Sindicatum carbon capital

Standardization of sampling approaches

Session VI: CDM Methodology Roundtable

10 June 2011

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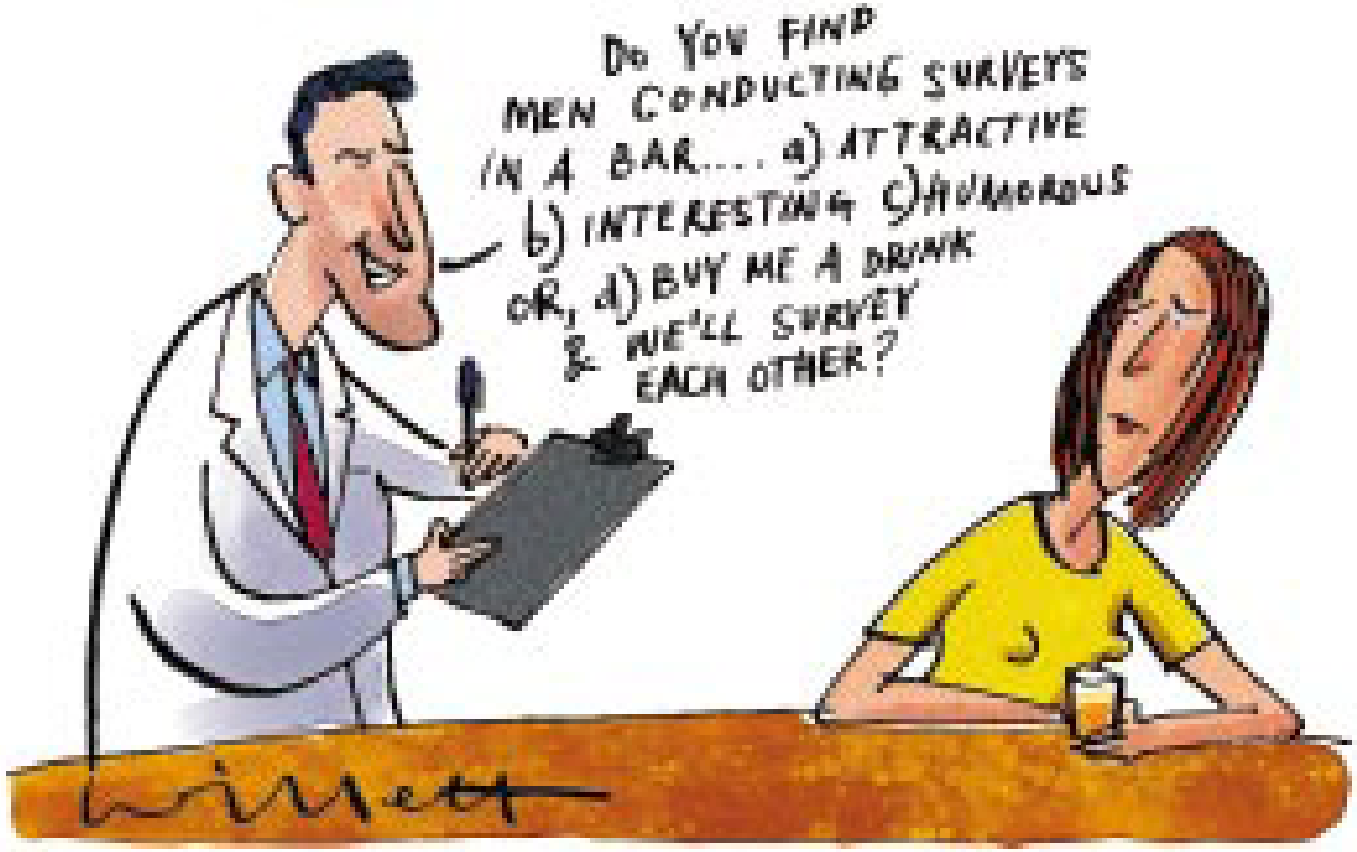

DO YOU FIND MEN CONDUCTING SURVEYS IN A BAR.... a) ATTRACTIVE b) INTERESTING c) HUMOROUS OR, d) BUY ME A DRINK & WE'LL SURVEY EACH OTHER?

Agenda

- History of UN guidance on sampling
- Lessons learnt
  - Case study
- Where are we going from here?

