



Assessing the impact of conservation and development on rural livelihoods: Using a modified Basic Necessities Survey (BNS) in experimental and control communities.

To assess whether actions to conserve biodiversity or actions to alleviate poverty influence local families livelihoods either positively or negatively we need to be able to a) measure local livelihoods, and b) attribute conservation or development actions to changes in the status of local livelihoods (i.e., demonstrate with reasonable certainty that these actions causes livelihoods to be better or worse).

For the former (i.e., to assess the level of local livelihoods now and over time) we suggest using a slight modification of the methods developed by Rich Davies called the Basic Necessities Survey (<http://www.mande.co.uk>). For the latter (i.e., to demonstrate that conservation or development actions either raise or lower local livelihoods) we undertake Basic Necessities Surveys in both communities where conservation or development activities are occurring, and in a second set of comparable communities (i.e., those with the same wealth, ethnic makeup, size, access to natural resource and proximity to markets) where no conservation or development activities are in place (i.e., we conduct a quasi-experimental study using the second communities as a control).

Defining poverty

If poverty can be defined broadly as "the lack of basic necessities," one approach to poverty assessment would be to poll people on whether or not they possessed this set of basic necessities. Unlike income approaches to poverty assessment (i.e., living on less than US\$1/day or US\$2/day) there is no a priori definition of what are basic necessities. In addition the threshold for what is a basic necessity is most likely to vary by location and over time within the same location.

Rick Davies (<http://www.mande.co.uk>), an independent monitoring and evaluation expert working for ActionAid in 1998, improved on methods first developed in the late 1980s in the UK by Mack and Lansley (1985) by developing a participatory approach to listing and ranking basic necessities. His Basic Necessities Survey (BNS) is a wonderfully quick and relatively inexpensive way (~US\$3-4/household) to measure and analyze household level poverty and to track changes in poverty levels over time. The BNS method relies on a locally assessed basket of assets and services considered to be "basic necessities" (i.e., things that all families should have and none should live without), to assess the local poverty line. Using this locally determined measure of poverty any family that fails to own or hold all items within this basket of basic necessities is considered, from a local perspective, to be below the poverty line.

The Living Landscape Program of the Wildlife Conservation Society has built on the BNS approach to allow not only a locally relevant assessment of who is assessed to be at or below the poverty, but to include a quantitative measure of wealth (based on a the total value of a standard set of owned assets) of families at or below the locally assessed poverty line.

The Modified Basic Necessities Survey is completed in three parts: 1] conducting focus groups, 2] surveying local households, and 3] analyzing the data collected.

Modified Basic Necessities Survey

Preparing a locally determined list of assets and services considered basic necessities

In the community you plan on surveying or a similar community you need to ask a group of people of mixed age, gender, and wealth (the latter can be assessed based on the standard of the construction of their house) to participate in a focus group.

The group will be asked to generate a list of goods (e.g., TV, bicycle, radio, wheelbarrow, machete) and services (e.g., one days holiday per week, all school age children attending school, walking distance to a health clinic, home visits by a doctor, eating bush rodent every week) that the majority of participants believe are basic necessities (i.e., items every family should have, and none should have to live without). It is important that the list includes items almost everyone would agree with (e.g., enough food each day), and others where there may be disagreement (e.g., washing machine, or the right to drive). The list should include between 20 and 30 items (goods and services). Include some items that few people in the group think are necessities now, but many believe may be in the future (say 10 years hence). Remember, you are constructing a menu of possible basic necessities, not a final list of agreed basic necessities. Do not include items that are difficult to record with a Yes or No answer (e.g., our family is healthy, or teachers are well trained), or that cannot be reliably observed by different people.

Examples of lists from Cambodia and Vietnam are shown in Table 1 below.

Household surveys

Surveys are designed to ask five basic questions of the male or female head of household who is picked randomly (i.e., by using a coin toss – heads for women, tails for men) for each household surveyed: 1) Characteristics of the household (Age and gender composition of the household, maximum education level of all household residents, how long the family has lived at the present location, and the geographic location of the household using a GPS); 2) Which of the items on the list the household has now; 3) Which items are considered basic necessities that everyone should have and no one should have to do without; 4) of the assets in the list how many does the family own, and 5) of the assets owned by the family what is the present local sales price for each owned asset.

