The meaning of poverty matters: trade-offs in poverty reduction programmes

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Abstract

Poverty has many different dimensions, yet few poverty reduction policies take an integrated approach to multidimensional poverty. Many continue to focus predominantly on income and employment issues whereas others address different aspects of poverty separately. In this paper, we illustrate that while such policies may be effective at reaching their objectives individually, they may clash with other dimensions of poverty targeted by other policies. To achieve our aims, we employ a case from rural Guatemala, where a series of development policies have pursued different targets, based on different narratives of poverty reduction. We apply a multidimensional assessment framework and analyze the household typologies of three rural communities to address how these typologies perform in relation to the contrasting goals of different rural-development policies. While for some household types classic indicators such as monetary income and employment did increase, a series of further issues targeted by other policies, such as self-sufficiency, disposable time for community activities, or access to land, worsened. Hence, the problem of focusing predominantly on one dimension is not only that it provides an incomplete picture: the main problem is rather that it can obscure the creation of new types of poverty.

Keywords: Q'eqchi'; Guatemala; multidimensional poverty; rural development

1. Introduction

Poverty has been increasingly conceptualized as a multidimensional phenomenon that involves deprivation in many different dimensions of life. Well-known examples of multidimensional approaches are Sen's capability approach (Sen, 1999) and Max-Neef's Human Scale Development approach that underlines the existence of different *poverties* (Max-Neef et al., 1989). However, when it comes to development practice, poverty-reduction programs and projects have been often dominated by income and employment approaches (Sumner 2007, Konkel 2014).

Several empirical studies have demonstrated the importance of the use of different definitions of poverty in poverty-reduction efforts (e.g., Caizhen, 2010; Haveman and Wolff, 2005; Laderchi et al., 2003; Rojas, 2008; Scheidel, 2016). According to these authors, the approach used to define and measure poverty determines the individuals and groups which will be categorized as poor, and the policies aimed at poverty eradication. For instance, the OECD (2006) proposes fostering agricultural development to reduce poverty through four different lines of approach: by increasing farm incomes, by creating employment on farms, by promoting the rural non-farming economy and by reducing prices of staple foods. However, the question remains as to how far such policies can bring about positive change across other, non-economic dimensions of poverty.

This paper demonstrates that the pre-analytical adoption of different narratives on poverty leads to the design and implementation of different policies for poverty alleviation. This pre-analytical choice also leads to non-equivalent assessments of the performance of rural households in terms of poverty reduction. In other words, this paper provides further empirical evidence that the choice of adopting certain poverty-reduction narratives is incredibly important to poverty studies, policies and the poor. To illustrate this, we carry out a case study in Guatemala, in which we (i) identify narratives about poverty in two rural-development policies; (ii) identify the pertinent attributes needed to describe and represent poverty within these different narratives.; and (iii) carry out an integrated assessment of households involved in different rural-development policies from different perspectives (*i.e.*, adopting a different coupling of narratives and attributes).

To achieve our aims, we conduct a multidimensional analysis of different rural Q'eqchi' communities located in the Polochic Valley, which is characterized by communities who exhibit various degrees of market participation.

We illustrate empirically that trade-offs between different poverty dimensions become evident. Analogous to the distinction of *weak and strong sustainability* (Daly, 1990) we discuss aspects of *weak and strong poverty reduction* (Scheidel, 2013). While policies and programs focusing too narrowly on monetary income and employment may bring related improvements, they likewise may force fundamental structural changes in the cultural and productive system of rural Q'eqchi' communities that cannot be substituted or compensated by enhanced incomes. Hence, a central problem of focusing predominantly on one dimension of poverty reduction, such as monetary income generation, is not only that it provides an incomplete picture of the situation of the poor, but rather that it may obscure the creation of other types of poverties in the lives of rural dwellers.

At this point it is interesting to shed light on the fact that, despite the use of multi-dimensional approaches to measure poverty in in Guatemala[1], the predominant approaches to poverty reduction observed in rural-development policies and programs in Guatemala are aimed at generating formal employment and monetary income. This article illustrates how such policies can have adverse impacts on other dimensions of the lives in rural communities.

The article proceeds as follows: Section 2 introduces our theoretical and methodological framework, which provides the basis on which the multidimensional assessment is conducted. Section 3 provides an overview of Guatemala's rural-development policies and the case study area. Section 4 describes the multidimensional assessment of the three communities characterized by different degrees of market participation, and discusses how different trade-offs across various poverty dimensions are produced and how these relate to structural changes in the peasant economy and cosmovision. Section 5 discusses the implications that different poverty-reduction narratives have for development policy and practice, and section 6 concludes.