History of UN guidance on sampling

- Some sampling plan guidelines within methodologies but limited sampling guidance in some methodologies (such as in lighting meth AMSIIJ etc.) makes it difficult for DOEs to validate and verify sampling plans
- Public input called on sampling plans in June 2009
- Sampling plan guidelines were provided for small scale projects in October 2009
  - EB discussion indicated that the guidelines would apply to large scale projects as well, though this was unclear

Lessons learnt

- Prior to the guidelines, DOEs had difficulties validating and verifying sampling plans

- Following the release of UN Small Scale Working Group guidelines, DOEs and PPs have had issues in its interpretation:

  - Insufficient definition of objectives or populations could result in unrepresentative results. Lack of clarity on how best to determine sample size as there are differences in definitions of variance, standard deviation etc. and differences in interpretation by DOE and PPs on this. PPs have sometimes been overly conservative and increased their sample size from that which is necessary – sample size defaults would be useful. Cultural differences means questions posed and how they are posed are central.
  - PPs sought clarification of interpretation of guidelines (in submission SSC_527) and the UN Small Scale Working Group (SSC WG) agreed that “the sample mean value can be used for emission reduction calculation, not necessarily the lower or upper bound of the confidence interval around the mean”

Case study: Sampling practices for biomass stoves for households 1

Guidelines	Baseline determination	Monitoring	Challenges	Solutions
Define objectives & population & measurements to be taken and data collected	Baseline fuel & tech used for heating. Type of agricultural residue/biomass available for use. Level of awareness of biomass heater. Average quantity of coal used per year	Fraction of biomass briquettes supplied to household (h/h) that is unconsumed at end of monitoring period to calculate CERs	**Defining objectives & population very important step and requires a bit more thought**	**Secretariat emphasize importance of defining objectives & population in new guidelines**
Field measurement objectives and data to be collected	Disposal of agr res/biomass. Source & quantity of fuel for heating. Type of coal used. Type of heater. Awareness of stoves. Survey done once at start	Name and unique id no of h/h Amount of actual biomass briquette stock of each h/h Survey at end of each monitoring period		

Case study: Sampling practices for biomass stoves for households 2

Guidelines	Baseline determination	Monitoring	Challenges	Solutions
Target population and sampling frame	Target pop are all household h/h for baseline fuel and tech used, biomass available for use and level of awareness of tech used	Target pop are all h/hs n project. Names of all h/h recorded when they receive biomass stove	**DOE, PP and Secretariat have differing interpretations because guidelines make references to literature but different approaches**	**Secretariat provide more details on how to determine target population and sampling frame and method in new guidelines**
Sampling method	Simple random sample but for those h/hs where coal is not the main source of heating in survey, those are eliminated from sample. Sample is chosen from database of h/h using Excel based random selector	Subset of h/h from those participating in project (pop) will be chosen at random using excel based random selector from database of h/h		

Case study: Sampling practices for biomass stoves for households 3

Guidelines	Baseline determination	Monitoring	Challenges	Solutions
Desired precision/expected standard deviation and sample size	90/10 confidence/precision but due to some households not using coal and their elimination from the results, a greater sample size taken	90/10 confidence/precision with application of finite population correction factor	**DOE, PP and Secretariat have differing interpretations on standard deviation, accuracy, confidence, precision, because guidelines make references to literature but different approaches there**	**Secretariat clearly defines "accuracy confidence confidence intervals precision variance standard deviation"**
Information gathering	Interviewers sent out to h/hs pursuing person to person interviews	Same as for baseline		

Case study: Sampling practices for biomass stoves for households 4

Guidelines	Baseline determination	Monitoring	Challenges	Solutions
Procedures for Administering Data Collection and Minimizing Non-Sampling Error	Survey organization carried out survey. Interviewers were trained by the lead survey coordinator. Sampling procedures of allocation of interviews to interviewees, method of data recording etc.	Survey done by third party & interviewers will be trained by the lead survey coordinator. A sample size of 100 from 150 randomly selected h/h more than 68 h/h min sample size, to allow for absent h/h….	**DOE, PP and Secretariat have differing interpretations on determination of sample size because guidelines make references to literature but different approaches there** **Guidelines assumes the planning process is linear. In practice, it is rare that the population characteristics are known at the outset.** **How survey conducted is important**	**Secretariat provides standard values of sample size once population identified and/or Pilot survey to be carried out where the sample size is guessed. Parameters found can then be used to check appropriateness of sample size** **UN household survey guidelines to guide PPs**
Implementation	Weeks before survey carried out, survey organization randomly selected households from total households	Experienced third party engaged to conduct survey		

Example Table with Standard Sample Sizes

Example table that could be provided. This gives the conservative values for the minimum sample size for specified confidence levels and precisions in the following circumstances

a)for estimating the mean proportion

b)for estimating the mean of a continuous variable in a population where the value of the variable is bounded and the mean is expressed as a fraction of the range. i.e for finding Xmean/(Xmax-Xmin). In this case, the bounds should be based on physical limits e.g. the quantity of biomass that is not burned must be greater than or equal to zero and less than or equal to the total quantity supplied to the household.

It is based on the equation $S=0.25(z^2)/(p^2)$ (see our sampling plan template for a more detailed explanation).

The term 0.25 comes from the conservative estimate of the population standard deviation based on the assumptions for a) and b) above. A smaller sample size can be used if a better estimate of the standard deviation can be found.