Items can be listed in a table (see datasheet examples below) and read out to subjects or can be typed on cards that the subject sorts into two piles –have or have not for question 2 or necessity or not for question 3.

Data analysis

Analysis of these data is very simple: 1) calculate a weighting for each item (i.e., the % of surveyed households that said the item was a basic necessity), determine which items are considered “basic necessities” (i.e., basic necessities are those assets and services that 50% or more households’ say are indeed basic necessities. If an asset or good is not considered a basic necessity by $\geq 50\%$ of households surveyed then by local definition it is not a basic necessity). 2) calculate poverty scores for each household (i.e., the weighted sum of all “basic necessities” that the household owns or has access to). 3) calculate the Maximum Possible Score for the whole set of basic necessities (i.e., the weighted sum of all items considered locally to be basic necessities), and then 4) calculate the Poverty Index for each household by dividing their total Poverty Score by the Maximum Possible Score (see tables below).

You will also calculate the total value of assets owned by the family (NB: please remember that this is not all assets owned by the family, nor is it just those assets considered locally to be basic necessities, it is all assets owned by the family that were included in the original focus groups’ list).

The poverty index will range from 0%, where a family possesses none of the basic necessities and is in extreme poverty, to 100%, where a family possess all basic necessities.

If poverty scores are recalculated using all items (even those not considered basic necessities) and the poverty index recalculated using the maximum score from only the basic necessity items, then a score of $\geq 100\%$ denotes households living at or above the poverty line (i.e., those that have all or more than the basic necessities). This assumes that all goods and services that are not consider basic necessities are, in fact, superior or luxury goods (in economic terms) whose consumption rises with income, rather than inferior goods whose consumption drops with rising income.

Repeated measures – following trends in poverty level

Standards of what are believed to be basic necessities are likely to change over time if a society is undergoing some form of economic development or cultural change. When repeated basic necessities surveys are to be carried out with the same households at some later date it is important to conduct a repeat focus group to determine if additional items need to be added to the goods and services list. Scores can be calculated for each household on the basis of the new extended list and then, after excluding those new items, according to the old set. The same approach can be used to delete items that are now seen as redundant because 99.99% of all households now have those items (e.g., inside toilets in the USA). Recording the geographic location of each household surveyed with a GPS is often the best way in places without street names and house numbers to find each household and conduct repeat surveys.

Local or national level basic necessities surveys

The basic necessities basket of assets and services can be generated solely from local rural surveys or local urban surveys, or they could feasibly be generated by aggregating focus groups carried out along a rural to urban continuum to create a national level rather than local basket of basic necessities. A national level basket of assets and goods may exceed 30 items but should probably not exceed 50 items.

Additional data to help understand the causes of poverty

As many things influence poverty it is important that we gather data on those factors most often linked to people being poor.

Village Level

household in a village (you need to define what this is – e.g., people that eat together).

residents in a village

% natural land cover in 10km radius of the village

Proxies for market access – these try to assess how isolated a village is

- Travel time to nearest health centre
- Travel time to the nearest shop/market to buy manufactured goods
- Travel time to the nearest town of 5,000 or more people.

Local consumer price index

If you plan on conducting surveys of the same households repeatedly over time then you need to calculate a consumer price index which is a proxy for inflation. Knowing about inflation is important because --- if over time you observe that the value of household assets is rising, you need to know if it is rising faster in percentage terms than the CPI, if not then families may actually be getting poorer not wealthier. To determine a consumer price index you need to document the village price of a standard basket of manufactured goods (e.g., MSG Packet, Washing Powder, Dry noodles, petrol, salt, fish sauce, cigarettes, cooking pot, D cell battery, motorcycle battery, flip-flops). When selecting your standard basket of goods make sure that you specify the brand as different brands may vary in quality and price.

Household Income

If you are particularly interested in whether your conservation or development activities are having a positive or negative effective on cash income, you can determine this by conducting a recall survey of a stratified (by wealth) random sample of households with equal numbers of households surveyed in each wealth category (i.e., poor, average, rich). If you know that sources of income vary greatly during the year you may decide to repeat the income surveys several times during year. Or if some income is generate in a single period, say immediately after harvest of a cash crop, and other income comes regularly each month, you may be able to survey income by conducting a single household survey that asks about both annual income and monthly income.

