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# **'Technical, Objective, Equitable and Uniform'?**

## **A critique of the Colombian system for the selection of beneficiaries of social programmes, Sisben**

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September 1999

### **IDPM Discussion Papers**

### **Working Paper No. 57**

Published by: **Institute for Development Policy and Management**, University of Manchester, Precinct Centre, Manchester, M13 9GH, UK.

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### **Summary**

Targeted poverty reduction programmes, advocated in contemporary poverty orthodoxy, heighten the importance of poverty information. Two divergent tendencies are discernible: tightened-up targeting through narrowed eligibility criteria; and a new epistemology of poverty based on qualitative and participatory methods. Statistical and qualitative analysis of findings from research in rural Colombia shows that the former approach is less 'technical, objective, equitable and uniform' than it purports to be; and that the latter is more valid than is often appreciated. A good compromise is to combine the two and apply them in a spirit of 'self-critical epistemological awareness' (Chambers 1997).

## **Acknowledgements**

This paper is based on part of the author's doctoral thesis, submitted to the University of Manchester in May 1998. The author gratefully acknowledges the comments of supervisors Professor Diane Elson and Professor Paul Cammack, and examiners Professor David Hulme (IDPM) and Professor Robert Chambers (IDS, University of Sussex); Martin Minogue (IDPM); and Andy Norton (Department for International Development); and the research collaboration of Claudia Quiceno and villagers in Colombia. The research was funded by the University of Manchester and the Economic and Social Research Council. Comments are welcome and should be addressed to the author at: IDS, University of Sussex, Brighton BN1 9RE, UK, e-mail r.mcgee@ids.ac.uk

## **1. Introduction**

The targeting of resources for poverty reduction is an essential element of the contemporary approach to poverty enshrined in the World Development Report 1990: Poverty (World Bank 1990). Attention in World Bank Poverty Assessments to questions such as 'Who are the poor?', 'Why are they poor?' and 'What can be done about it?' (World Bank 1993), while long overdue, is more a sign of the advance of the neoliberal paradigm than of the pertinence of the questions. In this paradigm, to maximise efficiency, the poor must be sought out and the limited resources available must be targeted carefully at them. The heightened importance of poverty information arising from the new stress on targeting has provided the impetus in the World Bank, international development banks and many aid-donor and recipient governments for considerable efforts through the 1990s to improve the quantity of poverty data available.

Two main tendencies arose in reaction to this informational challenge, mirroring the older and wider divide between post-modernist and positivist tendencies in social research in general (Moser 1998: 2; IDS 1996):

- (1) the tightening-up of targeted programmes to the maximum, through narrowing the criteria applied and increasing the stringency and policing of targeted responses;
- (2) the development of an alternative epistemology of poverty, based on a different philosophy of knowledge, a different attitude towards the poor, and different research methods.

The significance of these qualitatively divergent tendencies lies in the fact that the way poverty is conceptualized, and the form in which information is gathered and presented to policy-makers, shape and limit the definition and identification of target groups, the formulation of

poverty reduction strategies and the translation of these into practice.

For the purpose of this discussion, the tendencies outlined above can be referred to as, respectively, 'technocratic' and 'alternative' approaches to poverty reduction. Alternative approaches are frequently criticized for being subjective, un-scientific and imprecise, their outputs excessively complex and hence impossible to operationalize for policy and programme purposes. (Some such criticisms undoubtedly refer to examples of bad practice and, while justified as such, can hardly be invoked to disprove the validity of an entire approach.) Rarely, however, are technocratic approaches submitted to systematic scrutiny, or their claims of objectivity, technical refinement, operational relevance and scientific precision put to the test. In contrast, alternative approaches have to defend themselves continuously on methodological and epistemological grounds - to the point that this obligation has profoundly influenced the development of these approaches, and for the better.

This paper is based on research which studied and contrasted the view of poverty from the top downwards - the state's perception - with views from the bottom upwards - poor people's perspectives on their condition and on State responses to it. For case study communities in rural Colombia, ethnographic field study and rapid rural appraisal methods were used to generate an alternative poverty profile to that created by the State poverty information system. On a small scale, this afforded material for comparing a 'tightening-up' approach (the Colombian state's System for the Selection of Beneficiaries of Social Programmes, SISBEN), with an 'alternative' approach (collective and individual wellbeing ranking and semi-structured interviews on various dimensions of poverty). It also permitted the construction of a critique of the former as viewed from the perspective of the latter. The comparative and critical analysis suggests, firstly, that the SISBEN might not be so 'technical, objective, equitable and uniform' as is claimed; secondly, that poor people's perspectives can be at least as useful as technocratic perspectives for purposes of appropriate policy-making and programme targeting; and thirdly, that the best practical compromise in government efforts to improve the lives of the poor is some combination of the two approaches, applied in the spirit of 'self-critical epistemological awareness' (Chambers 1997: 32) which is so central to the latter approach and so lamentably absent from the former.

## **2. The view from above and the view from below**

The view of poverty 'from above' was captured in this study through the targeting system recently introduced by the Colombian government, to serve as 'gatekeeper' of social spending for the poor. The view 'from below' was captured by studying three communities in detail: one village of some 150 households through ten months of ethnography, and two communities of around thirty households through rapid appraisal studies totalling ten days each.

Legislation arising from the reformed (1991) Colombian Constitution (Law 60, 1993) stipulates that social spending must be targeted at the poorest sectors of the population and those with most basic needs unsatisfied. From this stipulation arose the ‘System for the Selection of Beneficiaries of Social Programmes’ (SISBEN), designed by the National Planning Department, closely modelled on the CASEN in Chile<sup>1</sup> and introduced in 1994. Its main objective is ‘To establish a technical, objective, equitable and uniform mechanism for the selection of beneficiaries of social spending to be used by territorial entities [...]’ (Departamento Nacional de Planeación et al 1994: 10-11).

The principal tool of SISBEN is a household survey comprising sixty-two questions which ‘disclose and measure levels of poverty’, and whose responses when processed generate a family-level composite quality-of-life indicator (ibid: 14). The survey is to be applied every three years in all rural and urban areas belonging to socioeconomic strata one and two<sup>2</sup>, using as enumerators public servants or contractors supervised by a municipal administrator. As such, the survey promises to provide the most comprehensive information yet on levels and standards of housing, public service provision, education, social security, income and family composition of low-income groups.

Responses to survey questions are weighted, and combined so as to generate for each family (of which, it is recognized, more than one may reside under one roof) a ‘score’ between zero and 100 which corresponds to one of six SISBEN ‘levels’. Only those with scores in levels one and two are generally eligible for social subsidies. Most municipalities issue families with a card recording their score, which must be presented at service outlets as proof of eligibility for subsidized services.

During the course of fieldwork, the SISBEN scores for families in the ethnographic research site were obtained from the municipal government. At first glance it was obvious that those inhabitants scoring highest and lowest were not those whom my observations and research suggested were the least and most poor respectively. One inhabitant was known by all as the wealthiest in the village, and referred to as ‘*el mandamás*’, literally, ‘he who orders everyone around’, ‘the boss’. His house was the only brick, two-storey building; and he owned a shop, another house in the village and one in the city, two trucks, a bus, a motor-bike, dozens of cattle, several horses and dozens of hectares of good land. All his six

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<sup>1</sup> National Socioeconomic Characterization System. See DANE/Programa Presidencial para la Juventud, la Mujer y la Familia (1992).

