Fixing the Hole in the Bucket: Household Poverty Dynamics in the Peruvian Andes

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ABSTRACT

Achieving the Millennium Development Goal of halving poverty will require simultaneous action on two separate fronts: helping poor people escape *from* poverty, and stemming the flow of people *into* poverty. This article examines forty Peruvian communities, and finds that descents into poverty have occurred alongside escapes in every one of them. Escape and descent are asymmetric in terms of reasons: while one set of reasons is responsible for escapes from poverty, another and different set of reasons is associated with descent. Making progress in poverty reduction will require measures to accelerate escapes whilst at the same time slowing down descents. The article looks at the different policies which will be required to serve these two separate purposes.

INTRODUCTION

Recent investigations into poverty conducted in different regions of the developing world show a two-way flow: some poor households have successfully made an escape out of poverty, but at the same time, some previously non-poor households have fallen into poverty.[1] Everywhere that such investigations have been conducted, movements in both directions are in evidence concurrently.

Between August and October 2004, we undertook a study of household poverty dynamics in forty rural communities of the Andean highlands of Peru

1. See, for example, Baulch and Hoddinott (2000); Carter and May (1999); Deininger and Okidi (2003); Glewwe and Hall (1998); Hentschel and Waters (2002); Krishna (2004); Sen (2003).

to ascertain how different households have fared over time in these regions. We utilized the Stages of Progress methodology (discussed below), which has been used earlier for similar studies conducted in different parts of India, Kenya and Uganda (Krishna 2004, 2006; Krishna et al. 2004, 2005, 2006). A locally relevant understanding of poverty is important for this method. People identified as being poor according to standardized monetary measures do not always consider themselves poor in their own terms (McGee, 2004). Relatively little overlap exists between categories of the poor identified using self-perceptions and monetary measures (Chambers, 1995; Franco and Saith, 2003; Jodha, 1988; Laderchi et al., 2003).

People in poverty do not usually sit idly, waiting for economic growth or programme benefits to come their way. Instead, they adopt numerous strategies to combat the poverty in their midst (Narayan et al., 2000; Sen, 1999). What they fight to overcome, however, is not poverty as it is defined and measured by professional analysts (in global terms, such as dollars per day or calories per day). Rather, these household strategies are targeting poverty as it is understood and defined locally. In order to understand household strategies, it is therefore important to start with the people's own understandings of poverty. Without knowing what it means for someone to be 'poor' within a certain societal context, it is hard to understand what poor people do to cope; and without understanding what poor people are doing themselves, it is hard to provide any meaningful assistance.

Utilizing the local definition — which, interestingly, was found to be the same across the forty communities studied — we found that households in these communities have experienced quite dissimilar fates. While some formerly poor households have found a way out of poverty, some formerly non-poor households have become impoverished during the same period: in other words, escapes out of poverty have occurred alongside descents into poverty.

The pool of people in poverty shifts: new poverty is created even as old poverty is overcome. In order to tackle overall poverty, therefore, descents must be cured before escapes can be assured. There is a hole at the bottom of the bucket through which households slip into poverty: this hole must be fixed so that new poverty is not constantly created. Poverty dynamics are context-specific, so anti-poverty policies also need to be specifically targeted.

The next section of this article discusses the setting of the case studies, including site selection and methodology. The following section then examines the rates of escape and descent observed over two different time periods — the last ten years and the last twenty-five years. The longer time period corresponds roughly to one generation. Given that households tend to formulate their own anti-poverty strategies with generational time horizons in mind, we decided to consider the longer time period as well as the shorter, ten-year timeline for all 3,817 households currently resident in the forty communities.

The article then goes on to examine the reasons for ascent and descent that were explored in the cases of 1,041 households, which were selected by a process of random sampling. Different reasons are associated with descents into poverty and escapes out of poverty. Clearly, therefore, different policies are required to deal with these two separate dynamics. The article concludes with a brief overview of policy implications.

CASE STUDY: METHODOLOGY AND LOCATION

This study was carried out with a group of forty communities in two regions of the Peruvian Andes: Cajamarca and Puno (see Figure 1). These regions were selected because they are among the poorest in the country, as identified

Figure 1. Study Sites

PROVINCES

Cajamarca
Cajamarca
Hualgayoc
Celendín
San Marcos
Cajabamba

Puno
Azángaro
Melgar
Moho
El Collao

by different analysts.[2] In addition, livestock is an important part of the rural economy, and studying the role of livestock *vis-à-vis* poverty reduction was an important aspect of this project.[3]

Within each region we selected twenty diverse communities. This selection of communities attempted to capture diversity with respect to five criteria: altitude, livestock activity, market access, size of community and (especially in the Puno region) ethnic group and language. Geographically, the communities range from 1,900 m above mean sea level (the lowest) to 4,500 m for the highest. Economic activity varies as a result; for example, households in lower-lying communities are more dependent upon cattle-raising as a principal activity, while communities at much higher altitudes are more dependent upon alpacas. Market access also varies considerably. At one end of the spectrum are communities such as El Aliso, which can be accessed only by a steep and narrow foot trail and is 12 km away from the nearest market town, Pizon. At the other end are communities such as Cochapampa, only 2.5 km by all-weather road from the market town of Cochilla and with regular bus services. The number of households per community varies from a low of 41 (in Santa María) to a high of 441 (in Hayrapata). Ethnic group and language also vary. Spanish is the spoken language in the Cajamarca communities, while in Puno the selected communities include twelve that are Quechua speaking and eight that speak Aymara. This mix of villages is not representative in the statistical sense of the term, but it does represent different patterns of rural settlements that are commonly found in these regions.[4]

A total of 3,817 households were resident in the villages at the time of the fieldwork; by following the participatory, community-based methodology outlined below, we reconstructed a poverty trajectory followed by members of each household over the previous twenty-five years. In addition, for a random sample of households — 1,041 households in all — we ascertained the reasons associated with their particular trajectories.

