
9	ISOL_INEQ	Standard deviation of frequency to travel to nearest urban centre	1.08	12.49	6.02	3.41	0.953	.170
10	YEAR_COM	The 5 percent trimmed village mean of the number of years living in the community	4.00	42.98	24.79	10.27	0.123	.451
11	CONFL_COM	The squared root of the percentage of households that ever had a problem with someone of the community	0.09	0.56	0.36	0.10	0.511	.305
12	EXT_MARKET	Aggregate level of market-orientedness of the relations with interventions	0.33	1.74	1.06	0.32	-0.910	.819
13	EXT_REL	The natural logarithm of the village mean of the number of relations with projects	-0.79	0.94	0.13	0.44	-0.190	.575
14	EXT_EXCL	Proportion of households excluded of all development resources (after applying poverty weight)	0.11	0.70	0.38	0.17	-0.402	.656
15	MITCH	Index of village average damage caused by hurricane Mitch, equal to the village mean of the sum of three dummies, indicating damage to crops, damage to productive infrastructure and damage to housing infrastructure	0.46	1.65	1.13	0.33	-0.782	.783
16	UNIT_COM	Index of community unity (see annex 3)	0.29	0.67	0.50	0.09	-1.023	.847
17	PAC_INT	Dummy with 1 for villages in the Pacific region and 2 for villages in the Interior region	1.00	2.00	1.52	0.51	-117.708	1.000
18	EXT_NUM	Number of development interventions present in the village	3.00	14.00	8.33	2.81	-0.895	.815
19	LAND_INEQ	The natural logarithm of the multiplication between the standard deviation of land property and PAC_INT	0.67	5.19	3.18	1.23	-0.000	.501
20	URB_TRAV	The natural logarithm of the 5 percent trimmed mean of the frequency to travel to nearest urban centre (in times per month)	-0.26	2.71	1.00	0.77	0.964	.168

## 2. Index of Local Legitimacy of Local Leadership

### Correlation Matrix

	Perception on capacity	Perception on fairness	Perception on unselfishness
Perception on capacity	1,000	0,833 (.000)	0,701 (.000)
Perception on fairness	0,833 (.000)	1,000	0,829 (.000)
Perception on unselfishness	0,701 (.000)	0,829 (.000)	1,000

33 observations

Note: Significance levels between parentheses

## 3. Community Perceptions Index

Perception 1: *If someone in the community has economic problems people help this person.*

Perception 2: *This community is very united.*

Perception 3: *In case of a crisis or an emergency the community comes together to solve the problem.*

### Correlation Matrix

	Perception 1	Perception 2	Perception 3
Perception 1	1,000	0,483 (.004)	0,689 (.000)
Perception 2	0,483 (.004)	1,000	0,416 (.016)
Perception 3	0,689 (.000)	0,416 (.016)	1,000

33 observations

Note: Significance levels between parentheses