2. Concepts and Methods

2.1. Multidimensional poverty: implications for rural studies and policies

Poverty may have different meanings for different social groups. The choice of different poverty definitions and approaches to measuring poverty determines who is considered poor, as well as the development of poverty-reduction efforts (Caizhen 2010; Haveman & Wolff 2005; Laderchi et al., 2003; Rojas 2008; Scheidel 2013).

From an epistemological perspective, the interpretation of complex issues, such as poverty reduction in rural households and communities, is undertaken through a set of narratives, expectations and goals delimiting the problem at hand (*i.e.,* the issue definition). In other words, the pre-analytical adoption of different narratives about poverty leads to non-equivalent representations of the system under analysis. By pre-analytical choice we refer to the decisions about the relevant attributes used to describe and represent a system, which are made before data collection and analysis. These decisions determine the scale and methods of observation, and consequently the results of the analysis (Kovacic and Giampietro, 2015b).

A rural household can be described and represented using different attributes and indicators (e.g., in terms of income per capita, in terms of literacy, in terms of access to healthcare or in terms of access to productive land), and the same household can be considered poor from one perspective, but not poor from a different perspective. As a result, choosing different narratives of poverty leads to different assessments of the performance of rural households and communities regarding poverty reduction. It also leads us to different conclusions in terms of the level of poverty in households and communities, as well as the type of poverty alleviation policies that are designed and implemented (Laderchi et al., 2003).

[1] For instance, the National Living Conditions Survey (ENCOVI) carried out by the National Stadistical Institute (INE) uses indicators that go beyond income; such as, time use, access to education or health services

Furthermore, if we consider poverty reduction as an issue of long-term sustainability of livelihoods, the distinction between weak and strong sustainability becomes relevant. According to Daly (1990), the paradigm of weak sustainability is based on assumptions on the substitutability of different types of capital; these imply that maintaining the total stock of capital, no matter how it is composed, is enough for sustainability. Strong sustainability is based on the assumption that different types of capital cannot be substituted, but rather are complementary. As such they must be maintained independently.

Along these lines it is also possible to distinguish between weak and strong poverty reduction (Scheidel, 2013). Weak poverty reduction assumes that improvements in one dimension of well-being can compensate for deprivation in other dimensions. For instance, food security may be attained by increasing income (a flow) through off-farm jobs that allow people to buy food, which in turn can compensate for the loss of land (a fund, or asset) used to produce food. However, there are situations in which improvements in one dimension cannot negate the deterioration in other poverty dimensions. For instance, an increase in (short-term) flows (e.g., money, or food) to enhance deprived consumption cannot always compensate or serve as a substitute for the loss of underlying funds (e.g., fertile land, healthy labor conditions) that allow for the production of such flows in the long-term. Hence, strong poverty reduction needs to be attentive to such situations where trade-offs are not desirable, and must focus on increasing access to and control over the productive funds that enable producing flows and living a dignified life in the long-term (for further theoretical discussion, see Scheidel, 2013).

The objective of this article is to demonstrate the existence of relevant trade-offs and related aspects of weak and strong poverty reduction, by showing the consequences of adopting different poverty narratives in the classification of households as poor, and in the design and implementation of poverty-alleviation policies. To attain this objective, we performed the following steps:

1. Reviewed Guatemalan rural-development policies to identify different narratives behind those policies and programs.
2. Chose the policies with extreme narratives underlying their understanding of poverty.
3. Defined attributes relevant for each narrative for describing and representing poverty.
4. Defined different indicators to measure and represent attributes.
5. Evaluated these indicators for the households of the case study.

In the following sections, we present the main aspects of each of these steps.

2.2. Case study approach

The success of poverty-alleviation programs and policies is highly dependent on the specific context in which they are implemented. Therefore, this study is based on the empirical analysis of a case study; such an analysis allows us to understand this issue (*i.e*., poverty reduction) and perform an in-depth analysis of a real context, rather than simply allowing us to look for statistical generalizations (Ford et al., 2010; Yin 2003). The case study approach is also appropriate for analyzing complex problems and systems, in which the main research questions start from a HOW (Robinson 2008). Our questions are: How does the pre-analytical choice of a given narrative on poverty determine policy design and implementation? And, how does the

pre-analytical choice of a given narrative on poverty determine both the households considered to be poor and the policies aimed at poverty eradication?

2.3. Defining narratives, attributes and indicators

Narratives are understood here as stories that identify the relations of causality used to structure the perception of the observed system (Magrini 1995, Allen and Giampietro 2006; Kovacic and Giampietro 2015a). In this way, narratives define the relevant attributes to be considered when dealing with poverty-eradication policies.