In some communities men and women often hide income from one another so income surveys should be conducted separately for the male and female heads of households. When conducting an income survey it is advisable to ask each subject to recall income generated from: 1) sales of crops or wild harvested items (such as NTFPs or bushmeat or fish) during the past 24 hours, 30 days, and year. Start with daily sales, and then ask did you sell anything else (i.e., not sold during the previous day) during the last month, and then ask did you sell anything else (i.e., not sold during the last day or month) during the last year. For each item document what was sold and its total sales value. 2) income from labour either day labour or salaried work. Ask the subject how much money they made from day or salaried labour during the last month and who paid them (e.g., government job, tea plantation owner, tourism operator, etc.). 3) income from pensions, remittances and other gifts received by the subject during the last month.

Acknowledgements

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References

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- The Pro Poor Center and Davies, R. (2007) The 2006 Basic Necessities Survey (BNS) in Can Loc District, Ha Tinh Province, Vietnam.
- Mack, J., and Lansley, S. (1985) Poor Britain Allen and Unwin. London.
- <http://www.mande.co.uk/BNS.htm>

Table 1: Examples of assets and services considered by communities in Cambodia and Vietnam to be basic necessities.

Cambodia – source WCS Cambodia

Asset/Services	Item
Asset	Agricultural equipment
Asset	Bicycle
Asset	Car battery or electricity
Asset	Draught animal
Asset	Hammock
Asset	Icebox
Asset	Jerry Can 30l
Asset	Mattress
Asset	Mini tractor (iron buffalo)
Asset	Mobile phone
Asset	Mosquito net
Asset	Motorbike
Asset	Pigs
Asset	Radio
Asset	Shoes
Asset	Tin Roof - & other types of better roof (fibro, tile, cement)
Asset	Tractor
Asset	TV/video/karaoke
Asset	Wardrobe
Asset	Watch
Asset	Water jar
Service	Able to visit a Wat (temple)
Service	Able to walk to the doctor
Service	Access to credit
Service	Access to electricity
Service	All school age kids in school
Service	Distance to main road
Service	Money to send kids to secondary or high school
Service	Pay for a party
Service	Road open all year
Service	Trader visits every week
Service	Wage labour
Service	Water in the house

Vietnam – source Rick Davies

Asset/Services	Item
Asset	1 s μ o of land per person
Asset	A new set of clothes each year
Asset	Bathroom
Asset	Bicycle
Asset	Buffalo or cow
Asset	Concrete rice drying yard
Asset	Electric fan
Asset	Electric light
Asset	Motorbike
Asset	Pesticide pump
Asset	Radio
Asset	Stone built house
Asset	Table made of good wood
Asset	Thick cotton blanket
Asset	Toilet - built of stone
Asset	TV
Asset	Two compartment wooden wardrobe
Asset	Watch
Asset	Well with well head
Asset	Wooden rice chest
Service	3 meals a day
Service	Access to loans
Service	All children studying up to level 2
Service	Doctor visiting the house when sick
Service	Livestock vaccination
Service	Meat once a week

Table 2: Example of household level information

Date of interview		7/24/2007	
Household ID:		34	
Years resident in present location		15	
GPS N	42.387763	GPS E	- 71.2407
Gender	Education (Years)	Age	Subject
M	12	45	N
F	10	38	Y
M	12	18	N
F	10	15	N
F	7	12	N
F	4	9	N

Table 3: Example of household Basic Necessities Survey data

Asset or Service	Item	Have now Yes=1, No=0	Are Necessities Yes=1, No=0	How many do you own?	Price in the village for each item	Total value of owned assets
Asset	1 sjo of land per person	0	1			0
Asset	Electric light	1	1	2	10	20
Asset	Bicycle	1	0	1	500	500
Asset	Concrete rice drying yard	1	0	1	1500	1500
Asset	Wooden rice chest	1	1	1	200	200
Service	3 meals a day	1	1			0
Asset	Buffalo or cow	0	1			0
Service	All children studying up to level 2	0	1			0
Asset	Well with well head	0	1			0
Asset	Stone built house	0	0			0
Asset	Thick cotton blanket	1	1			0
Service	Doctor visiting the house when sick	1	1			0
Asset	Electric fan	0	0			0
Service	A new set of clothes each year	1	1			0
Service	Livestock vaccination	0	0			0
Service	Meat once a week	0	1			0
Asset	Pesticide pump	0	0			0
Asset	Watch	0	0			0
Service	Access to loans	0	1			0
Asset	Radio	0	0			0
Asset	Toilet - built of stone	0	1			0
Asset	Table made of good wood	1	1	1	800	800
Asset	Two compartment wooden wardrobe	0	0			0
Asset	TV	0	0			0
Asset	Bathroom	0	0			0
Motorbike	Motorbike	0	0			0