Two teams of twelve individuals carried out the investigations in Puno and Cajamarca. The teams trained together for ten days in the Stages-of-Progress methodology, also going out to two communities to learn how to implement the methodology in practice. Some changes were made and the methodology was adapted in part to better suit the particular circumstances of these highland Peruvian communities. The refined methodology, described briefly below, was then applied in each of the forty selected communities.[5]

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2. For example, CONDESAN (2003); FONCODES (2001); UNDP (2002); Escobal and Valdivia (2004).
3. Detailed results relating to livestock, such as the contributions of different species, will be presented in a separate paper, Here, we deal more centrally with the two-way dynamics of poverty.
4. The complete list of forty communities together with their relevant characteristics can be obtained on request from the authors.
5. A more detailed description of this methodology, including a training manual and results from other applications, can be seen at the web site: www.pubpol.duke.edu/krishna

The Stages of Progress Methodology

Step 1: Assembling a representative community group

Prior information was provided by letters of invitation written ahead of time to the authorities of the communities studied. Upon arrival in the community, contact was made first with these local authorities (including the Lieutenant Governor, Municipal Agent, Neighbourhood Mayor or President of the *Campesino* Security Patrol). A representative community group was convened separately in each village; at least thirty members of each community and as many as eighty in some cases took part in these meetings. This group of participants was made up of men and women of different ages, and they participated actively in these discussions. We took particular care to ensure that poorer and lower status community members were present at these meetings. In some communities, women needed additional encouragement to participate. Members of the study teams were assigned to work specifically with women.

Step 2: Presenting our objectives

We introduced ourselves as researchers, and made it clear that we did not represent any government agency or NGO, so there would be no benefits (or losses) to anyone who spoke freely and frankly with us. This was important in order to remove any incentives people might have had for misrepresenting the poverty status of any household in their village.[6]

Step 3: Defining 'poverty' collectively

We asked community groups in each village to consider the situation of an extremely poor household, and we asked them to delineate the locally applicable stages that such a household typically follows on its pathway out of poverty. What does a poor household in your community typically do, we asked the assembled villagers, when it climbs out gradually from a state of acute poverty? Which expenditures are the very first ones to be made? 'Food' was the answer in every community that we studied. Which expenditures follow immediately after? 'Some clothes' we were told almost invariably. As more money flows in incrementally, what does this household do in the third stage, in the fourth stage, and so on? Lively discussions

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6. A few communities, particularly those that felt deceived by outsiders in the past, were initially somewhat reticent about taking part. Once they began to see the value of the results themselves, however, they also participated with interest in the discussions. They were keen to identify factors that cause and factors that cure poverty. However, we did have to spend more time with these communities at the start, carefully explaining the objectives and utility of this exercise.

Table 1. Stages of Progress

1	Food	
2	Some clothes	
3	Basic housing/house repairs	
4	Small animals (chickens, guinea pigs)	
5	Basic education for children	
6	Purchase small plot of land	
7	Indigenous breeds of livestock (sheep, cattle, alpacas, llamas)	*Poverty Cut-off*
8	Purchase larger plot	
9	Improve/expand house	
10	Improved breeds, larger animals	
11	Secondary/tertiary education	
12	Small business	
13	Buy plot/house in city	

ensued among villagers in these community groups. However, the answers that they provided, particularly about the first eight to ten stages of progress, varied little across all the communities. After drawing up the progression of stages in each village, the poverty line was determined. When drawing their poverty line, community members were asked 'at what point in the stages of progress that you have defined do you consider a household in this village to no longer be poor?'. The placement of the poverty cut-off, and also the nature of the seven stages below this cut-off, did not vary at all across the forty communities. Some differences did arise in the exact order that different communities gave to these first seven stages. There was no difference, however, in the identification of these items, indicating that poverty in the forty village communities commonly signifies a lack of the same assets and commodities.

Table 1 presents these stages and the common poverty cut-off. Lack of food, clothing and basic housing, and inability to possess even smaller or indigenous breeds of animals, to have even a small piece of land, and to provide for even basic education for children, define the conditions of poverty as locally understood in all forty communities.[7] Once households are at the stage of being able to purchase a larger plot of land, they are no longer considered to be poor in these Peruvian villages. This is a commonly known and widely agreed-upon understanding of poverty, and this everyday understanding of poverty is much more real for these villagers than any definition proposed from the outside.

Working with this local yet common and comparable understanding of poverty is thus helpful for better understanding the strategies that households adopt to deal with poverty (as they know it). Community groups developed

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7. Stages of progress higher than the poverty cut-off vary considerably more among these forty communities. Table 2 indicates the most common progression of Stages 8 through 13. These differences in higher-level stages are not material, however, either to the identification of poor households or to the analysis of reasons presented below.

these criteria among themselves, and used them to classify which households were poor at the time of the research and which households were poor at two earlier points of time.[8] The next few steps indicate how this classification exercise was conducted.