In this article, we analyze in particular the importance of the pre-analytical choice of narratives behind the definition of poverty, and the problems inherent in structuring the national strategies for poverty alleviation. To do so, we first analyze the strategies, policies and programs dealing with rural development and rural poverty eradication in Guatemala. Then, we chose two policy documents based on purposive sampling: a non-probabilistic sampling of individuals with some characteristics relevant to addressing the research questions. In this case, we chose two extreme policies that define poverty in very different ways, two clear-cut instances of the studied phenomenon (Given, 2008). These are the Competitiveness Agenda (Government Agreement No. 306-2004) and the National Policy of Integrated Rural Development (Government Agreement No. 196-2009). In this way, we aim to contrast the official definition of the issue and the problem of structuring poverty (Competitiveness Agenda) against the narratives and formal representation used by social and peasant movements (Integrated Rural Development).

Secondly, we analyze the chosen documents according to the following issues: i) objective of the policy, ii) approach to rural development, iii) actors prioritized by the policy, iv) approach to agriculture, v) food, vi) land and vii) employment. In this way, we identified the main attributes used to perceive and describe rural poverty. Attributes are the essential elements used within the specific narrative to describe a system. For example, the assertion that "rural areas present low employment rates that are one of the main causes of poverty" contains a value judgment, which is used to identify "rural employment" as a relevant attribute within this sentence.

Thirdly, we have defined formal categories to map these attributes and permit the measurement of the state of the system according to this attribute: *i.e.,* the definition of indicators used to perform a quantitative characterization of the system under study. Indicators are thus a means of representing an attribute of the system – an image of an attribute, which is formalized in terms of a specific measurement process (Galopin, 1997). For example, the number of people employed in agriculture can be used as the indicator for the attribute "rural employment."

In order to define and quantify indicators, we used the accounting framework of the Multi-Scale Integrated Assessment of Societal and Ecosystem Metabolism (MuSIASEM) approach (Giampietro et al., 2009). The MuSIASEM approach uses the flow-fund model (Georgescu-Roegen, 1971), which distinguishes between *fund* elements as structural components of a system, and *flow* elements that are processed by the system and exchanged with its context. Fund elements analyzed in this study are human beings and Ricardian land, measured in human time and land-use surface respectively. Human time and land are not only the main production factors but are also important biophysical constraints for the production and reproduction of peasant households (Grunbuhel and Schandl, 2005). Analyzed flows are income, expenditures, and maize production and consumption.

Based on this approach, a large number of indicators have been developed for the analysis of households' metabolic pattern, which are described in detail further in Mingorria (2016). For the purpose of this article, a set of six indicators was combined to assess the performance of rural households in terms of poverty reduction in relation to the two different policies.

2.4. Data collection

Data were collected between 2009 and 2011 in three non-consecutive fieldwork periods, using a mixed methodological approach encompassing in-depth interviews and questionnaires (Huntington 2000). In the first period (March to June 2009), we conducted 12 semi-structured interviews with indigenous leaders, NGO members and representatives of peasant movements involved in the valley's land struggles. The aim of these interviews was to identify the main characteristics of the communities of the valley: their production systems, forms of organization and participation in policies and programs.

In the second period (July to November 2009), male and female leaders from the selected communities were interviewed. Interviews at community level were structured using five themes: (1) the main productive and reproductive activities of the households; (2) the calendar of agricultural seasons; (3) the traditional and formal rules affecting natural resource management; (4) the socio-environmental history of the communities; and (5) the main constraints on fulfilling their developmental needs and aspirations.

Interviews were undertaken to understand the socio-economic and environmental context in which households and communities behave. Also, the questionnaire for the land- and time-use survey was designed according to the information gathered in these interviews. Furthermore, we use the interviews to identify the main narratives regarding poverty alleviation and rural development from the point of view of communities.

Subsequently, during the data-analysis phase, we used the interviews to obtain detailed knowledge about the socio-economic context and the people's livelihoods, and this helped us to translate the attributes into indicators. Finally, the results and insights gained from our data analysis complemented the quantitative results of our surveys.

In the third period (May 2010 to February 2011), we conducted 10 intermittent field visits, each lasting 15 days, and deployed 196 questionnaires in the selected communities, with households being selected randomly in both settings. The questionnaires were previously tested in both communities and structured in five sections: (1) demographic structure; (2) land use; (3) income and income-generating activities; (4) household expenditure; and (5) the time use of individual household members. The basic unit of the time- and land-use survey was the household, since our observations confirmed that the household was the key institution of the Q'eqchi' communities where decision-making takes place (Grandia 2006). We interviewed both female (*N*=98) and male heads of household (*N*= 98), collecting information on all household members. Participant observations were used during the entire research process along with cross-checking and validating the surveys' approaches and emerging results.