<sup>2</sup> Allocations and levels of subsidy for public services are determined by a ‘Socioeconomic Stratification’ system which establishes the stratum of each geographical area of the country (urban neighbourhood or rural community) on the basis of three-yearly household surveys. All rural households belong to the lowest strata (1 or 2) so are eligible for subsidies on water, energy and sanitation services, and low-income housing schemes. The subsidies are considered highly inefficient and are under revision but continue to operate until the system is superseded by universal application of SISBEN.

children lived in the city and had completed secondary education. His score was 43 (that is, SISBEN level 3), among the higher scores but 11 points short of the highest. Another family with land, livestock, good horses and a small income from an informal dentistry practice, was commonly considered among the best off but scored 21 (level 2), 33 points short of the top score. On the other hand, an elderly couple in poor health, who lived on subsistence farming and the near-negligible proceeds from a run-down shop, scored 32 points (level 3) which excludes them from any benefits.

How were these scores reached? What were their implications for the population’s access to state subsidies? Answers were sought by analyzing the SISBEN survey and indicator, and holding interviews with key policy-makers and implementors. In an effort to contest the SISBEN scores from an alternative perspective, a parallel qualitative data- set was set up using participatory research techniques: the view ‘from below’.

This view ‘from below’ was captured through wellbeing ranking<sup>3</sup>. This was carried out in the ethnography site by thirteen inhabitants ranking individually eighty-seven households; and in the rapid appraisal sites by mixed and single-sex groups ranking collectively their own and neighbours’ households<sup>4</sup>. Households were ranked into three groups: the poorest, the ‘middling poor’ and the least poor. For each household an average ranking was taken from all the rankings assigned to it (see Appendix).

### **3. SISBEN scores versus wellbeing rankings**

SISBEN scores for families in the ethnographic and rapid appraisal research sites are as shown in Table 1:

Table 1: SISBEN score ranges and levels for the three communities

	<b>Uribe</b>	<b>El Guayabo</b>	<b>La Romelia</b>

<sup>3</sup> Sources on this technique include: Ravnborg & Guerrero (1996), Norton et al (1995), Grandin (1988), and numerous articles in RRA Notes (formerly PLA Notes) particularly Shah (1990), Groverman (1990), Welbourn (1991), Seeley et al (1996).

<sup>4</sup> Rankings were of households, but only in very few cases did these not correspond to the family units scored by SISBEN.

Range of scores	7-54	15-37	11-35
% of families in SISBEN level 1	43	26	23
% of families in SISBEN level 2	33	64	62
% of families in SISBEN level 3	24	10	15

Source: author's field notes and calculations

**Notes:**

SISBEN level 1: scores from 0 to 18

SISBEN level 2: scores from 19 to 30

SISBEN level 3+: scores from 30 upwards

Those on level 1 qualify for subsidies made available through the municipality, mainly a 95% discount on health care charges and prescription costs and access to social safety net programmes. Those on level 2 qualify for certain safety net programmes and a 90% discount on health care. Those on level 3 or above qualify for no targeted benefits<sup>5</sup>.

In wellbeing ranking, without fail respondents stressed at the outset that *all* local families were poor, and that any stratification represented degrees of poverty. Notwithstanding the relative terms people used to distinguish them (shown in Table 2), the three groups should thus be taken to comprise the poorest (1), the middling poor (2) and the least poor (3). Table 2 shows a breakdown of average wellbeing rankings (for Uribe, taken across 13 individual rankings and for El Guayabo and La Romelia, taken across 2 or 3 collective rankings done by sub-groups) for each community:

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<sup>5</sup> There are a range of other potential uses for SISBEN, especially the targeting of subsidies in sectors other than health, but these are still under development and have not been implemented yet.

Table 2: Average wellbeing rankings for the three communities

	<b>Uribe</b>	<b>El Guayabo</b>	<b>La Romelia</b>
% of families in Group 1 ('the poorest')	49.4	31.8	43.6
% of families in Group 2 (the 'more or less')	31.0	45.5	40.4
% of families in Group 3 ('those who are alright')	19.5	22.7	16.2

Source: author's fieldnotes and calculations

There is, of course, no *prima facie* reason to assume that the parameters of the three wellbeing groups necessarily correspond to those of the three SISBEN levels. Examination of the criteria of wellbeing which respondents used when ranking reveals that foremost in their deliberations is the extent to which a family is self-sufficient. Descriptors used for Group 1 include 'No assets - no land or house of their own'; 'In poor health'; 'Only one income source, sporadic and unreliable, or none at all except charity'; 'Too elderly to work, so depend on others'; 'Those who cannot satisfy their needs'. Those used for Group 3 include 'Have economic stability; never live hand to mouth or go without food'; 'Work for themselves, not for others'; 'Have some capital to invest in farming' (Field notes, April-June 1997). If one takes as the key parameter of SISBEN levels the degree of a family's need for State social welfare subsidies, it would thus seem acceptable to treat wellbeing ranking groups 1, 2 and 3 as roughly coterminous with SISBEN levels 1, 2 and 3.

Although wellbeing rankings place more families in the poorest group in all three communities than does SISBEN, an apparent resemblance might be observed between the proportions of each population assigned by SISBEN to levels 1, 2 and 3+ (Table 1), and those assigned in wellbeing rankings to Groups 1, 2 and 3 (Table 2). However, this is not to say that the same families ranked as poorest, middling poor and least poor were



scored as SISBEN levels 1, 2 and 3+ respectively. The significance of this observed resemblance can be assessed by checking whether the same families were assigned to SISBEN level 1 as to the lowest wellbeing group, the same to SISBEN level 2 as to the middling wellbeing group, and the same to SISBEN level 3+ as to the highest wellbeing group. A comparison of SISBEN levels and wellbeing groups for each family in each community generates the following results (see Table 3):

Table 3: Families in each wellbeing group broken down by SISBEN level

Wellbeing group	Uribe % of families	El Guayabo % of families	La Romelia % of families
Families in wellbeing group 1 assigned to:			
SISBEN level 1	<b>41.8</b>	<b>42.9</b>	<b>19.9</b>
SISBEN level 2	34.9	28.6	41.8
SISBEN level 3+	28.6	28.6	7.7
Families for which no SISBEN score available	4.7	0	30.7
Families in wellbeing group 2 assigned to:			
SISBEN level 1	7.4	10	37.1
SISBEN level 2	<b>51.9</b>	<b>80</b>	<b>46.8</b>
SISBEN level 3+	33.3	10	0
Families for which no SISBEN score available	7.4	0	16.3
Families in wellbeing group 3 assigned to:			
SISBEN level 1	5.9	0	41.7
SISBEN level 2	23.6	60	16.7
SISBEN level 3	<b>70.6</b>	<b>20</b>	<b>41.7</b>
Families for which no SISBEN score available	0		0

Source: author's calculations based on field data

If it were the case that the families' wellbeing ranking groups matched their SISBEN levels, the bolded values in Table 3 would be 100% in each case. In fact, the correspondence is not close. Looking across all three wellbeing ranking groups and within each group, it becomes clear that

SISBEN tends to assign higher scores, that is, to ‘mark up’ families of lowest wellbeing ranking to level 2, and also to ‘mark down’ families of highest wellbeing ranking to level 2 and even 1 (especially in the case of La Romelia).

