

CONCEPT NOTE

NATIONAL PANEL SURVEY (NPS)

1. THE CASE FOR PANEL DATA FOR POVERTY MONITORING

The National Strategy for Growth and Reduction of Poverty (NSGRP, popularly referred to in its KISWAHILI acronym as MKUKUTA) is Tanzania's organizing framework for putting poverty reduction high on the country's development agenda. MKUKUTA recognizes the need for monitoring and evaluation of progress of the poverty reduction effort, and emphasizes the need for data collection and analysis. In particular, MKUKUTA points out that: "the census and survey programme will be expanded to include other data that are currently not being collected" (NSGRP, page 65).

One of the data that have not been collected to date are panel data. Yet panel data have characteristics that make them of great interest to poverty monitoring. Panel data, because they follow the same unit, individuals, households, communities and sometimes even facilities over time, make it possible to assess the frequency and duration of entry into and exit into poverty. The ability to assess welfare dynamics make panel data an important complement to the cross-sectional data as panel data can inform about the characteristics of those at risk of falling into poverty or about the correlates of those that benefit from growth.

By virtue of following individuals over time, panel data are also very well suited to investigate causality especially as panel data allow controlling for unobserved characteristics. Cross sectional surveys can establish correlations between e.g. education and level of income panel but such a correlation may be due to innate, and unobserved, capabilities such as stamina. Panel data are able to control for this and thus to provide a more accurate estimate of the impact of educational attainment on income.

Panel data can thus shed light on a number of other uses of critical importance to MKUKUTA and MDGs, such as a proper indication of the degree of chronic and transitory poverty, a better understanding of the reasons for income mobility and, by controlling for unobserved effects, an unbiased estimate of the measurement importance of different determinants (such as education) for poverty.

Panel data, by visiting households repeatedly, can also be interpreted as baseline and follow-up. In doing so they can be used for impact evaluation. Especially when programs are introduced during the course of the panel (so that a baseline is available) and when not all communities benefit from the program, panel data can be used for program evaluation. This requires controlling for (typically unobserved, but non-random) reasons for program placement, but with a properly designed questionnaire much can be done to explain program placement and to identify –through propensity score matching, treatment and counterfactual communities. For instance had a panel survey been in place, evaluation of the impact the abolition of nuisance taxes or the introduction of fertilizer subsidies could have been done rigorously. Also the consequences of introducing PEDP could have been assessed in greater detail. Already, various programs are expected to be implemented during the course of the first three years of the panel, including TASAF II, the Water Sector Support Project, PADEP, the Agricultural Sector Development Project and the Secondary Education Program. Each of these interventions, and TASAF II in particular, have expressed interest for program evaluation through participating in a panel survey –if such a survey were available.

By serving as a standing instrument for impact evaluation, a panel survey can solicit impact evaluations where they might not have taken place otherwise. More importantly given the current drive to “measure results”, a panel survey that can be used for multiple evaluations could replace a number of stand-alone impact evaluations, which, if all were pursued, could easily overwhelm the capacity of the National Statistical System.

Finally as panel data tend to be collected at regular intervals, they could be used to routinely provide data for monitoring and evaluation. However, the major strength of panel data is not in collecting indicator variables, especially as panels tend to become less representative over time. This aspect of panels can be addressed, e.g. through the inclusion of new households and re-weighting, but typically cross sectional surveys such as the HBS, and provided that they are implemented with a reasonable frequency, are a better and more cost effective way to collect information on poverty incidence and/or other MKUKUTA monitoring indicators.