2.5. Data analysis

Q'eqchi' households shape and are shaped by the community, and a mutual dependency between these two levels exists. On one level, households are the basic decision units for time- and land-allocation issues (Mingorría et al. 2014. See also Netting, 1995; Chapter 2). Also, the community imposes some constraints on the households, which then adjust their behavior to cope with a reduced degree of freedom. For example, when the community develops a collective project, the households are not completely free to decide how much time to allocate to these activities: there is a minimum requirement from the community. In most of these cases, the rest of the network (the community) is so strong that it is very difficult to undertake a significant restructuring of the community (Giampietro, 2003).

In this context, we consider the household to be the unit of analysis. It is worth noting that the households of a community do not all perform the same activities; nor do they have the same metabolic pattern. However, the characteristics of the community heavily influence the different production and reproduction strategies (the activities) of the households (Mingorría and Gamboa 2010, Mingorría et al. 2014). In order to simplify this complex reality, we base our analysis on households' typologies. According to Giampietro (2003), a *type* is a simplification of real entities, a representation based on expected relations between the components of the entity, which gives rise to an expected behavior. The characteristics of a *type* are always associated with the possibility of performing a given and expected function.

The definition of household typologies is achieved by means of a cluster analysis process. This clustering process starts with the selection of a set of variables used to classify the households. As mentioned previously, human time and agricultural land are the main production factors of the peasant economies in which productive capital is scarce. They also constitute the main constraints on the intensification of agrarian practices (*i.e*., on increasing yields by means of increasing the workload involved in agricultural activities). The selection of these preliminary variables is oriented by the objectives of the analysis and based upon the acquired knowledge of the communities and their contexts. In this case, we chose twenty-nine variables describing: i) the demographic structure of the households, ii) the agricultural system developed by the households (land use), and iii) participation in the labor and food market (see Mingorria et al., 2014).

A Principal Component Analysis (PCA) was performed in order to identify the factors behind the socio-economic differences among households. Subsequently, an agglomerative hierarchical cluster analysis (HCA) employing Euclidean distance and Ward's method was implemented. The HCA was performed using those factors obtained from the PCA with an eigenvalue higher than 1 (Kaiser criterion). The number of clusters (*i.e*., household typologies) was determined to serve the purposes of the analysis (Köbrich et al., 2003) and was based on the researchers' experience and the knowledge acquired through empirical observations (Garmendia and Gamboa, 2012). A non-parametric Kruskal–Wallis test followed by Dunn's multiple comparison tests were applied to test differences among the household types for each of the indicators considered.

2.6. Study area: the Polochic Valley

The Polochic Valley is located in the northeast of Guatemala in the Alta Verapaz and Izabal departments. Geographically, the area is bounded by the Sierra de Santa Cruz mountain range, the National Protected Areas of the Sierra de las Minas and Bocas of the Polochic.

We chose the Polochic case study as it is one of the Guatemalan regions with the highest rates of poverty (ENCOVI 2006). It is also a territory in which poverty reduction policies have been implemented by integrating the peasantry in the agribusiness market (Alonso-Fradejas et al 2012) and, at the same time, the indigenous communities have historically struggled to overcome poverty without renouncing their traditional ways of living (Mingorría et al 2014).

Approximately 220,000 people inhabit the valley and rely on subsistence agriculture (INE 2002). Of this population, 89% are indigenous Mayan Q'eqchi' and the rest are Mayan *Poq´omchi´* and *mestizos* (*i.e.,* people of Spanish and indigenous origin) (ENCOVI 2006).

Since the 1980s, the valley has experienced an increasing expansion of an agro-export model. At that time, coffee, cotton and banana were grown in large areas of land granted to German families from the liberal government of that time. Maya Q'eqchi' people were forced to migrate or become *mozos-colonos* (i.e., people who worked for the landowner in exchange for a small plot of land on which they could cultivate subsistence crops). Since then, the Q'eqchi' have claimed access to land, which has been ignored and often violently repressed (Grandia 2006). As of the early 2000s, coffee farms and the rearing of livestock were affected by the coffee crisis and a decrease in prices, respectively (Wagner 2001). Nowadays, most of the valley is dominated by sugarcane and oil palm plantations and less so by cattle farms (Solano and Solís 2010). Since 1998, the valley has been covered by 8,500 ha of cultivated oil palm plantations, representing almost three-quarters of the valley's most fertile land, and, since 2005, by more than 5,000 ha of sugarcane (Alonso-Fradejas et al., 2008; 2011; Mingorría and Gamboa 2010).