In any case, as noted above, respondents began their wellbeing rankings by asserting that *all* families in their community were poor and then ranked by degree of poverty. SISBEN too appears to start from the premise that all are poor inasmuch as the survey is only conducted in areas of socioeconomic strata 1 and 2; yet this premise is undermined by the fact that a level 3 SISBEN score disqualifies the bearer from any state social welfare subsidies. The wellbeing rankings categorize each family only in relation to other poor households, and so represent a truncated distribution vis-a-vis the SISBEN scores which locate families on a continuum ranging from the very poor to those not poor enough to merit subsidies.

Finally, it would appear that the concepts behind SISBEN and wellbeing ranking, which shape their outcomes, are concepts of different orders, although of course some association is to be expected between the characteristics captured by SISBEN and those captured by wellbeing ranking. These issues are explored at length in the following section.

#### **4. SISBEN laid bare: ‘Technical, objective, equitable and uniform’?**

SISBEN is critically important in the new model of social provision for the poor, because by ranking them in order of intensity of need it determines which of them fall below the cut-off points of eligibility for state social welfare support. Aside from the question of whether targeted social transfers are appropriate in contexts with high poverty levels, there remains the question of how far SISBEN achieves its own objectives. Findings from the ethnographic and RA fieldwork suggest that it does not. The two typical errors of targeting seem to occur: excessive coverage, and failure to cover all the target population (Cornia and Stewart 1993). This section presents evidence from ethnographic and rapid appraisal research of the system’s inadequacies; uses correlation analysis to ascertain how far the outputs of SISBEN correspond to those of wellbeing ranking; and discusses weaknesses identified in a detailed examination of SISBEN based on document analysis and interviews with national coordinators and municipal administrators in the cities of Popayán and Cali (widely cited as SISBEN good practice examples), and the municipality where the field research was conducted.

First impressions of SISBEN formed during fieldwork, prior to any comparative analysis of SISBEN scores versus wellbeing rankings, raised initial doubts as to its methodological soundness and its usefulness. In Uribe the health promoter was responsible for conducting the survey in 1994-95:

“All we hospital staff had to do it..., but the work was really badly apportioned. I was supposed to do Cerrito and the whole of Uribe, but I complained and ended up having to do just Uribe, but that’s 190 houses. And they gave us a time-limit, and we were supposed to be carrying on with our other duties all the time - completely impossible [...]. Some houses were left out because no-one was in when I went [...]. They say that [one enumerator] only stayed there two days to survey two communities, just arriving at each house and asking who lived there, and then leaving [...]. There was an assembly here for the community, with all the municipal coordinators and representatives from every community... and information was given out there, about collecting the card, the cost [...] But sometimes people don’t pass on information properly [...]. But the survey work was really badly divided up. The municipality had money to pay for it to be done, but the coordinator must have made some deal with someone, because they didn’t pay a penny to those of us who work for the hospital, not even our transport expenses [...] The contracted people were well-paid, with expenses and everything’ (Interview 17/10/96).

The wife of an Uribe inhabitant contracted to survey one nearby community reports:

“He was assigned that community up above, which is full of evangelical Christians, who refuse to be surveyed for health care because they say it’s God’s will whether they live or die. So he brought the forms back and filled them in here on the kitchen table” (Field log 15/10/96).

In La Romelia, the most remote of the communities with its population widely dispersed among mountains, it was said that:

“[...] the girls who came here [to survey] spent most of their time getting lost. They didn’t go to an of the outlying houses - too far for them. They were only here a couple of days” (Interview 25/5/97).

In late 1996, hardly any inhabitants of Uribe knew what SISBEN was. Only the health promoter had an approximate working understanding of it, and no-one was aware of its full scope as gatekeeper of all state social welfare subsidies and transfers. The minority of inhabitants who had SISBEN cards were those who had needed operations or hospitalization recently. They had collected the cards from the administrative offices in the municipal centre, on payment of 1000 pesos, transport costs worth one day’s wage, and a full day’s travelling<sup>6</sup>. In many cases the card was obtained when the patient was already urgently needing treatment. Asked whether her family had a SISBEN card, the mother of a baby with suspected meningitis replied:

“He [her husband] had to go and get the card, ask the mayor to do him the favour of giving him the card for our baby, and he did give him

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<sup>6</sup> At the time - 1997 - 1000 Colombian pesos were approximately US\$1 and the local daily wage rate was 2,500 pesos. The 1000 peso charge - almost half a day’s wage - was levied discretionally and, it later transpired, illegally, by the mayor.

it. So we got the price [of the child’s hospital care] down that way. Because otherwise we’d have had to pay what they were asking - 500,000 pesos. Poor as we are. How were we meant to pay that?” (Interview 15/6/97).

Those with cards stressed the importance of the subsidies and the impossibility of meeting health charges without it, except by incurring serious debts. Those without cards were waiting for them to arrive, two years after being surveyed, unaware that they had to collect and pay for them. In the meantime, most people continued deferring visits to a health centre for as long as possible because of fears about the possible costs of treatment and medication, just as they did before SISBEN was introduced. Beneficiaries of safety-net programmes were still those who were well-connected to the Community Action Committee (the village-level elected representative body) and could afford the ‘registration fee’ (generally 3,000-30,000 pesos) and subsequent monthly contributions and/or *ad hoc* charges levied by the Committee to cover project administration and local co-financing contributions.

A detailed examination of the system revealed methodological issues of design and implementation which help to explain why SISBEN falls short of its own goals.

#### 4.1 Correlation analysis

A correlation test (Spearman’s rank order correlation test) was performed to explore the degree of correlation between, on the one hand, the views of relative wellbeing held by poor people in the field, elicited through wellbeing rankings, and on the other, the view of it from the office, embodied in the scores assigned to households by SISBEN<sup>7</sup>. The results are shown in Table 4. A rule of thumb for gauging the strength of the relationship between a pair of rank orders - ie, a given set of wellbeing rankings and the corresponding set of SISBEN scores - is that a correlation coefficient greater than 0.5 indicates that in a given pair half or more values are the same, and a coefficient of less than 0.5 indicates that less than half the values are the same.

Table 4: Results of Spearman’s rank order correlation test on wellbeing rankings Vs SISBEN scores

Pair of rankings tested	Correlation coefficient

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<sup>7</sup> See Appendix for details of the choice of statistical technique and interpretation of results. Rw data are presented in Appendix, TableA1.

Uribe average wellbeing ranking Vs Uribe SISBEN scores	0.4379**
El Guayabo collective wellbeing ranking (women) Vs El Guayabo SISBEN scores	0.4878*
La Romelia collective wellbeing ranking (women) Vs La Romelia SISBEN scores	0.2068
La Romelia collective wellbeing ranking (men) Vs La Romelia SISBEN scores	-0.1253
La Romelia collective wellbeing ranking (women) Vs La Romelia collective wellbeing ranking (men)	0.7339**

Source: author's calculations

**Note:**

\*\* denotes 99% significance level; \* denotes 95% significance level; no asterisk denotes that the result is not statistically significant

None of the coefficients obtained by testing wellbeing rankings against SISBEN scores are higher than 0.5, indicating that the correlation is not high. The coefficients obtained for La Romelia are not even statistically significant. The fact that the El Guayabo coefficient is so much higher than the La Romelia ones (although still below 0.5) might reflect more rigorous application of the SISBEN survey in the former community.