Step 4: Treating households of today as the unit of analysis, inquiring about households' poverty status today, ten years ago, and twenty-five years ago

In this step, a complete list of all households in each village was prepared. In some cases, the local authorities had prepared this list in advance, as we had requested in our initial letters. In other cases we had to prepare this list after arriving in the village. This list of households and the locally applicable stages of progress were recorded in large letters on flip charts that were pasted prominently for all assembled members to see. Referring to the shared understanding of poverty developed in the previous step, the assembled community groups identified separately for each household its stage at the present time, its stage ten years ago, and its stage twenty-five years ago.[9]

Households of today formed the units of analysis for this exercise. When we asked about poverty today, we spoke in terms of households that exist today, and when we asked about poverty ten years or twenty-five years ago, we asked with reference to members of the same households. Households today and households twenty-five years ago are not strictly comparable, nor can they ever be strictly compared in this type of exercise. While some present-day households, particularly those headed by older villagers, existed twenty-five years ago, many younger households did not exist at that time; individuals were still living in their parents' or guardians' households twenty-five years ago, and in their cases we asked about poverty in relation to these earlier households. What we were examining in such cases was inherited versus acquired status. Did a person who was born to poverty remain poor, or had s/he managed to escape from poverty in the past twenty-five years? Is another person who was part of a non-poor household twenty-five years

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8. Community groups also drew a second poverty cut-off, usually after Stage 11, indicating a level above which households are considered relatively well-off. The analysis that follows works with the first poverty cut-off, i.e., the one that communities constructed after Stage 7, which represents the shared common denominator of severe poverty in these villages.
9. We needed a common event in order to denote clearly and commonly the two earlier periods. We referred wherever possible to a national political event (the second government of President Belaunde and the re-election of President Fujimori, respectively). However, members of some communities were uncomfortable with reference to political events such as these, and in these communities we defined ten years ago and twenty-five years ago with reference to the age of the oldest present member. The intent in each case was to have a common point of reference for all present to consider while thinking back to the earlier periods.

ago still non-poor, or has his/her household acquired poverty anew during this time?[10]

Step 5: Assigning households to particular categories

After ascertaining their poverty status for the present time, for ten years ago and for twenty-five years ago, each household was assigned to one of four separate categories:

- Category A: poor twenty-five years ago and poor now (*remained poor*)
- Category B: poor twenty-five years ago but not poor now (*escaped poverty*)
- Category C: not poor twenty-five years ago but poor now (*became poor*)
- Category D: not poor twenty-five years ago and not poor now (*remained not poor*).

A separate categorization was also developed, which compared households' stages ten years ago and today. In the next section, we present results related to both time periods separately.

Step 6: Inquiring about reasons for escape and reasons for descent, for a random sample of households

Reasons associated with upward and downward movements were ascertained in this step. We took a random sample of about 25 per cent of all households within each category, and inquired in detail from the community groups about causes and contributory factors associated with each such household's trajectory over the past twenty-five years. These event histories were compiled for each selected household. They were reaffirmed through separate interviews with individual members of the selected households.[11]

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10. Some such assumption about unit of analysis is necessary for all longitudinal studies. While panel-data studies usually consider earlier-period households as their units of analysis, the Stages of Progress method considers later-period households. The latter method fails to capture households of twenty-five years ago from which no single member survives in the community at the present time, and some bias is likely on this account. A corresponding but opposite bias affects panel-data studies, where newly-formed households are excluded from consideration.

11. Households do not move into or out of chronic poverty for one reason alone, so getting at the sequence of events/factors/circumstances is a very challenging aspect of this method. Probing is the technique used, and the enumerators were intensively trained in methods that allowed them to: 1) understand as fully as possible the reason being given, such as 'diversification of income through what means?'; 2) understand as fully as possible the sequence of events, for instance, 'you received an inheritance, and invested it in what?' Or, 'You say you bought a dairy cow and the steady income has helped your household: how were you able to buy the dairy cow?'.

Step 7: Following up by interviewing household members

At least two members of each household selected were interviewed separately in their homes. Members of the study team spoke individually with each household member. Thus multiple sources of information were consulted for ascertaining reasons associated with the trajectories of each selected household. Discrepancies, if any, were cross-checked and triangulated between the community groups and individual households.

Completing these investigations within each selected community took two to three days, depending on the size of the community. The community assembly was held on the first day, and lasting for an average of five hours, while the next two days were utilized for household interviews and data compilation. The Stages-of-Progress method provides a useful methodological device — a benchmark or yardstick — for placing households within these four separate categories and for assessing how high up the ladder of material prosperity a particular household has climbed within a particular region. Compiling these trajectories of stability and change helped us to assess the overall poverty situation over time. More importantly, learning about the *reasons* for change in each individual case helped to identify chains of events that were associated, respectively, with escaping poverty and falling into poverty.

Uncovering and working with a locally relevant definition of poverty was very useful for these purposes. People understood these poverty measurements clearly, and they could relate to the changes that were described for each of them. Because each stage represents a large or lumpy movement, and because it refers to some easily remembered achievement or possession, household members could quite easily recall their previous status in terms of stages of progress. We worked in rural communities that are quite close-knit and that have lived together for long periods of time, so community members could also recall and verify each other's status in previous periods.[12]

While quantitative approaches to poverty appraisal have tended to dominate policy debates of the past decade, there is increasing recognition of the value of qualitative approaches. The use of qualitative methods, particularly by development agencies and policy makers, has been on the increase (Narayan et al., 2000), with the two approaches seen as highly complementary in addressing complex poverty issues. There have recently been calls for more mixing of approaches and for those in the qualitative tradition to include more numerical information and statistical analyses (Kanbur, 2001). Recognizing that the qualitative–quantitative divide is in fact more complicated, poverty researchers from both camps re-characterized the two traditions along five

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12. A residual category (Category E) was available for consigning households whose material status could not be verified for a previous period. This category only had to be used in four of the forty communities with, overall, less than 2 per cent of the 3,817 households being assigned to this category.

different dimensions (in the parentheses, we have indicated our methods in each case):

1) Type of information on population: non-numerical to numerical (both, with a lot of effort put into quantifying some of the qualitative information).
2) Type of population coverage: specific to general (specific, with site selection not based on a statistical frame, but based strategically on criteria to allow some extrapolation of results).
3) Type of population involvement: active to passive (both).
4) Type of inference methodology: inductive to deductive (both).
5) Type of disciplinary framework: broad social sciences to neo-classical economics (broad social sciences).