Throughout this time, the Q'eqchi' people have maintained moral economies[2] based on subsistence agriculture complemented by other sources of income (Grandia 2012). The majority of Q'eqchi' communities produce maize for subsistence (INE 2002), but they differ in terms of the degree and forms of market integration (Alonso-Fradejas et al., 2008, Mingorría and Gamboa 2010). The main income-generating activity in the mountain area is the cultivation of cardamom and coffee as traditional agro-export crops. The communities located in the valley produce and sell surplus maize, and the money generated from this accounts for an important part of their income; people may also work either for other farmers and/or on cattle ranches, and oil palm plantations (Molina-Loza et al., 2009; Ronzon and Till 2004).

For this study we selected four communities that represent different degrees and forms (individual and collective) of market participation promoted by policies oriented toward reducing poverty in the Polochic Valley: a) two communities located in the mountains that practice subsistence agriculture complemented by traditional export crops (cardamom)

[2] According to Grandia (2006), "after saving enough for family food security, farmers can easily sell leftover corn to middlemen and use the proceeds to buy their basic household necessities, like medicines, shoes, clothes, tools, and daily comestibles (sugar, oil, coffee)." This confirms that household security is prioritized over cash accumulation, following a "safety first" principle in terms of behavior.

cultivated collectively; b) one community located in the valley whose households produce maize and sell surplus in the market; and c) one community located in the valley whose members are waged labor in plantations.

3. Results

We now show how different household types within these communities perform in relation to the objectives of different poverty-reduction policies. To do so, we first describe the two most contrasting policies for poverty eradication and outline the set of related narratives, attributes and indicators that derives from these narratives for both policies. The indicators that we developed are then used to evaluate household performance of different household types in terms of poverty alleviation.

3.1. Narratives, attributes and indicators of two contrasting rural-development policies

As mentioned in the Methodology section, we chose two policies with contrasting narratives on poverty and poverty alleviation. These are the Competitiveness Agenda and the National Policy of Integrated Rural Development, as presented in Table 1.

Table 1. Main characteristics of the analyzed policies for poverty alleviation

	PNDRI **Government Agreement No. 196-2009** *Livelihood narrative*	**PRONACOM** **Government Agreement No. 306-2004** *Market narrative*
Objective	Overcome poverty, inequality, social and political marginalization	Improve the quality of life of the Guatemalan people and promote economic growth by means of fostering competitiveness
Rural Development	Advance toward a dignified and just life in economic, social, political, cultural, environmental and spiritual terms	Reduce the lack of employment and opportunities to generate income; improve the precarious labor conditions, access to credit and the productive and basic service infrastructures (drinkable water, electricity, etc.)
Priority sector	Indigenous or peasant communities with insufficient land or without land, and seasonal or permanent paid workers	The entire population, especially the rural poor
Agriculture	Improve efficiency and equity, diversify and promote the production of basic grains	Increase competitiveness by means of participating in national and international markets, facilitating access to credit and through public and private investment
Food	Food sovereignty (availability, access and consumption of food that is adequate in social and cultural terms)	Food security (availability, access and consumption of food)
Land	Transform the structure of land tenure and use, avoiding land concentration	Regulate access to and through market-led agrarian reform

Employment	Improve capabilities of the rural population in order to increase employment and the quality of jobs	Increase employment by means of promoting both participation in national and international markets, access to credit and public-private investment

Based on these policies, two main narratives have been identified that we call the *livelihood* and the *market* narratives. Both narratives aim to improve the quality of life of poor people. The former focuses on facilitating poor people's access to land by transforming the structure of land use and tenure. It further puts forward the concept of food sovereignty by promoting the ability of small peasants to produce culturally appropriate food by improving and diversifying production techniques. In contrast, the *market* narrative proposes participation in national and international markets, access to credit and the promotion of public-private investment as a means of creating jobs and incomes. In this way, it is argued that poor families can improve their quality of life and access to food and land.

We acknowledge that choosing these two policies, with the consequent identification of two narratives, may seem an oversimplification of a long and contentious debate around poverty conceptions and ways of measuring it. Guatemalan scholars have made important efforts in measuring, analyzing and understanding rural poverty in a multidimensional way (e.g. Romero and Zapil 2009, Romero 2015). However, choosing two policies and analyzing two competing narratives about poverty reduction is an instrumental choice to achieve the purpose of this article: to show how pre-analytical choices determine the relevant attributes to represent and describe the system, the results of the analysis, and the design and implementation of public policies.