Strikingly high, on the other hand, is the last coefficient shown in Table 4, obtained by testing La Romelia women's ranking against La Romelia men's ranking as an additional check on the validity and reliability of collective wellbeing ranking. This shows that the viewpoints of two groups from the same community are more closely correlated than either viewpoint is with the SISBEN scores. It is instructive to compare Table 4 with correlation coefficients obtained by testing individual wellbeing rankings for Uribe against each other (see Appendix, Table A2). In that instance

over 80% (65 out of 78) of the coefficients were over 0.5, indicating remarkable consistency between the viewpoints of 13 individual respondents.

Altogether, these results suggest that:

- wellbeing ranking conducted by local people is a valid and useful means for investigating relative poverty levels in small rural communities. The strong correlation between different individuals' and groups' rankings of the same community testifies to the consistency of local people's perspectives and adds credibility to their views;
- local views about who is poorest and who is best off diverge considerably from the official perspective obtained through the SISBEN survey;
- there is significantly stronger correlation between the views of different population groups than between any one group's view and the SISBEN view.

It might also be inferred that the quality of the SISBEN data differs considerably from community to community, although this cannot be concluded unequivocally on the basis of data covering only three communities. If local people's views are taken as valid indicators of inhabitants' wellbeing status, the SISBEN outputs for La Romelia appear to be of very dubious quality indeed since they show no significant correlation at all with local views there, and since local views show strong correlation between themselves. The significance of these observations inheres in the sizeable proportions of each community studied who are considered destitute or poor by members of their communities, yet assigned to SISBEN levels 3+ and thereby deprived of access to benefits.

## **4.2 Design issues**

The design issues arising in a critical scrutiny of SISBEN are technical and conceptual. On the technical level, analysis of the survey design process and the construction of the SISBEN indicator turns up a number of noteworthy points. The documentation explains that the design of the questionnaire and indicator was based on a sample of 20,000 urban and 5,000 rural households drawn from a 'socioeconomic characterization' household survey. Characteristics of this sample of households were analyzed to obtain a 'global poverty indicator'. The methodological notes state that 'from the social, economic and demographic characteristics of this sample the relevant variables for measuring poverty were determined' (Castaño & Moreno 1994: 17). Four clusters of variables associated with poverty were identified, relating to housing and contents; public services; demographic, income and occupation variables; and human capital and social security. The principal component of each cluster was

identified using factor analysis and principal component analysis<sup>8</sup>. A ‘global poverty indicator’ was then constructed from these principal components, and the values of the indicator re-scaled from 0 to 100 to construct the SISBEN poverty index. Implicit in this is the application of some initial ‘poverty line’ to the whole survey universe to separate out those ‘poor’ households whose characteristics were then subjected to detailed analysis, although this aspect of the procedure is not spelt out. Households whose characteristics were studied for the construction of the SISBEN indicator and questionnaire were apparently those households covered by the initial sample survey whose total incomes classified them as ‘poor’ according to an earlier Poverty Line indicator. One might question how far SISBEN represents an improvement on previous poverty measurement methods if its design draws on the pre-existing income poverty line, which has been considered in need of replacement because of its conceptual, epistemological and metrical limitations (see, for example, Fresneda 1994; McGee 1998).

The SISBEN survey was applied in all urban and rural areas of socioeconomic strata 1 and 2: that is, its application was confined to geographical areas already identified in the last (1993) census as poor. The initial sampling frame provided by the census for the construction of the SISBEN indicator, and the decision to apply the SISBEN survey only in those geographical areas designated by it as strata 1 and 2, are seriously questionable in the light of widely recognized data deficiencies. For the city of Cali, the SISBEN administrator states:

“[...]the last census gave a total of 29,000 households in Cali’s rural areas. For SISBEN we surveyed 32,600 households [...], in 1995. [...] And we know that some got left out; some families didn’t get surveyed because of geographical problems and things...” (Interview 31/7/96).

In Popayán, too, municipal planners noted that the data were seriously deficient and outdated (Interview 4/11/96). Moreover, it was found that some of the poorest households were missed by the survey: a typical feature of Colombian cities is the residence in the same or adjacent neighbourhoods of very wealthy and very poor, but only zones inhabited entirely by low-income populations are covered<sup>9</sup>.

The validity of the procedures used to explore factors of poverty and determine their relative weighting depends on all the relevant variables having been included in the initial survey. The absence of any relevant variables leads to ‘omitted variable bias’ in the survey. In factor analysis,

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<sup>8</sup> “A linear combination of variables, any combination, constitutes a factor. What is required in factor analysis is a combination of variables so weighted as to account for the variance in the correlations. Factor analytic methods, of which principal components is one example, are designed for this purpose” (Kline 1994: 36).

<sup>9</sup> Inhabitants of non-poor strata may request to be surveyed, but the entry of their address into the data-base sends their score straight up to one of the higher SISBEN levels (Interview, 4/11/96).



“[i]t is the case that if, for example, in a study of abilities no measure of musical ability were included, then no factor of musical ability could emerge. From this it follows that in exploratory analyses it is essential to sample variables as widely as possible” (Kline 1994: 12).

If, as inferred above, the initial survey set out to capture only those characteristics included in the poverty-line indicator and/or those covered in the old Basic Needs Unsatisfied indicator (see Fresneda 1994) certain important factors will have been left out. For instance, the only questions on asset ownership in the survey refer to possession of the house where the interview takes place and a few electrodomestic appliances. Yet asset-ownership dominated in the poverty criteria of local respondents elicited through wellbeing ranking in the field research. The absence of many asset-related variables - land, livestock, vehicles, farming appliances, additional residences - from the survey would thus appear a serious defect.

The difficulties involved in recording income accurately by means of a questionnaire survey are widely acknowledged and intractable, due to recall problems, the need to estimate or to quantify non-monetary income, and respondents' reluctance to disclose such information. Good survey practice includes a range of strategies to circumvent the difficulties, for example seeking detailed information on consumption, a more easily measured proxy for income; or conducting small numbers of purpose-designed income and expenditure, or budget, surveys (cf. Booth et al 1997, Annex 1: 5-6). The normal difficulties of measuring income are exacerbated in developing countries:

“The commonest error is to ask the respondent a question that it is impossible to answer accurately. This may be because either the answer was never known or too much is expected of the respondent's memory. A further factor affecting the quality of the response is that the respondent may be reluctant to reveal the answer. It is unreasonable to ask most respondents in developing countries for crop areas or milk yields, for net income from an informal business, or for the weight of food consumed. Their land has never been measured; the cows are milked by a herdsboy some distance from the farm; account books are not kept; nobody, except the affluent on a slimming course, keeps a record of the weight of food consumed” (Casley & Lury 1981: 96).