Thus the Stages-of-Progress method cannot be categorized as either qualitative or quantitative, but as a mixture of both. As such, it captures many of the advantages of quantitative approaches, such as the ability to aggregate numerical information. However, it is not based on a statistical sampling frame and thus cannot be said to be representative of the entire country, although site selection was done strategically using certain criteria to allow some extrapolation of results (that crosses borders). The more active and communicative nature of the approach leads to results immediately useful to the poor themselves, and thus is much less 'extractive' than traditional quantitative poverty approaches.

Oral histories present challenges of reliability and require triangulation. This is why the Stages-of-Progress approach triangulates the reasons for household poverty status and movements at both the community and household levels. Distinct stages, or investments that community households make as they progress out of poverty, are defined. These stages are visible to all in the community, so community members are able to say which households are at each stage, both now and in the previous time periods chosen. The risks associated with subjective responses (such as a common feeling that 'everything was better in the past') become limited because of these empirical referents that are openly discussed and verified.

This local definition of poverty is closely related to some other indicators, more usually utilized to rank differences in material status. For instance, there is a monotonically increasing relationship between household stage and average number of assets owned, as Table 2 shows. This close correspondence between stages and asset ownership suggests that our method of assessing poverty is not dissimilar to the asset-based approach proposed by Carter and Barrett (2004). These figures also suggest that communities' rankings of households in terms of stages correspond quite closely to *material* poverty. Other dimensions of poverty, including social exclusion and political disempowerment, are not directly reflected within these assessments.

Table 2. Households' Stages and Average Asset Ownership

Stage at present time	Average number of assets
1	1.33
2	1.90
3	2.37
4	2.88
5	3.11
6	3.31
7	3.58
8	4.07
9	4.56
10	4.62
11	5.27
12 and higher	5.78

We found that the most important validation of the method came from the community response — that is, the community's degree of involvement and appreciation of the knowledge gained by going through the exercise with the research team. As Kanbur (2001) points out, the 'tensions are ever present' between those that believe in the quantitative, neo-classical economics approach as compared to a qualitative, more participatory approach. However, it is inappropriate to directly compare the income/expenditure approach (measuring flows) to the Stages-of-Progress approach (measuring certain assets, or stocks). Shaffer (2002) points out that different validation methods are required for the consumption approach to poverty measurement (which relies on the notion of an idealized subject whose personal predilections and prejudices do not affect research outcomes), as compared to the participatory poverty approach (which rejects the notion of an idealized subject because subject and object are inextricably entwined via the dialogue approach taken). Accordingly, Shaffer suggests, truth or validity in the participatory approach relies on the notion of an 'ideal speech situation': has the voice of the 'invisible' poor been heard, has a genuinely participative dialogue taken place? In other words, validation of our approach should focus on the approach itself, and not on trying to compare the results of two methods based on 'different epistemological positions taken by the approaches with regard to the basic unit of knowledge and validity criteria' (Shaffer, 2002: 4).

THE CASE STUDY: RESULTS

Even in these poorest regions of Peru, large numbers of households have made an escape from poverty. The dark side, however, is that large numbers have also fallen into poverty.

Among the 3,817 households resident in the forty communities studied, 38 per cent were poor ten years ago, and 28 per cent are poor at the present time. Overall, therefore, there has been an improvement of 10 per cent.

Considering the longer twenty-five-year period, poverty has fallen even further, from 47 per cent in 1979 to 28 per cent at the present time. Paralleling the overall national trend, poverty in these forty communities has declined consistently (Altamarino et al., 2004; Laderchi, 2001; World Bank, 1999), and a net improvement of 19 per cent has been experienced over the twenty-five-year period.[13]

Quite disparate fates were met, however, by different households within the same communities. While 10 per cent of households escaped from poverty over the past ten years, another 8 per cent of households simultaneously fell into poverty. This distinction between escape and descent is even sharper when one considers the longer period of twenty-five years: 29 per cent of households escaped poverty during the twenty-five-year period (from 1979 to 2004), but another 10 per cent of households became impoverished in that time.

The identities of the poor changed because of these simultaneous movements. Not all presently poor households have always been poor. Of the 28 per cent of households that are poor at the present time, 18 per cent have remained poor over the twenty-five-year period, and another 10 per cent have fallen into poverty anew during this period. More than one-third of currently poor households (35 per cent, or 10/28) were not always poor — they have joined the ranks of the poor during the last twenty-five years.

Thus, even as governments, NGOs, donors and other agencies are devoting resources toward the reduction of poverty, new poverty is being created concurrently. Reducing descents into poverty more expeditiously through appropriate policies and programmatic supports will be critical for achieving the Millennium Development Goal of halving and eventually eliminating poverty. We will discuss in the next section what policy changes should help achieve this goal in these two regions.

Table 3 presents the trend data for the last ten and twenty-five years. Quite large differences in trends are apparent between communities of the two different regions. Over the past ten years, while 13 per cent of households in Cajamarca communities escaped poverty and 11 per cent fell into poverty, a much higher proportion of households in Puno (24.5 per cent) escaped from poverty, and a much lower proportion (just 5 per cent) fell into poverty. Overall, households in poverty fell from 36 per cent to 34 per cent in the twenty Cajamarca communities, and from 41 to 21 per cent in the twenty Puno communities over the past ten years.

Over the twenty-five-year period, too, households in the Puno communities have fared better, on average, compared to households in the Cajamarca

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13. These figures are higher than the national average of 15 per cent for extreme poverty in Peru, but they are consistent with the corresponding figure for the Sierra Rural area, which is 30.2 per cent (UNDP, 2002). There are some differences between estimates provided by different sources, in particular, between ENAHO and ENNIV estimates (see Altamarino et al., 2004; Escobal and Valdivia, 2004).