This concept note proposes a national panel survey (NPS) for, initially, a period of three years. The objectives of the NPS are:

1. to provide information about poverty and welfare dynamics
2. to provide data that allow to determine causes of changes in household welfare
3. to do an impact evaluation (baseline, follow up & counterfactual) of TASAF II
4. to serve as instrument that can be used for impact evaluation of other major programs
5. to provide representative indicators for selected variables

2. SAMPLE, SURVEY STRUCTURE AND FIELD ORGANIZATION

Sample

The NPS will be nationally representative with a sample of 3600, selected from 300 villages spread over 5 strata. The strata have been chosen to reflect income mobility through rural-urban migration (urban, peri-urban and rural), whereby the rural stratum is subdivided into highlands, coast and (semi)arid leaving a total of 5 strata (urban, peri-urban, highlands, arid and semi-arid, and coast) in Mainland Tanzania.¹ In each stratum 5 districts will be sampled, in each district 12 villages, in each villages one kitongoji/mtaa

¹ A sixth stratum – Zanzibar may be added to the survey, but would clearly have budgetary implications.

within which 12 households will be randomly selected following an initial listing exercise.²

Following consultations with Dr. Naimani (NBS' sampling consultant) and Juan Munoz (LSMS' sampling expert) it was decided to independently draw a sample for the NPS and not to sample from the National Master Sample. Dr. Naimani – who prepared the Tanzania National Master Sample, confirmed that drawing an independent sample will not affect comparability with e.g. the HBS, but provides advantages by avoiding respondent fatigue (especially when households are interviewed annually for the NPS and also for other surveys (HBS, THIS) while allowing greater flexibility to serve the needs of impact evaluation (identification of a treatment and counterfactual groups).

Data collection and enumerator training

Data will be collected in three rounds of 12 months each, by six mobile survey teams comprising of a driver, a supervisor and four enumerators. Prior to starting field work enumerators and supervisors will be trained for a period of approximately three weeks with many practical sessions to ensure competency and accuracy during data collection. Once in the field enumeration teams are expected to spend six days per community, spending three days on transport, introductions, listing and collecting community and facility information, two days interviewing households and one day resting. Enumeration will take place at a rate of 1.5 questionnaires per enumerator per day, allowing for an interview time per household of 3-4 hours. The remainder of the working day will be spent on transport and other logistics, editing and cleaning and quality checks. To deal with seasonality field work will be carried out throughout the year. Households will be interviewed every 12 months such that households are always interviewed in the same calendar month.

Quality Control

² Two sampling consultants, dr. Naimani of the UDSM and Juan Munoz of Sistemas Integrales have been contracted to design a sampling procedure (how to select districts, villages and kitongojis) and to draw the sample.

Quality control will be continuous. Primary editing will be done by the enumerator after the interview, after which the questionnaire will be checked by a peer enumerator *and* the field supervisor. Once the questionnaire has been completed satisfactorily it will be forwarded to the EDI offices where questionnaires will be checked for completeness and where consistency checks are in-built in the data entry program. To avoid typing mistakes, all data entry will be double blind.

To further enhance quality, field supervisors are expected to re-interview 10% of the households to check completeness and accuracy of the information. Additional field checks will be done by the survey supervisor during unannounced spot checks. After 3 months of data collection the preparation of the consumption aggregate and summary tables will start. This will serve the purpose of checking the internal consistency and quality of the data as well as ensuring that (at most) 4 months after the first year's field work is completed a cleaned data set plus a first analytic document are available for dissemination.

Length of the panel and representativity

It is envisaged that the NPS will be a long running (10 years or more) panel, with an initial phase of 3 years. Whereas the panel will be representative in the first year, it is the nature of panel data to gradually become less representative due to cohort effects (the initial respondents grow older) and attrition (households initially in the survey may refuse to participate in the future). Representativity can be maintained, but this requires expanding the sample and/or replacing panel households by new households. In both instances the kitongoji/mtaa listing would need to be updated and the survey would need to be reweighted. It is proposed (but still under discussion) to follow the same households for the first three years. Experience with the KHDS has shown that attrition in panel surveys in Tanzania is low, reducing the need for replacement to maintain representativity. After the initial three years (sooner if attrition is high and/or if a need is felt to maintain national representativity) the sample structure will be revised and a decision made whether to include new households in the panel (to maintain national

representativeness) or to maintain the original panel (to allow greater understanding of (poverty) dynamics).