Despite wide recognition of the under-reporting of income in household surveys around the world, and of the need for special methods - detailed budget surveys; judicious probing about assets - to countervail it, the section on income and occupation in the SISBEN survey is astoundingly inadequate. In relation to the single income question ‘How much did you (he/she) earn in the past month, from all sources?’, the enumerators' guidelines state:

“This question captures money income from all sources, as a result of paid activities performed by the person or as assistance in money and/or kind from people or agencies outside the household. Request the ordinary or everyday income each person received in the past month. Where the total income is markedly different from one month to another, request the average monthly income over the past year [...]. Take into account the following considerations:

- Salaried workers' incomes, if only from that source, means the payment in money or kind, fixed or daily, that people receive in remuneration;
- The income of workers who run their own business or exercise their profession independently, if only from this source, means the net income or utility the person obtained from their activity, that is, after discounting from the gross income the costs and expenses incurred to achieve this utility or profit;
- For rentiers the income issuing from this activity comprises the value received from payments of interest, rent, dividends, etc;
- For retired people and pensioners the income requested means the total pension entitlement, without subtracting deductions or discounts to which it is subjected;

**Bear in mind that you are asking the total income the person receives; that is, if as well as personal income from their economic activity they receive additional income, they must declare it. Examples:**

- a worker or retired person with 'other income' derived from interest or rent payments;
- a student who works at weekends and receives income from this activity, which is additional to their principal activity;
- a housewife who receives assistance from her ex-partner, children or other people from other households" (Departamento Nacional de Planeación et al 1994: 37-38; emphasis in original).

The income question could be readily and accurately answered only by salaried workers; and is virtually impossible for subsistence peasant farmers or urban informal sector workers to answer accurately in brief interviews, even if they were willing to do so. Subsistence agricultural production is not mentioned. This explains one anomaly noted in Uribe SISBEN scores: those emerging with the highest scores were not the best off but were the two public servants (health promoter and police inspector) - the only inhabitants earning a regular, and readily verifiable, salary.

The SISBEN survey includes a number of built-in cross-checks supposed to detect under-reporting of income. Where gross understatement is suspected, the software package automatically assigns an imputed income which is, at lowest, the national minimum wage and overrides the income stated. The SISBEN team at the National Planning Department has recently devised an econometric model for imputing incomes to those respondents who state nil or suspiciously low incomes<sup>10</sup>. The real-life example demonstrated to me during my interview with the national SISBEN coordinator was an urban respondent who reported a monthly income of 100,000 pesos, two-thirds of the national minimum wage. The model assigned him an imputed income of 498,000 pesos. Once the model is routinely applied, imputed incomes will be reflected in SISBEN

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<sup>10</sup> This was commissioned by the Ministry of Health, a prime user of SISBEN, which bears the costs of the health care discounts of SISBEN beneficiaries and hence has much to gain from such a corrective device as this.

scores. Correction on this scale would seem to obviate the need to pose any income questions to respondents at all; and is excessive in view of the fact that a great proportion of even those Colombians enjoying full and stable employment - not the poorest - earn less than the national minimum wage.

To return to the construction of the SISBEN 'family poverty indicator' (Castaño & Moreno 1994: 17), the weighted variables identified through factor analysis and combined to give the indicator are as shown in Table 5, in order of magnitude of weighting:

Table 5: Weighted variables making up SISBEN indicator

<b>URBAN AREAS</b>	<b>RURAL AREAS</b>
Years of education of main earner	Years of education of main earner
Average education of members aged 12+	Average education of members aged 12+
Means of human waste disposal	Source of water for cooking
Means of garbage disposal	Time spent bringing water daily
Floor material	Floor material
Per capita income	Proportion of members working
Ratio of number of rooms to number of inhabitants	Wall material
Source of water for cooking	Means of human waste disposal
Wall material	Ratio of number of rooms to number of inhabitants
Proportion of members working	Roof material
Proportion of members aged ≤6	Per capita income
Social security coverage	Proportion of members aged ≤6
Domestic fittings and appliances	Domestic fittings and appliances
Roof material	Means of garbage disposal
	Social security coverage

Source: Castaño & Moreno (1994)

Although variable weightings were inferred separately for urban (cities and administrative centres of rural municipalities) and rural (villages which are not municipal centres, and smaller communities) contexts, it may be observed that according to SISBEN the facets of urban and rural poverty

are almost identical, except for the inclusion of 'time spent bringing water' in the rural context. This in itself raises questions as to the validity of the factor analysis, given the substantial differences between urban and rural livelihoods and environments in Colombia. A further question is begged by the dominance of education variables in both urban and rural contexts. The reason why the rural poor tend to have low educational levels is not because poverty is associated with low educational levels, but because rural residence is. That the education of the main earner and average education of members over 12 emerge as the strongest determinants of rural poverty is likely to be a statistical artefact reflecting the general scarcity of educational facilities in rural areas, and the fact that all rural populations fall into the lowest socioeconomic strata, where SISBEN is applied.

Conceptual doubts about SISBEN relate to the adequacy of some of the key concepts on which it rests, and failure to include certain other concepts which might be considered serious omissions. As noted, the concept of income as used in SISBEN and implicit in the survey is narrow, corresponding to a regular money wage such as is perceived by the urban salariat. Whatever the enumerators' notes advise (see above), income in kind (such as from subsistence production), irregular cash income (such as from urban informal activities) and highly seasonal income are excluded from the concept and are therefore effectively missed by the question. This leads to error in both urban and rural contexts. Relatedly, the concept of poverty orienting SISBEN is highly income-based, as is plain from the absence of crucial asset-related variables. This suggests that SISBEN does not extend understandings of rural or urban poverty beyond those embodied in previous measurements (Poverty Line and Basic Needs Unsatisfied). It also implies an urban bias, since income from employment tends to feature larger in urban livelihood strategies than in rural ones.

The combination of a narrow concept of income and an equally narrow concept of occupation results in neglect of women's activities by the survey. The questions on occupation ask, 'Which activity did you (did he/she) spend most time on last week?' and 'Habitually, throughout the year, which activity do you (does he/she) spend most time on?' The possible responses are: working; seeking work; studying; housework; rent-seeking; pensioner/retired; invalid; no activity. Various clarifications are provided for enumerators' guidance, including the instruction to register under 'working' those farm family members who work unpaid on family land for more than 15 hours a week. However, a rural woman faced with the options 'working' or 'housework' is likely to choose 'housework', for several good reasons: her agricultural tasks are treated as such by social convention; she may well spend more hours performing domestic reproductive duties than (unpaid) productive work even if she devotes to the latter a substantial part of her week; claiming to work implies that payment is received. This consequence of conceptual inadequacy might not have significant effects from the point of view of assigning poverty scores, in that it would not translate into significantly different reported income (or, indeed, imputed income!). But it reaffirms an inaccurate stereotype of rural women's activities and capacities, and amounts to a gender bias in the data which will probably be reproduced and amplified in other uses to which the data are put.