Table 3. Poverty Trends over the Past Ten and Twenty-five Years (% of households)

Region	Remained Poor	Escaped Poverty	Became Poor	Remained Not Poor	Poor at the Start of the Period	Poor at the End of the Period
Last ten years (1994–2004)						
Cajamarca	22.9	12.8	10.9	53.4	25.7	33.8
Puno	16.1	24.5	5.4	54.0	40.6	21.5
Both Regions	19.5	18.6	8.1	53.7	38.1	27.6
Last twenty-five years (1979–2004)						
Cajamarca	18.7	17.1	15.1	49.2	35.8	33.8
Puno	16.8	42.0	4.7	36.5	58.8	21.5
Both Regions	17.8	29.4	9.8	43.1	47.2	27.6

Table 4. Variation among Villages within the Same Region, Province and District

	Percentage of Households (past ten years)			
	Remained Poor	**Escaped Poverty**	**Became Poor**	**Remained Not Poor**
Miguel Iglesias District, Celendin Province, Cajamarca Region Village				
Alto Peru	9.1	**23.6**	**12.7**	54.5
El Aliso	51.5	**13.6**	**13.6**	21.2
Campo Alegre	9.4	**6.3**	**17.2**	67.2
Azanaro District, Azangaro Province, Puno Region Village				
Tiruyo	12.5	**26.8**	**3.6**	57.1
Alto Huaraconi	4.4	**8.9**	**8.9**	77.8
Santa Maria	2.4	**4.9**	**9.8**	82.9

communities. Twenty-five years ago, poverty was much higher in the twenty Puno communities, at 59 per cent, compared to 36 per cent in the twenty Cajamarca communities. At the present time, however, average poverty is 21.5 per cent in these Puno communities, and it is much higher, 34 per cent, in the Cajamarca communities. Differential rates of escape and descent have reversed the relative positions of communities in Puno compared to communities in Cajamarca.

Similar differences are apparent at lower levels of aggregation, and even within the same province and district, communities differ considerably in terms of escape and descent. Table 4 shows some illustrative figures from one district in each region. Over the past ten years in the community of Alto Peru of Miguel Iglesias district in Celendin province of the Cajamarca region, poverty fell: 24 per cent of households escaped from poverty in this community, while only 13 per cent fell into poverty during this period. Very different trends were observed, however, in two other communities of the same province and district. Poverty remained constant in El Aliso community;

and it actually increased in Campo Alegre: 6 per cent of households in this community came out of poverty, but as many as 17 per cent became poor during the same period. A similar pattern of reduced poverty, constant poverty, and increased poverty is revealed by three communities in Azangaro district of the Puno region — Tiruyo, Alto Huaraconi, and Santa Maria.[14]

Considering only the net figures for a region or a country has the effect of averaging out and obscuring these quite dissimilar trends. Powerful currents are at work below the surface, and decentralized rather than aggregated studies are more helpful to understand these trends. Substantial movements into and out of poverty have occurred even in communities — such as El Aliso and Alto Huaraconi — where net poverty has remained constant over the past ten years. In El Aliso, 65 per cent of households were poor ten years ago, and 65 per cent are poor at the present time, but it is not the same people who were poor then and now. In fact, 27 per cent of households moved out of or into poverty in El Aliso, and the composition of the poor changed considerably during this period. The situation can hardly be described as static, although looking only at the figure for net change (zero) would indeed convey a static picture.

Considering escape and descent separately is essential for figuring out the changes that actually happened in any community, region or country. As these results show, decentralizing and adopting a sufficiently long time period are also important. The extent of change is more readily apparent when a longer time period is considered. Table 5 divides the twenty-five-year period into two sub-periods, from 1979 to 1994, and from 1994 to 2004. Households' movements are represented in terms of the numbers of stages that different households either rose or fell in each sub-period.[15] In either sub-period about one-third of all households remained static, that is, they stayed in the same stage from the beginning to the end of this period. Over the entire period of twenty-five years, however, this percentage falls: only 21 per cent of households experienced no change in stage over the twenty-five-year period.

In general, the larger the change in stage of progress, the greater is the percentage of households which experienced it over the longer period compared to the shorter sub-periods. For example, while only 0.4 per cent of households experienced a positive change of eight stages or more during the first sub-period, three times as many households experienced this extent of change over the twenty-five-year period. Change in the first sub-period is not

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14. That very different poverty trends can be observed among and even within communities in the same region has also been observed elsewhere by Elbers et al. (2004) and Jayne et al. (2003).

15. While lower-level stages, especially those below the poverty cut-off, are similar across all forty villages, higher-level stages tend to vary somewhat. The variable, Stage Change, or number of stages moved between two years, is therefore not strictly comparable across villages, and it should be treated as an approximate indicator of the extent of movement experienced by a household.

Table 5. Households and Change Over Time (% of households in both regions)

Number of Stages Moved	First Sub-Period (1979–94)	Second Sub-Period (1994–2004)	Entire Period (1979–2004)
≤−8	0.4	0.5	1.0
−7	0.6	0.3	0.8
−6	1.4	0.9	1.6
−5	1.2	1.1	1.6
−4	3.2	2.4	3.3
−3	3.0	2.8	4.1
−2	4.9	4.1	5.2
−1	6.6	6.2	6.2
0	34.8	33.0	21.1
1	16.4	13.5	9.6
2	11.9	13.8	11.4
3	7.4	8.1	9.4
4	3.7	6.3	9.1
5	2.4	3.6	6.5
6	1.1	1.6	4.3
7	0.3	0.6	1.8
≥8	0.4	1.0	3.0

usually offset, therefore, by change in the second sub-period. Most ascents and descents are not temporary or reversible occurrences; they tend to persist and harden over time. As many as 12 per cent of households fell by three stages or more over the twenty-five-year period, indicating that poverty in their case is likely to be chronic rather than transitory (Hulme and Shepherd, 2003). Understanding the reasons that are associated with descent will help control descents more effectively in future.

REASONS FOR ESCAPE AND DESCENT

While one set of reasons is associated with escaping poverty, a different set of reasons is associated with falling into poverty. We will discuss each of these sets of reasons in turn.