Based on the content analysis of these contrasting policies, Table 2 presents the set of attributes and indicators that we used to evaluate the performance of different household typologies in terms of poverty.

Table 2. Attributes and indicators used to evaluate household performance according to different narratives (source: own elaboration)

Narrative	Attribute	Indicator	Description
Livelihood	Access to land	Land use: maize	Surface land cultivated with maize
	Self-sufficiency	Self-supply of maize	Share of maize consumption from own production
	Workload	Saturation of work	Share of disposable human activity allocated to paid and unpaid work. Disposable human activity is the total amount of hours in a day minus time allocated to physiological overheads (i.e., sleeping, eating and personal care)
Market	Income	Net Income	Net income per capita
	Economic labor productivity	Return to labor	Net income per hour worked
	Consumption of food	Maize consumption	Amount of maize consumed per equivalent consumer

3.2. Performance of households

Five household typologies were noted in the sample. The Mix-traditional group of households comprise the communities living in the mountain area. They undertake subsistence agriculture, complemented with cardamom cultivation as a cash crop. We also noted two household typologies within each of the other two communities: two household typologies producing maize surplus for the market (Cash crop-Land and Cash crop-No land) and two household typologies providing labor to the oil palm plantations (Oil palm-Land and Oil palm-No land). As their names reflect, in both cases land tenure is the main characteristic that differentiates the typologies of communities located in the valley.

Figure 1 illustrates the evaluation of these five household typologies according to the different indicators of the market and livelihoods narratives.

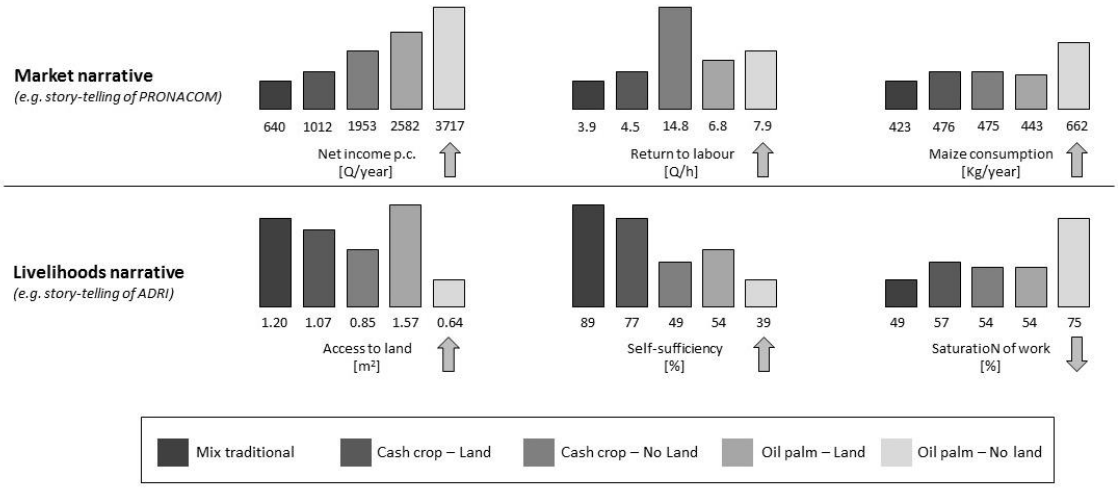

Figure 1. Performance of household typologies according to the market and livelihoods narratives. Note: Arrows next to indicator's name denote whether the indicator is for maximizing or for minimizing. Source: own elaboration based on Table A1, Appendix.

According to the indicators selected in the *market* narrative the household typology "Oil palm-No land" presents higher income per capita[3], followed by households of the "Oil palm-Land" typology. The main differences between the two are that the former have no land and are smaller households made up of younger people. These households can allocate a larger amount of their available time to work in oil palm plantations and obtain a higher monetary income per capita than the rest. Oil palm-Land are followed by the households that focus on producing maize for the market. The same difference that we noted in the previous case also applies here. Smaller households (i.e., "Cash crop-No land") are able to obtain a higher net income per capita by producing maize surplus for the market.

[3] Monetary indicators are measured in Quetzales (Q). As of 2010, 1 US dollar was equal to 8 Quetzales. Therefore, Net income per capita ranges between 80 US$/year p.c. and 465 US$/year p.c. On the other hand, Return to labor ranges between 0.5 US$/h and 1 US$/h.

In terms of return to labor, the "Cash crop-No land" households generate almost double the income per hour of human activity allocated to cash crop production compared to those households whose members work in oil palm plantations. This reflects the fact that these households prioritize participating in the market by selling large proportions of their maize to the market (see Self-sufficiency below).