A further gender bias is detectable in the concept of household on which the survey and indicator are based. SISBEN does distinguish between family units rather than lumping together all who reside under one roof. This constitutes an improvement on previous censuses and surveys. However, the extrapolation of the 'family poverty indicator' to each individual family member remains an unsatisfactory procedure, albeit one adopted by some means tests as the best available. In the case of SISBEN, where the score regulates specifically *individuals'* access to demand-side subsidies, the justification for such a procedure is precarious. The household or family unit modelled by SISBEN is of the 'benevolent dictator' kind, wherein the intra-household distribution of resources is equitable and uncontroversial. The myth of the benign paternalist head of household is no longer convincing even for modern egalitarian societies, and much less so in the Colombian context. Evidence from the field suggests that the 'cooperative conflict' model, or indeed, wholly dysfunctional households, are far more common in reality than the 'benevolent dictator' model (Sen 1990). On this evidence, it is realistic to suppose that in households with a male principal earner the female partner suffers greater income-poverty and greater non-material poverty than he, and that a greater proportion of any income she earns is used to satisfy family and children's needs than of that he earns. The force of such intra-household dynamics in configuring poor people's claims, entitlements and real access to satisfiers of their needs, as observed in the fieldwork, highlights the inadequacy of the conventional household concept used in SISBEN.

The concept of 'livelihood' (Chambers 1995, 1997) is conspicuously absent. Many of the biases and non-sampling errors originating in the limiting concepts of occupation, employment, household, income and poverty as utilized in the survey, especially the resulting urban bias, could have been avoided by basing the data-gathering effort on this conceptual innovation and taking the opportunity to extend notions and deepen understandings of poverty.

An interrogation of the very concept of 'targeting' which underpins SISBEN suggests that as used here, it is about identifying as few claimants as possible, not about directing benefits to people who really need them. The fact that in Uribe, El Guayabo and La Romelia combined, already classified as poor by way of the socio-economic stratification exercise, of those surveyed only 38% emerge as SISBEN level 1 and 42% as SISBEN level 2 (ie that only 80% are deemed to qualify for any State subsidies at all), reinforces this impression.

### **4.3 Implementation issues**

The implementation issues arising in this analysis of SISBEN relate both to the application of the survey, and to the implementation of the system as a whole. Enquiries uncovered many kinds of non-sampling error. A National Planning Department evaluation of the survey indicates that the difficulty most commonly reported by municipalities was 'the population's refusal to be surveyed'. This difficulty was reported in 29% of municipalities (followed by 'lack of conceptual clarity on the part of enumerators', reported in 18% of municipalities (Departamento Nacional de Planeación et al 1996: 10). Of the 47% of municipalities which contracted out the survey to private firms, 35% reported incomplete coverage of

their populations by enumerators. The greater dispersion of La Romelia dwellings and more difficult terrain in that area than in Uribe and El Guayabo might explain why more La Romelia households were omitted from the survey and why those scores obtained appear more inaccurate than other communities' when compared with local wellbeing rankings. SISBEN enumerators were expected to survey ten to fifteen households per day, even in areas of dispersed rural population and precarious urban settlements with difficult access. The short time allowed for each interview in this schedule compounds coverage problems and enumerator errors, and leaves no opportunity for detection or avoidance of these.

Besides patchy coverage and enumerator errors, respondents undoubtedly contributed other non-sampling errors. Non-response was high, as shown by the evaluation (Departamento Nacional de Planeación et al 1996); and it is likely that income was under-reported and the under-reporting over-corrected. Then there is the 'courtesy bias' which affects the way locals respond to outsiders in remote communities (Bulmer & Warwick 1993). This might involve sitting a survey enumerator down outside the house and not giving access to the home, through shame about poverty and lack of furniture, thus preventing accurate recording of housing characteristics. It might involve exaggerating one's years of schooling, through shame of ignorance or illiteracy. Further non-sampling errors would inevitably arise during data-processing, which was conducted in busy municipal offices open to the public, often by a single person, and subject to multiple interruptions and distractions.

While the municipality where the fieldwork was conducted appears to be an example of SISBEN worst practice, it is nonetheless reasonable to assume that it is representative of many under-resourced rural municipalities throughout the country where similar conditions obtain. Municipalities are expected to fund SISBEN implementation from their own budgets. These costs weigh particularly heavily in poor rural municipalities where logistical problems raise survey costs; and in a context of recent decentralization where local government claims that the devolution of resources from central government is incommensurate with the devolution of responsibilities. Physical and human resources (enumerators, office space, computer facilities and data-processing expertise) at the municipalities' disposal were not up to the task, in some cases through poor planning, in others through mayors' reluctance to commit a substantial portion of their limited budgets to SISBEN. The evaluation of survey application concludes that:

“In general, according to these findings, when the decision was taken to implement the survey the municipalities did not have sufficient or appropriate human, physical and financial resources [...]. The findings indicate defects at various stages of the project, which are to do with lack of economic and technological resources and weaknesses in the organizational structures responsible for SISBEN [...]” (Departamento Nacional de Planeación et al 1996: 27).

Implementation was further hindered by failure to communicate effectively the aims and procedures of SISBEN to the public either before or during the process. This reflects the total absence of an institutional culture of information dissemination in the Colombian bureaucracy. While some municipalities were imaginative in their use of appropriate channels to publicize SISBEN in potential beneficiary communities before

surveying, others - including the fieldwork municipality - did not do so, resulting in great confusion as to what it is and how it works. Uninformed about the system, the public did not come forward to claim their SISBEN cards or receive benefits allocated to them. This occurred in a number of subsidized programmes in the municipality of Cali, the model case of successful SISBEN application (Interview 31/7/97); and in the Social Solidarity Network programme for the elderly in the fieldwork area (Field log, 9/10/96). In some places the time-lapse between the survey and subsequent action was such that people forgot about SISBEN. The municipality stands to benefit from poor dissemination and forgetfulness: targeted programmes generally command such limited resources that of those identified as potential beneficiaries by SISBEN only a portion can become actual beneficiaries, a fact which can have negative political repercussions.

When national SISBEN coordinators and municipal administrators were interviewed, the apparent anomalies of SISBEN observed in the fieldwork were exposed and questions raised about the adequacy of the income, asset and occupation questions for capturing living conditions in a context of subsistence agricultural production. One admitted he had never considered the relevance of the survey's questions, so busy was he implementing it; but felt that enumerators were poorly trained and performed badly, and that if the survey were revised asset ownership should receive greater prominence (Interview 31/7/97).

Generally, though, the system was strongly defended, with frequent recourse to the argument that low human resource levels in municipalities produced weaknesses in data collection, processing and quality control, and that as the system was plainly too complex for some already it could not be made any more comprehensive. The explanation offered for the anomalies observed in the case of Uribe was that respondents always lie about income. This missed the point that for those scores to arise, the respondents in question had not needed to lie about anything. The best-practice example of Cali was cited repeatedly, disregarding - or perhaps proving - my contention that a major weakness of SISBEN is a strong urban bias. Asked about reasons for the partial adoption of SISBEN, policy-makers replied that corrupt mayors and local government functionaries saw the system as a way of policing their allocation of resources and declined to introduce measures which would oblige them to become more accountable. Questioned as to the possibility of future improvements to SISBEN drawing on experience and lessons learnt in the first round, respondents replied that plans to review the system and incorporate this learning had been shelved because funds were short. At the end of fieldwork (1997), the second round was commencing with no comprehensive review having been undertaken nor substantial modifications made in deference to findings from the limited evaluation conducted in 1996 (Departamento Nacional de Planeación et al 1996).