Descents into poverty mostly occur gradually and cumulatively and not from one moment to the next. No single reason is usually associated with falling into poverty; multiple linked factors propel most descents. Cutting this chain at any one link can severely reduce the incidence and probability of descent. Health is the principal reason associated with the descent in both regions. The majority of Category C households (those who have fallen into poverty), 51 per cent in all, cited ill-health and high healthcare expenses among the three foremost reasons responsible for their descent towards poverty.

The importance of health as a precipitator of descent has also increased over the past ten years. Over the first period (1979–94), health was a factor for 30 per cent of descending households in the Cajamarca communities, and

23 per cent in the Puno communities. Over the second time period (1994–2004), the deleterious effects of health and health expenses increased substantially. For 52 per cent of households in the Cajamarca communities and as many as 67 per cent in the Puno communities, health was a principal reason for descent in the second period. Physical disability added to this number. Another 25 per cent of falling households in the Cajamarca communities and another 18 per cent in the Puno communities included disability as an additional factor associated with descent in the second period. This also became more prominent in the second period compared to the first period.

Reducing descents more effectively — plugging the hole in the bucket — will require paying considerable attention to health-related factors. Not only does ill-health reduce the earning capacity of a household's members, but in the absence of affordable and easy-to-access healthcare facilities, it also adds considerably to the household's burden of expenditure, thereby striking a double blow.[16] This is illustrated by Marcos Honorio Carrera of Cholocal in the district of Cachachi: 'I was much better off than my neighbours when my wife of twenty-five years became ill with cancer of the uterus. I was obliged to sell my animals, cows, oxen, and donkeys, and I also went into debt in order to care for her, and later, bury her. Today, old and sick, I have to find work as a day labourer'.

Social and customary expenses such as marriages and funerals constitute another set of factors often associated with descent. Marriage expenses were cited as an important factor in both regions, affecting particularly younger couples.[17] Over the twenty-five-year period, marriage expenses were associated with 29 per cent of all cases of households falling into poverty. This figure was somewhat higher for communities in Cajamarca, at 32 per cent, and somewhat lower for communities in Puno, at 19 per cent. The salience of this factor has also, like health, increased over time.

There are some differences operating among communities in the two separate regions. Some factors of descent that are important in one region are less important or unimportant in the other. For example, funeral expenses were associated with a considerable number of descents in Cajamarca communities (17 per cent), but not within Puno communities. Accidental loss of assets provides a second example. In communities of Puno, this factor played a part in 21 per cent of descents over the past ten years, but in Cajamarca communities, it featured very rarely. Similarly, land division contributed significantly to descent for 38 per cent of Puno households that have fallen into poverty over the past ten years, but did not feature as a factor of descent

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16. As Leatherman (1996: 477) noted in a previous study in Peru, 'illness is not only a symptom but a catalyst of poverty'.
17. There is a difference in how this term is interpreted in the two different regions. Expenses related to wedding celebrations are more significant in the Puno communities. In Cajamarca communities, however, marriage expenses are more closely related to establishing a new household.

among Cajamarca communities. Nor, indeed, was this factor associated significantly with descents suffered by Puno households during the first time period (1979–94), in spite of its importance for Puno households during the second time period.

Factors associated with descent vary across regions, and they also vary over time. Health, disability and marriage expenses have increased in salience over time as propellers of descent and maintainers of poverty, and land division has assumed importance in Puno though not in Cajamarca communities.

The same factors that induce descent also play a key role for those households that have remained poor (Category A): 39 per cent of households of Category A in Cajamarca communities, and 45 per cent in Puno communities, cited ill health and healthcare expenses as a principal contributing cause for their persistent poverty. Physical disability was mentioned by another 17 per cent of Cajamarca households (but not by many Puno households), while accidental asset loss was mentioned by 17 per cent of Puno households (and not many Cajamarca households).

Households that have escaped poverty (Category B) or that have remained not poor (Category D) over the same period have not been unaffected by these descent-inducing factors. Members of these households have also suffered from ill health, for example, and they have also borne expenses related to marriages and funerals. In their cases, however, the effects of these negative factors have been more than offset by the operation of some positive factors.

One positive factor that has substantially reduced the incidence of descent in Puno communities relates to support from community organizations. This factor was of critical importance among 24 per cent of households that escaped poverty (Category B) in Puno communities and 22 per cent of households that remained not poor (Category D). The availability of such community supports also enabled households in Puno communities to better cope with the effects of negative factors, such as healthcare and marriage expenses. It also enabled them to work together with other community members for undertaking new economic ventures and diversifying income sources.[18] Victor Tapara Ancco of Santa Cruz Sincata in Puno told us:

> When I was a child, my dad and my mom were shepherds of the landowner. We never had land. My brothers and I could only go to primary school and no further. We also grew up working as shepherds . . . I got married, and my wife was also a shepherd . . . Six years ago the community awarded me with a piece of land. Little by little I have bought cattle and now I sell milk to the cheese plant . . . One's own land always helps to be better off, we can have more livestock, and we can live more peacefully. The community also helps when someone is sick or in need. It is through their support that I am better off today.

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18. The role of such community-based social supports is particularly important given the weaknesses in Peru's social security programme, as discerned by observers such as Glewwe and Hall (1998).

It is important to note that similar community supports were not cited by households in Cajamarca, indicating one other source of difference between communities in these two separate regions.

Improvements in physical infrastructure have also helped households pursue diversification with more vigour and higher returns. All but one of the twenty communities that we studied in Puno have motorized road transport services — and all of them obtained these services within the past ten years, which provided another important impetus for escape.[19] This combination of organizational capital and access to basic public services (Attanasio and Szekely, 2001) — strong community organizations and the provision of motorized transport services — is important for understanding why escapes from poverty have been so much higher over the past ten years in Puno communities compared to Cajamarca communities.[20] While 25 per cent of households escaped from poverty in the Puno communities, only 13 per cent of households were able to do so in the Cajamarca communities.