Finally, under the *market* narrative, we can see that all household typologies, except the "Oil Palm-No land" type, consume more or less the same amount of maize per capita. As mentioned previously, these households obtain higher income per capita than the rest, which enables them to buy larger amounts of maize per capita on the market that complements their own production.

According to the indicators selected in the *livelihood* narrative, the results are very different. For "Mix-traditional" households, medium to high levels of land that were allocated to maize production were noted, compared to the rest of the household typologies. For "Oil palm-Land" households, a higher level of land use was noted, but this is due to the larger amount of owned land. In fact, these households have lower productivities (by about half and one-third) than the Cash crop households, owing to the lower levels of human time allocated to this activity (Mingorría et al. 2014).

The prioritization of participating in the market is also reflected in the indicator self-sufficiency. "Mix traditional" households perform better in this regard, followed by "Cash crop-Land" households. The latter are larger households with access to land: They try to find a balance between producing maize for the market and for their own consumption. Smaller households of younger people (i.e. "Cash crop-No Land" and "Oil palm-No land") present lower figures for self-sufficiency, which reflects the lack of access to land and their prioritization of obtaining income from the market in order to survive.

Finally, the saturation of work indicators demonstrates that the members of the "Mix-traditional" households have a smaller workload than the others, which gives them more time for communitarian work and organization (Mingorria et al. 2014). "Oil palm–No land" households stand out in this regard, since they allocate three-quarters of their available time to paid work activities. Furthermore, one can evaluate the degree of integration into the market by calculating the saturation of paid work, which is the share of disposable time allocated to paid work activities. At one extreme we have the "Mix-traditional" households, which allocate 6% of their disposable time to market activities; and at the other extreme we have "Oil palm-No land" households, which allocate 21% of their disposable time to market activities.

In summary, we can posit that households participating in policies aimed at incorporating peasants into the market (i.e., "Cash crop-No land," "Oil palm-Land" and "Oil palm-No land" households) obtained greater flows of money and food from the market. On the other hand, households that tried to find a balance between subsistence agriculture and participation in the market were able to keep the workload at half of their disposable time (i.e., take care of themselves), and self-supply larger amounts of maize because they had access to enough land.

4. Discussion

The previous section has demonstrated that depending on which poverty narrative is used, household types perform very differently. In this final section, we discuss two relevant implications that arise from conceptualizing poverty as multidimensional: first, the existence of trade-offs between different poverty dimensions; and second, the difference between weak and strong poverty reduction (Scheidel, 2013).

We have noted that household types that exhibited positive performance under a *market* narrative (i.e. PRONACOM policy), exhibited a comparatively bad performance under the *livelihood* narrative (i.e. PNDRI policy). For instance, for "Oil palm-No land" households approximately double the poverty threshold of 234 US$/year per capita. However, these households allocated 75% of their disposable time to work (dedicating little time to community activities and to producing food) and had very limited access to land, meaning that they depended on maintaining their work in oil palm plantations to ensure they could access food and cover basic needs. Moreover, age is an important limitation to work in oil palm plantations; men older than 30 have little possibilities to keep working there and maintaining income from this activity (Mingorría et al 2014). Both, limited access to wage work and land may hinder the livelihoods of "Oil palm-No land" households in the near future. Hence, trade-offs between poverty dimensions exist and need to be carefully considered in the design of policies and programs, in order to avoid them becoming counterproductive.

Then, as evidenced by the case above, we can say that PRONACOM is a weak poverty-alleviation policy, whilst the PNDRI would be a strong poverty-alleviation policy. The former focuses on increasing the income of poor families by increasing their competitiveness, facilitating access to credit and fostering their participation in national and international markets. Higher incomes allow families to access food through purchase on the market, compensating thus for declines in production for self-supply. Access to land may be obtained through credit, however, this also becomes subject to the conditions as well as social and economic consequences of credit and debt (Gerber, 2013). In these situations, access to monetary flows and capital thus substitutes for, or conditions, direct control over other flows and assets. On the other hand, the PNDRI aims to change the structure of land tenure, avoiding land-concentration processes and supporting poor families' access to land through land reform and land redistribution. Access to food would be fostered through diversification in agricultural production and improvements in productivity on the basis of technical advice given.