	Confidence level %			
Precision %	90	95	97.5	99
1	4106	6764	9604	13530
2	1027	1691	2401	3383
5	165	271	385	542
10	42	68	97	136

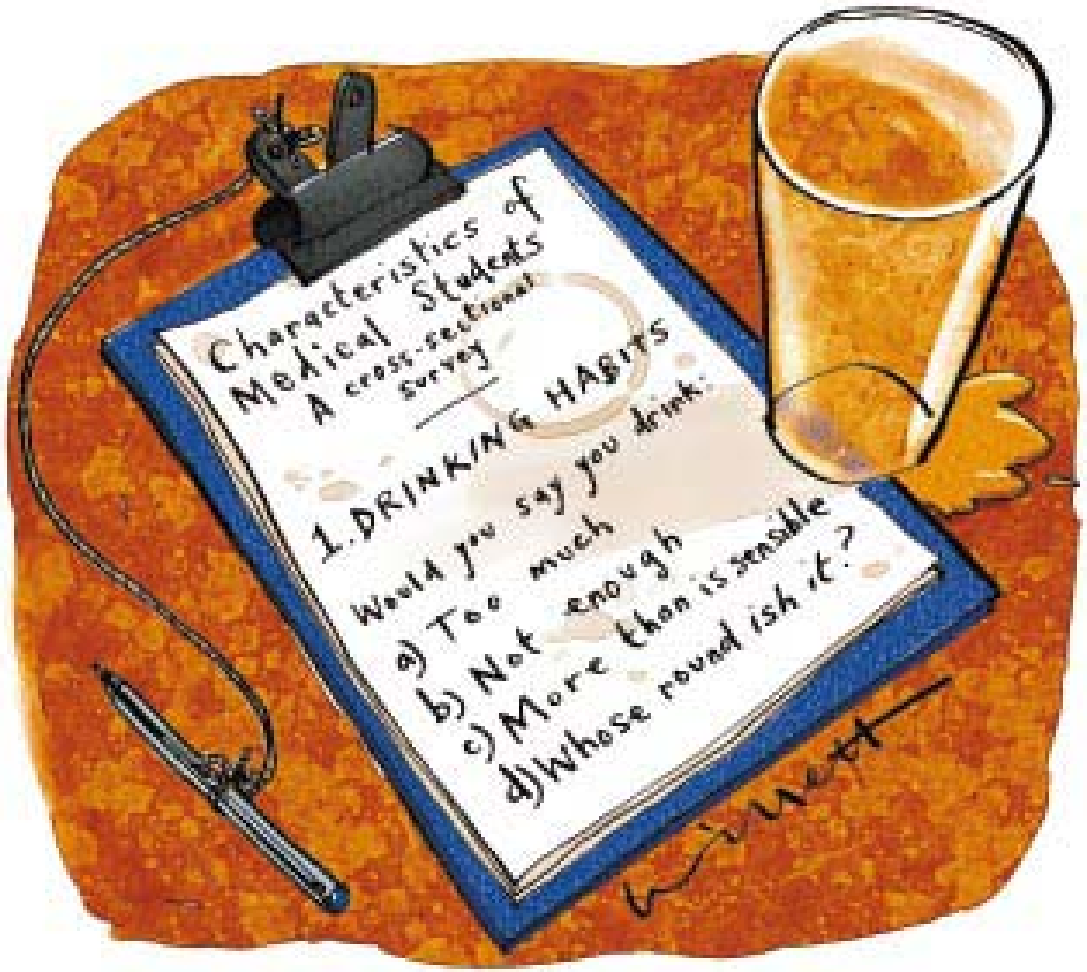
Where are we going from here?

- Secretariat is drafting common sampling guidance and best practice examples for large and small-scale projects and PoAs
- Our recommendations are to include the following in the new guidelines:
  - Emphasis on importance and more guidance on defining population and objectives
  - More specific definitions on variance, standard deviation, confidence, confidence intervals and precision
  - A table to help determine sample size: standardizing the determination of sample size for PPs
  - Allow for option for preparatory survey to determine sample size
  - Extrapolated references from UN guidance on household sampling to assist on how questions are phrased (avoid bias) and take into account cultural differences

Thinking points to leave you with…

Recommendations made need to bear in mind the following fundamental points:-

- Each project and programme is different. PPs must have discretion, taking into account cultural/ regional/ local differences and how to ask questions in determining and implementing sampling plans as long as these remain statistically significant. The DNA could also have a role here to determine what would be statistically significant for their countries since they have been carrying out there own surveys on certain renewable energy development etc..
- DOEs must understand the sampling guidelines and best practice examples are not cardinal rules and need to allow for necessary discretion and flexibility
- What are the other experiences and concerns of participants here? Are these recommendations helpful? Do we need these guidelines (some don't think we do)? Is the difficulty the differences in interpretation of guidelines by DOEs and PPs and the Secretariat? How could the guidelines be of help? What are viable alternatives? Do we need alternatives? Other questions and comments and feedback here?


Characteristics of
Medical Students
A cross-sectional
survey
1. DRINKING HABITS
Would you say you drink:
a) Too much
b) Not enough
c) More than is sensible
d) Whose round is it?

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