Common to both regions, diversification of income sources has helped lift households out of poverty, with different types of diversification playing a role in each separate region. Diversification through livestock has been most important in Puno, but diversified cropping strategies and new non-agricultural income sources were more important for escape in communities of Cajamarca. Diversification of livestock incomes has been consistently important in communities of Puno, corresponding with 55 per cent of escapes in the first time period and 52 per cent of escapes in the second time period. Rosalia Muñoz Saldaña of Vista Alegre (Cajamarca) told us:

> Twenty-five years ago, I always had livestock, cattle and small animals. I also harvested crops, but for me, livestock is the one that helped me more to improve my living. Livestock, especially cattle, helps . . . When we need something in the family, we can sell an animal. It also helps for my business of cheese . . . Raising more animals we are better off, the problem is that there is not more pasture [and] we need irrigation infrastructure.[21]

Acquisition of additional non-agricultural income sources was the second important escape factor in Puno communities. It was associated additionally with 32 per cent of escapes in the first time period and with 30 per cent of escapes in the second time period. Diversification of crop incomes has not been particularly important for escapes in the Puno region, reflecting the lower productive capacity of agricultural lands in these communities compared to the communities of Cajamarca.

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19. The remaining community, Tisnauyo, at an altitude of 4,400 m, is 14 km away from the nearest market. No motorized form of transportation is as yet available, so residents have to traverse this distance by foot or bicycle.
20. Analysing differences in mean income corresponding to different geographic regions of Peru, Escobal and Torero (2003) also find that public infrastructure levels and household and community assets are critical for understanding these differences.
21. Livestock diversification was not merely a result of improvement, but preceded status improvement in other cases too, as verified during household interviews.

Non-agricultural income sources were numerically most important for escapes in Cajamarca communities. Diversification of crop incomes came next — associated with 45 per cent of escapes in the first time period and with 36 per cent of escapes in the second time period — and diversification of livestock incomes (which was most important for Puno communities) was third in order of importance for Cajamarca communities. Gains from business enterprises constitute the last important factor of escape. This was associated with 27 per cent of escapes in communities of Cajamarca and 22 per cent of escapes in communities of Puno.

Clearly, a number of households in both regions have been diversifying their income sources simultaneously across a range of different activities, including livestock and crops, and many among them also have one or more members making a living in the non-agricultural sector. Household members have gone out to work a trade or an occupation in some city, sometimes close by but often quite far from their home village (Hill, 1988; Sabates, 2000).[22] The burgeoning informal sector has accounted for a large number of these recent rural entrants (de Soto, 1989; Watters, 1994). Households in Cajamarca have particularly benefited from remittances sent back by these city-based members. This factor, also identified in the analysis by Escobal and Valdivia (2004), was associated with 25 per cent of escapes from poverty in the first time period and with 29 per cent of escapes in the second time period in the Cajamarca communities. In the twenty Puno communities, however, this factor was not significantly associated with escape in either time period.[23]

Just as reasons for descent vary across the two separate regions, reasons for escape also differ between Puno and Cajamarca communities. Regionally differentiated policies will thus be required for promoting escapes and for preventing descents. Households of Category D, which have remained not poor, have benefited from the same sets of factors as households escaping poverty. These factors, including diversification of income sources, improved market access, and progress in business have helped Category D households to offset the negative effects brought on by illnesses or customary expenditures. As in the case of households escaping poverty, livestock incomes have been relatively more important in Puno households, while non-agricultural incomes have mattered more in households of Cajamarca.

Factors that were not mentioned as important for significant numbers of relatively successful households include outside assistance from government

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22. As a recent summary report points out, 'rural households that draw their incomes mainly from [a single source] are more apt to lead poor lives' (JICA, 2001: 2).
23. However, permanent migration out of these communities is not reflected in the results presented here. It is a limitation of this methodology in its present form that it cannot take account of households that have migrated out, leaving no trace behind. Because we work with present-day households as our units of analysis, we cannot take account of such households that are no longer part of the community. We hope to overcome this limitation for subsequent field research and welcome readers' suggestions in this regard.

or non-government programmes; more research is needed to explore how much, if any, influence such programmes have had. Altitude, which was suggested to us initially as a likely propeller of poverty, also has no significant influence upon how many stayed poor and how many fell into poverty in these forty communities.

Interestingly, education is also not a predictor of escape or descent. People who have obtained jobs in the city are in general better educated, but all people who are better educated do not have jobs — that is, education might be an important aspect of escaping poverty but it is neither a sufficient condition (not all educated people have jobs) nor even a necessary condition (people have escaped poverty through other means). In similar examinations conducted elsewhere, it has been found that contacts and information matter in addition to education. Where institutional channels providing information are weak, connections based on kinship links/relatives are required for finding jobs and positions (Krishna, 2006). Investments in education alone are likely to be insufficient for raising poor households out of poverty in communities such as these.

Logistic regression analysis helped confirm these findings related to factors significantly associated with upward and downward movements. Using the binary logistic regression procedure in SPSS, we ran two separate regressions to model the probability of escaping poverty and the probability of falling into poverty for each region. First, the analysis was restricted to households that had stayed poor over the twenty-five year period (classified as 0), and households that were poor twenty-five years ago but had managed to escape poverty (classified as 1). In other words, we grouped all households that started out poor in order to examine which factors help explain why some previously poor households escaped poverty, while other poor households continued to remain poor (Table 6).

Similarly, households that were not poor twenty-five years ago but were now poor (classified as 1), and households that had stayed non-poor over the twenty-five year period (classified as 0), were analysed together in order to look at the most important factors that explain why some previously non-poor households fell into poverty, while other non-poor households continued to remain non-poor.