## **5. Conclusions**

This case-study of the 'tightening-up' of a technocratic approach to the poverty information challenge has sought to demonstrate several points.

Firstly, a technocratic approach to poverty assessment can generate findings of spurious accuracy, untempered by reference to poor people's views on the nature and extent of poverty in their local circumstances. The absence of a culture of learning and 'self-critical epistemological awareness' (Chambers 1997: 32) in such approaches constitutes a serious weakness vis-à-vis alternative approaches to poverty assessment. In efforts to promote the alternative approach there is much to be gained from systematic, rigorous and critical scrutiny of the premises and practice of technocratic approaches. The outcomes of such scrutiny can contribute to equalizing the status of these two divergent approaches, by illustrating the latter's limitations both in terms of its own objectives and in terms of its inbuilt constraints on the generation of fresh knowledge, a major focus and strength of the former.

Secondly, poor people's perspectives elicited through alternative approaches can show remarkable internal consistency and little of the imprecision and subjectivity often cited in attempts to discredit them. The principle of self-critical epistemological awareness inherent to alternative approaches safeguards against distortions, biases and defects in data-gathering. The 'contextual' (Booth et al 1997) collection and interpretation of data permit richer insights to develop, with great potential relevance for policy-makers and implementors.

Thirdly, while nation-wide systems of data-collection and comparative assessment of poverty are no doubt needed in some shape or form for the purposes of national planning, resource allocation and social policy delivery, their effectiveness could be much enhanced through a more critical treatment of technocratic methods and attitudes, and concessions to key elements of alternative approaches. Given the imperatives of wide coverage and timely, standardized outputs which govern nation-wide poverty assessment exercises in Colombia and elsewhere, the optimum is probably a combination of national household surveys, predominantly quantitative in methods and focus, with a parallel poverty assessment system based on qualitative, localized, in-depth field research, whose outputs could temper the substance of the national quantitative survey and enrich and validate its results.

In the case of Colombia, this is an area where further research is required. But for such research to be feasible - let alone influential - a vital precondition is the disposition among statisticians and policy-makers to question the approach which has prevailed hitherto, and to learn from the application of innovative methods and attitudes in other developing regions where poverty, although wider-spread and more severe than in Colombia, is beginning to be better understood.



## Appendix

In explaining the statistical analysis of the wellbeing rankings collected during ethnographic research and Rapid Rural Appraisals, this appendix draws on several statistical texts - Bryman & Cramer (1990); Kendall (1943); Siegel & Castellan (1988) - and one source which describes the processing of similar data - Ravnborg & Guerrero (1996).

### *Choice of statistical technique*

To test for a relationship between rankings conducted by different respondents or groups of respondents, three kinds of rank correlation test are available: Pearson's  $r$  (rho), Spearman's  $r$  or Kendall's tau. Pearson's  $r$  was discarded in favour of Spearman's  $r$  and Kendall's tau because these, being non-parametric tests, involve fewer assumptions than Pearson's  $r$  about the variables in question. Freedom from these assumptions makes possible a greater degree of accuracy when making inferences from the results. Spearman's rank order correlation test checks for the existence, strength and direction of a relationship between two rankings. Since it is more commonly used than Kendall's tau in social science research, and was applied by Ravnborg & Guerrero (1996) for purposes similar to those of this exercise, it was chosen in this case.

The pairs of rankings tested in this case were:

- for Uribe, individuals' wellbeing rankings of the 87 households in the community, pair by pair;
- for Uribe, the average wellbeing ranking (obtained by taking an average across the fourteen individual wellbeing rankings conducted) Vs SIBBEN scores of the community;
- for El Guayabo and La Romelia, collective wellbeing rankings by various subgroups of the community, Vs SISBEN scores of the community.

### *Procedures followed*

The procedure adopted for analyzing the Uribe individual wellbeing rankings is set out in steps (i)-(ii). The procedures followed for analyzing the average Uribe ranking, the collective El Guayabo ranking and the two collective rankings of La Romelia done by women and men respectively, involve only step (iii) onwards. The raw data is shown in Table A1.

*Checking for relationships between different respondents' rankings:*

(i) The rankings were tabulated on a spreadsheet in the computer software application Quattro-Pro, with households numbered 1-87 and each respondent or pair of respondents assigned a letter from A-N;

(ii) Using the statistical software package SPSS, Spearman's rank correlation coefficient was computed for every pair of rankings. This is a two-tailed test, checking for both positive and negative relationships, with 90% significance represented by \* and 95% represented by \*\*. The results are shown in Table A2.

### *Checking for a relationship between SISBEN and wellbeing rankings*

(iii) Positive correlations having been established between individual respondents' rankings in every case, an average wellbeing ranking was computed for each household in Uribe by adding all values and dividing by the total number of rankings for each household (usually 14 but less in some cases because of non-response).

(iv) Average wellbeing rankings, now expressed as fractions of 1, were inverted and rescaled to make them comparable with the SISBEN scores which range from a low of 7 (poorest) to a high of 54 (best off). This was done using a simple equation, so that the household with the lowest average ranking (poorest) has a value of 0 and that with the the highest (best off) has a value of 1. Since Spearman's test checks for correlation between rankings rather than between absolute values, it was not necessary to rescale the wellbeing rankings to match the values of SISBEN scores.

(v) In cases where two SISBEN scores were assigned to one household because it contained two family units, these scores were generally similar, and it could be assumed that rankers had given an average ranking of all people living under that roof, so an average was taken. Where a SISBEN score is missing for a particular household because it was omitted from the survey, Spearman's test treats this as a missing value and discards that particular pair of values (wellbeing ranking and SISBEN score) from the test.

(vi) Average wellbeing rankings were then tabulated alongside the Uribe households' SISBEN scores, and Spearman's rank correlation test applied.

(vii) For El Guayabo only one wellbeing ranking was obtained, that conducted collectively by women. For La Romelia two were available, conducted collectively by women and men respectively. Before testing for relationships between the La Romelia wellbeing rankings and SISBEN

scores, the wellbeing rankings had to be converted to make them comparable with SISBEN scores. This was done in this case by inverting them and rescaling them to values between 0 (poorest) and 3 (best off), assigning a value of 0 to those households placed in the lowest wellbeing group; 0.5 to those placed in the intermediate wellbeing group, and 1 to those placed in the highest wellbeing group.

(viii) Spearman's rank order correlation test was then applied to the following sets of data:

- El Guayabo SISBEN scores and women's wellbeing ranking;
- La Romelia SISBEN scores and women's collective wellbeing ranking;
- La Romelia SISBEN scores and men's collective wellbeing rankings.
- La Romelia women's and men's rankings, to check for a relationship between them.

### *Interpretation of results*

Spearman's rank correlation test compares two rankings and shows their relationship in the form of a computed coefficient between -1 and +1, thus indicating both the strength and the direction (positive or negative) of the correlation between the two rankings. A coefficient of -1 or +1 indicates a perfect relationship, negatively or positively respectively, between the two variables. The closer the coefficient  $r$  is to 1, the stronger the relationship between the two variables. As a gauge of strength of relationship, a rule of thumb for interpreting the coefficients might be that coefficients of  $>0.5$  indicate that the ranking of more than half of the values matched, and coefficients of  $<0.5$  indicate that the ranking of less than half of the values matched. Where the statistical significance of the result is less than 90%, whatever the coefficient the result should be regarded as showing no significant correlation.