Participation in weak poverty-alleviation policies has fostered structural changes in the cultural and productive systems of Q'eqchi' communities. Household typologies based on cash-crop cultivation and the provision of labor to oil palm plantations must allocate a larger proportion of their time to the new economic activities compared to households practicing more traditional activities. This results in a lack of time for maintaining social and community structures, such as those mechanisms which serve to help people confront and solve conflicts, manage the commons, or represent the community in official institutions, among others (Mingorría et al 2014, Mingorría 2016). These changes in social and community structures have also influenced how these households have invested in additional funds relevant for the long-term sustainability of their livelihoods. For example, the "Oil palm" households have mainly invested in domestic

appliances and motorbikes[4], while the "Cash crop" households have not invested in any additional capital fund. The communities in the mountains, with mainly "Mix-traditional" households, have invested in a cardamom drier and in a communitarian stock-breeding project. In this way, these communities are investing in productive funds in order to improve their livelihoods and quality of life over the long-term, thus engaging in strong poverty reduction.

5. Conclusions

Nowadays, most scholars agree that poverty is a multidimensional phenomenon. Yet few policies and programs take an integrated approach to multidimensional poverty reduction, but rather focus on different aspects separately, which are based on different understandings of, and narratives on, poverty. This however, has important implications for the design of rural-development policies, as well as for the related actions that affect rural communities.

Based on an empirical case study of Q'eqchi' communities in Guatemala, this paper has illustrated how two policies with the same broad aim of poverty reduction can lead to very different assessments of how rural households and communities perform. Rural households participating in weak poverty alleviation policies (i.e. PRONACOM) have better performance in terms of income but are dependent on maintaining monetary flows to access food and cover basic needs. On the other side, households participating in strong poverty alleviation policies are less dependent on the market to access food and have more available time to maintain social and community structures.

The paper has also illustrated that these assessments are related to differences in how the communities organize their livelihood systems. While these policies may achieve their particular goals, they have also produced a series of trade-offs across other poverty dimensions. Some trade-offs may be acceptable for rural communities. Other trade-offs, however, need to be carefully considered, particularly when communities may lose access to important funds (such as fertile land) that would allow them to access a dignified life in the long-term.

Hence, the pre-analytical choices for defining a narrative on poverty, which were adopted during the process of policy making, have crucial implications for rural communities. In order to deal seriously with multidimensional poverty reduction, it is not only necessary to set up several programs targeting different dimensions, but to also seek their integration by carefully considering the possible trade-offs as well as new poverties that may be created.

6. References

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[4] A motorbike can also be a strong livelihood asset, or fund, enabling quite a lot of new livelihood activities. However, the motorbike also depends on flows of money and gasoline to work.

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Appendix

	(1) Mix-traditional		(2) Cash crop-Land		(3) Cash crop-No Land		(4) Oil palm-Land		(5) Oil palm-No Land		*Kruskal-Wallis test*	
	Mean	**Std.dev.**	**Mean**	**Std.dev.**	**Mean**	**Std.dev.**	**Mean**	**Std.dev.**	**Mean**	**Std.dev.**	χ^2	***p-value***
Net income	3839.3 ^{A}	2315.2	6127.6 ^{A}	3874.6	8014.5 $^{A.B}$	6050.5	18477.2 $^{B.C}$	19283.4	16100.9 ^{C}	5985.3	45.41	< 0.001
Net income p.c	639.3 ^{A}	432.6	1011.9 $^{A.B}$	613.3	1953.5 $^{B.C}$	1327.8	2581.7 $^{B.C}$	3037.9	3716.9 ^{C}	1662.0	45.02	< 0.001
Returns to labor	3.91 ^{A}	2.77	4.51 $^{A.B}$	3.54	14.81 $^{A.B}$	29.77	6.75 ^{B}	2.19	7.93 ^{B}	4.44	18.58	0.001
Self-sufficiency	0.894 ^{C}	0.180	0.77 $^{B.C}$	0.239	0.492 $^{A.B}$	0.483	0.541 $^{A.B}$	0.206	0.393 ^{A}	0.139	37.27	< 0.001
Consumption of maize (eq.c)	422.6	247.0	476.0	261.2	474.6	334.8	443.1	256.0	662.1	338.0	6.1	0.191
Productivity of maize in dry season	990.0 $^{A.B}$	501.4	1793.0 ^{C}	810.4	1523.2 $^{B.C}$	552.7	631.8 ^{A}	528.5	602.9 ^{A}	330.9	35.4	< 0.001
Saturation of work	0.49 ^{A}	0.11	0.57 $^{A.B}$	0.14	0.54 ^{A}	0.17	0.54 ^{A}	0.15	0.75 ^{B}	0.14	18.16	0.001
Land used for maize in dry season	1.20 $^{A.B}$	0.68	1.07 $^{A.B}$	0.37	0.85 ^{A}	0.58	1.57 ^{B}	0.46	0.64 ^{A}	0.37	25.109	<0.001

Table A1. Mean values and statistical differences of calculated indicators, based on Kruskal-Wallis test