Total assets 3020

Table 4: Example of aggregate household data to identify basic necessities

Items	# who consider necessity	% consider necessity
1 sqm of land per person	418	99.5%
Electric light	418	99.5%
Bicycle	418	99.5%
Concrete rice drying yard	415	98.8%
Wooden rice chest	414	98.6%
3 meals a day	413	98.3%
Buffalo or cow	412	98.1%
All children studying up to level 2	412	98.1%
Well with well head	411	97.9%
Stone built house	410	97.6%
Thick cotton blanket	408	97.1%
Doctor visiting the house when sick	399	95.0%
Electric fan	391	93.1%
A new set of clothes each year	388	92.4%
Livestock vaccination	386	91.9%
Meat once a week	350	83.3%
Pesticide pump	336	80.0%
Watch	325	77.4%
Access to loans	322	76.7%
Radio	312	74.3%
Toilet - built of stone	188	44.8%
Table made of good wood	175	41.7%
Two compartment wooden wardrobe	135	32.1%
TV	88	21.0%
Bathroom	78	18.6%
Motorbike	32	7.6%

NB: Items not considered a necessity by at least 50% of subjects are by definition not basic necessities and are marked in yellow

Table 5: Example of poverty score data for a household from a BNS

Basic Necessities	Have now Yes=1, No=0	Weighting	Poverty score
1 sqm of land per person	0	0.995	0.000
Electric light	1	0.995	0.995
Bicycle	1	0.995	0.995
Concrete rice drying yard	1	0.988	0.988
Wooden rice chest	1	0.986	0.986
3 meals a day	1	0.983	0.983
Buffalo or cow	0	0.981	0.000
All children studying up to level 2	0	0.981	0.000
Well with well head	0	0.979	0.000
Stone built house	0	0.976	0.000
Thick cotton blanket	1	0.971	0.971
Doctor visiting the house when sick	1	0.950	0.950
Electric fan	0	0.931	0.000
A new set of clothes each year	1	0.924	0.924
Livestock vaccination	0	0.919	0.000
Meat once a week	0	0.833	0.000
Pesticide pump	0	0.800	0.000
Watch	0	0.774	0.000
Access to loans	0	0.767	0.000
Radio	0	0.743	0.000

Maximum score 18 =Sum(D2:D21)
 Poverty score 7.793
 Poverty index 43.29%

NB: Maximum score = sum of the weighting of all assets and services considered by local families to be necessities

Table 6: Example of village level data

Date of interview	5/19/2008
Village ID:	2
Control village (Y/N)	No
# households	32
# residents	191
% natural vegetation in 10km radius	13%
Travel time in hours to nearest health clinic	12
Travel time in hours to nearest shop	4
Travel time in hours to nearest town with >5,000 people	12

Table 7: Example of village price of goods data for a consumer price index

Date of interview	5/19/2008		
Village ID:	2		
Standard baskets of goods	Brand	Available (Y/N)	Unit Price
Canned sardines	Safari		
Canned Mackerel	Belma		
Stewed chicken	ABC		
Canned peas	Alibel		
Kerosene	1 litre		
White candles	large		
Bread	artisanal		
Kitchen soap	Agro Gabon		
Sugar	1 kg		
Instant coffee	Nescafé (250g)		
Toilet paper	Perroquet		
AA batteries	Vinnic		
D batteries	Hellesens		
Plastic washbasin	12-13l		
Hurricane lamp	(moyen)		
Refined vegetable oil	Mayor (1 l)		
Radio	most expensive		
Frozen chicken legs	1 kg		
Frozen fish	1 kg		
Bottled beer	REGAB		

Table 8: Example of household income data

Date of interview	5/19/2008		
Village ID:	2		
Income type	Recall period	Source	Value
Sales	Day	Taro	1200
Sales	Day	Matches	4500
Sales	Month	Bushpig	12000
Sales	Year	Cacao	300000
Labor	Month	Coffee plantation	250000
Labor	Month	Tour operator	120000
Pension	Month		0
Remittances/Gifts	Month		