Table A1: Households, SISBEN scores and wellbeing rankings of Uribe (average), El Guayabo & La Romelia

#### **URIBE**

<b>Household</b>	<b>SISBEN</b>	<b>avWR</b>
1	39	0.059524
2	28	0.202381
3	29	0.128205
4	29	0.128205
5	43	0.230769
6	36	0.74359

7	39	0.038462
8	43	1
9	41	0.846154
10	38	0.25641
11	32	0.141026
12	37	0.928571
13	33	0.910256
14	28	0.486111
15	32	0.512821
16	25	0.205128
17	32	0.551282
18	30	0.166667
19	-	0.263889
20	22.5	0.809524
21	17	0.75641
22	33	0.75
23	29	0.666667
24	41	0.410256
25	26	0.282051
26	30	0.464286
27	-	0.392857
28	32	0.654762
29	20	0.064103
30	49	0.738095
31	42	0.607143
32	33	0.380952
33	37	0.897436
34	19	0.641026
35	29	0.488095
36	34	0.242424
37	42	0.051282
38	38	0.75641
39	26	0.483333
40	40	0.358974
41	35	0.435897

42	19	0.069444
43	11	0.192308
44	13	0.261905
45	19	0.416667
46	12	0.142857
47	14	0.055556
48	14	0.136364
49	30	0.272727
50	-	0.616667
51	13	0.097222
52	24	0.178571
53	43	0.809524
54	54	0.821429
55	11	0.192308
56	37	0
57	10	0
58	27	0.642857
59	29	0.435897
60	31	0.474359
60	30	0.474359
62	14	0.285714
63	14	0.440476
64	11	0.319444
65	19	0.3
66	11	0.142857
67	20	0.435897
68	20	0.348485
69	21	0.230769
70	18	0.128205
71	23	0.571429
72	20	0.263889
73	38	0.761905
74	16	0.097222
75	17	0.107143
76	9	0.089744

77	26	0.180556
78	22	0.805556
79	21	0.722222
80	10	0.166667
81	22	0.433333
82	18	0.361111
83	9	0.104167
84	17	0.12963
85	21	0.416667
86	-	0.314815
87	22	0.166667

**EL GUAYABO**

Household	SISBEN	WRW	WRW1
1	37	2	2
2	31	1	3
3	29	2	2
4	27	1	3
5	25	2	2
6	25	3	1
7	24	1	3
8	24	2	2
9	24	2	2
10	22	1	3
11	21	2	2
12	20	2	2
13	20	3	1
14	19	2	2
15	17	3	1
16	17	3	1
17	15	2	2
18	15	3	1

19	27.5	2	2
20	-	3	1
21	-	3	1
22	-	1	3

**LA ROMELIA**

Household	SISBEN	WRW	WRM	WRW1	WRM1	avWR
1	35	3	3	1	1	1
2	34	1	1	3	3	3
3	34	1	1	3	3	3
4	30	1	2	3	2	2.5
5	30	2	3	2	1	1.5
6	29	3	3	1	1	1
7	27	3	3	1	1	1
8	26	2	3	2	1	1.5
9	25	2	3	2	1	1.5
10	25	2	3	2	1	1.5
11	24	2	3	2	1	1.5
12	24	2	2	2	2	2
13	22	2	2	2	2	2
14	22	2	3	2	1	1.5
15	20	1	2	3	2	2.5
16	20	3	3	1	1	1
17	18	1	1	3	3	3
18	18	1	1	3	3	3
19	18	2	2	2	2	2
20	17	2	2	2	2	2
21	17	2	2	2	2	2
22	14	3	2	1	2	1.5
23	14	2	2	2	2	2
24	13	3	3	1	1	1
25	11	3	3	1	1	1
26	-	3	3	1	1	1

27	-	2	2	2	2	2
28	-	2	2	2	2	2
29	-	3	3	1	1	1
30	-	3	3	1	1	1
31	-	3	3	1	1	1

**Notes:**

- = missing value. Household omitted from SISBEN survey, or available data invalid

SISBEN = SISBEN score of household

avWR = average wellbeing ranking, obtained for Uribe households by taking average of ≤14 individual rankings of that household; and for La Romelia households by taking average of the two collective rankings by women and men respectively

WRW = raw data from collective wellbeing ranking by women

WRM = raw data from collective wellbeing ranking by men

WRW1 = collective wellbeing ranking by women, converted to make it comparable with SISBEN score by inverting direction so that poorest score 0 and best off score 3

WRM1 = collective wellbeing ranking by men, converted to make it comparable with SISBEN scores, so that poorest score 0 and best off score 3

Table A2: Results of Spearman's rank order correlation tests on fourteen wellbeing rankings in Uribe

----- SPEARMAN CORRELATION COEFFICIENTS -----													
B	.5499**												
C	.5213**	.8792**											
D	<b>.4891**</b>	.6284**	.6087**										
E	<b>.4901**</b>	.6334**	.5797**	.5022**									
F	<b>.4275**</b>	.5258**	.6383**	<b>.4740**</b>	.6149**								
G	<b>.4593**</b>	.6644**	.6857**	.6002**	.5794**	<b>.4775**</b>							
H	<b>.2624*</b>	<b>.4354**</b>	<b>.4570**</b>	.5239**	<b>.4699**</b>	<b>.4084**</b>	<b>.3929**</b>						
I	.5124**	.6648**	.6086**	<b>.4732**</b>	.6806**	<b>.4057**</b>	.5418**	<b>.4536**</b>					
J	.5670**	.5141**	.5827**	.5817**	.5858**	.5357**	<b>.4928**</b>	<b>.4209**</b>	.5982*				
K	<b>.4970**</b>	.5695**	.6254**	.6090**	.6624**	<b>.4933**</b>	.5805**	<b>.4363**</b>	.6945**	.6668**			
L	<b>.4736**</b>	.6660**	.6913**	.7184**	.6723**	.5835**	.6681**	.5270**	.6519**	.6796**	.7664**		
M	.5246**	.7132**	.7278**	.5341**	.7118**	.6441**	.6457**	<b>.4136**</b>	.6967**	.6432**	.6502**	.7387**	
N	<b>.4844**</b>	.6013**	.6089**	.5698**	.6998**	.5153**	.5728**	<b>.3796**</b>	.7391**	.6937**	.7064**	.6970**	.7350**
	A	B	C	D	E	F	G	H	I	J	L	M	N

\* - Signif. LE .05    \*\* - Signif. LE .01    (2-tailed)    " ." is printed if a coefficient cannot be computed



**Notes:** See above for details of Spearman's test and interpretation of results. Of the 91 coefficients in Table A2, only 24 are below 0.5 (shown in bold on the table). Of these, 11 relate to one respondent (H). Since all but 2 of the 13 coefficients relating to respondent H are below 0.5, this ranking may be considered anomalous, and discarded. This leaves a total of 78 coefficients, of which only 13 (83%) are below 0.5, indicating considerable consistency between the views of 13 individual wellbeing rankers in Uribe.

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