In the first case, the reasons for staying poor and factors mentioned as pertinent to household escapes out of poverty were used as explanatory variables in the regression. In the second case, reasons given for descent into poverty and staying non-poor were used as explanatory variables. The reason/factor-related independent variables were measured as binary variables, that is, equal to one if the reason was mentioned, and 0 otherwise. Table 6 presents results from the first set of analyses, comparing households that remained poor with those that escaped poverty (Categories A and B).[24]

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24. The results from the second set of analyses, comparing households of Categories C and D, are similar in terms of significant positive and negative factors. These results are not

Table 6. Results of Binary Logistic Regression for Escaping from Poverty (households that were poor twenty-five years ago, i.e., Category A and Category B households)

	Coefficient	S.E.	Wald	Significance	Odds Ratio	95% C.I. for Odds Ratio	
						Lower	Upper
Constant	−0.78	0.22	12.67	0.0004	0.46		
Positive Factors							
Diversification (livestock)	1.03	0.30	11.64	0.0006	2.79	1.55	5.03
Diversification (non-agricultural incomes)	2.03	0.73	7.75	0.0054	7.59	1.82	31.64
Diversification (crops)	1.28	0.40	10.11	0.0015	3.60	1.63	7.92
Business Gains	1.77	0.57	9.80	0.0017	5.88	1.94	17.85
Market Access	1.31	0.53	6.06	0.0139	3.71	1.31	10.53
Community Organization	1.29	0.52	6.23	0.0125	3.65	1.32	10.08
Negative Factors							
Health	−1.11	0.38	8.32	0.0039	0.33	0.16	0.70
Land Division	−1.95	0.82	5.71	0.0169	0.14	0.03	0.70
Social Expenses	−1.56	0.77	4.13	0.0422	0.21	0.05	0.95
χ^2	304.2						
Degrees of Freedom	12						
P-value	< 0.000						
−2 Log Likelihood	359.68						
Pseudo R-square	0.62						
N	503						
% Correctly Predicted:							
Escaping Poverty	89.2						
Staying Poor	79.1						

These regression results confirm our earlier results. Diversification of income sources — from livestock, crops and non-agricultural sources — are positively and strongly related to escapes from poverty. Improved market access, gains from small businesses, and help from community organizations are also positively and significantly associated with escaping poverty. Coefficients of each of these variables is significant, and the associated odds ratio is greater than one, implying that the probability of escaping poverty is significantly enhanced when the factor concerned has been present for some household. On the other hand, ill health, land division, and social expenses (on marriages and funerals) tend to perpetuate poverty. These variables are also significant and their odds ratios are less than one, indicating that the probability of escaping poverty is correspondingly reduced when these variables

reproduced here, because of space limitations. Readers who are interested in obtaining these results can do so upon request to the authors.

are present in some cases. The same negative factors also tend to plunge non-poor households into poverty, as revealed by the parallel analysis of Category C and Category D households, not reproduced here.

FIXING THE HOLE IN THE BUCKET

Aggregate national-level data are most often used for policy formation. However, aggregate data tend to obscure critical differences. Differences between escaping poverty and falling into poverty need to be addressed in policy, but if only the aggregate figure for net change is considered, these differences are averaged out and obscured from view.

Overall, households in poverty declined by 19 per cent over twenty-five years in these forty Andean communities. This aggregate result, however, conceals two quite distinct trends. While some households escaped from poverty, other households in the same communities fell into poverty and became poor. Stopping or at least controlling these descents is essential to reducing overall poverty. The hole in the bucket must be plugged before the bucket can be filled: otherwise, households will continue slipping into poverty even as other households escape. Since different reasons are related to escaping poverty and falling into poverty, different policy responses will be needed to deal separately with each of these trends. Newer and more disaggregated data sources are required that can help make poverty policy more nuanced and better targeted.

Households in the Puno and Cajamarca communities studied have escaped from poverty in large numbers, primarily when they have diversified their income sources. Diversification of incomes from livestock, including change in breeds and change in products (Kristjanson et al., 2004), have been critical for upward movements, which is not surprising, given these highland communities' historic dependence upon livestock. But diversification of crops and new income from non-agricultural sources have also played a part in households' escape from poverty in these regions. Migration to towns, both temporary and permanent, has assisted in promoting some new income sources, but village households who have diversified traditional activities of animal and crop breeding have also realized significant gains.

Ill-health and high healthcare expenses were primarily associated with descent into poverty in both regions. Physical disability was also associated with descent in communities of the Cajamarca region, while accidental losses were related to descents in the Puno villages that we studied. Preventing descents thus demands different policy responses from those needed to assist escape from poverty. Different policies will also be required for the two separate regions, for while some factors related to escape and descent are common to both sets of communities, others differ. They also vary over time: factors that were key ten years ago may be less important now. Policy effectiveness will be improved, therefore, by undertaking regular, decentralized studies. As this

study has shown, the Stages-of-Progress methodology provides a useful tool for this purpose.

One of the advantages of the method is the scope for adding on to the findings, thus fully utilizing the time and effort already put in by the researchers and community members. In this case, for instance, it would be useful to add an historical review of Peruvian policies (local, regional and national, including land, agriculture, health, etc.) in order to explore the implications of the poverty findings in the light of policy trends. The objective of the approach is to provide information that is useful to different types of policy makers, from local to national levels, to feed into the policy debate and stimulate further investigations where needed. Identifying broader causality in the sense of ultimately tracing the relationship of poverty movements to national or global events is not what we are seeking to accomplish with this method: rather, the effort is to expose more clearly how, within the same policy environment, different households have experienced very different pathways. In this sense, this methodology complements others that look toward national and international events. Combined with other methods, including panel data studies and participatory poverty appraisals, the Stages-of-Progress approach can generate more comprehensive knowledge about the nature and causes of poverty, and lead to improved progress in poverty reduction.

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