Questionnaire content

Questionnaire design will follow the LSMS guidelines (Grosh and Glewwe 2000). The questionnaire will comprise core modules which will be implemented annually and non-core modules which can be added and implemented in selected years. In the first year, when interview time is limited due to the need to carry out a listing exercise, interview time should not exceed 3-4 hours. In subsequent years, when more time for enumeration is available, multiple visits become a possibility and additional modules can be added to the core such as a recall on shocks or a module on informal networks. In addition to a household questionnaire, there will also be a community questionnaire which assesses community characteristics and prices, facility questionnaires for schools, water points and health centers and a listing questionnaire which can be used to assess village level inequality.

The questionnaire will be of the LSMS type with a focus on dynamics of poverty, social protection and program evaluation. Table 1 presents an overview of questionnaire modules as they are envisaged.

A draft questionnaire is expected to be ready by mid-June. The draft will be discussed in the Research and Analysis Working Group and with a wider group of stakeholders, possibly at an open meeting of the Research and Analysis Working Group. A wider public will be invited to provide questions/research topics for inclusion in the questionnaire. Inclusion of such demands will be judged on the basis of (i) policy relevance (ii) additional burden to the enumeration process and (iii) commitment to utilize the data for analysis shortly after the data become available.

Table 1: Overview of Core and Non-Core Modules for the NPS

Core Modules (every year)	
Module 0	Location of household, GPS information

Module 1	Household Roster, educational attainment, health status, income earning activities/ activity status
Module 2	Accessibility, Program Participation & Benefits
Module 3	Consumption (recall module)
Module 4	Transfers and Remittances
Module 5	Assets, housing and livestock
Module 6	Savings and credit
Module 7	Household income
Module 8	Perceptions on public services & governance
Core modules included in the second year	
Module 9	Shocks & coping mechanisms (included in the second year: 5-10 year recall)
Module 10	Informal networks (included in the second year)
Additional modules (upon request)	
Module 11-19	TASAF, Health, Education, Child Labor, Anthropometry, Disability, Environment, Time Use, Agriculture, Household Enterprises

Dissemination and First Stage Analysis

A first stage analysis will be done by EDI/UDSM (with NBS assistance) to prepare consumption and income aggregates and to produce descriptive tables. Following the production of a cleaned data set and the first report (which will be completed at most 4 months after the first year's data collection is finalized) the data set will be made available for further analysis and disseminated to the public. Different stakeholders are expected to use the data in research projects. Those that requested questions to be included in the NPS questionnaire are expected to provide their analytical findings within 12 months after the data have become available to NBS, TASAF and the RAWG.

3. MANAGEMENT STRUCTURE (TO BE APPROVED)

Four partners plus NBS are behind the initiative to collect nationally representative panel data: TASAF, the Department of Economics of the University Dar es Salaam, EDI and the World Bank. The National Bureau of Statistics provides technical support and backstopping and has agreed to store and disseminate the (meta)data once collected.

The Tanzania Social Action Fund (TASAF) is a social fund established to contribute to the government's objective of building human capabilities through (i) reducing vulnerability and managing livelihood risks and (ii) increasing empowerment and accountability (World Bank 2004). TASAF uses the community driven development approach (CDD) in working towards this goal. In particular, TASAF through the National Village Fund (NVF), provides funds to villages to target the poor who (a) lack access to basic social and market services; (b) are able-bodied BUT food insecure; or (c) are vulnerable (i.e., orphaned, disabled, elderly, affected/infected by HIV/AIDS, etc). TASAF has realized that a nationally representative panel would provide an opportunity to evaluate its second phase program (TASAF II). To this end TASAF has taken the initiative for the NPS and agreed to host and administer the project for the first three years.

The Department of Economics, University of Dar es Salaam, has a keen interest in collecting nationally representative panel data to strengthen its capacity at for poverty monitoring and program evaluation and for feeding into its research efforts on the micro empirics of equity and growth. The NPS will be an opportunity to expand its participation in international research networks and will strengthen the universities graduate programs as it will allow PhD candidates to work with data and familiarize themselves with advanced data collection methods. By involving applied researchers in the process of questionnaire design it is ensured that additional data needed for such advanced analysis are included in the instruments. The Department will be responsible for questionnaire design, capacity building and analysis of the data to internationally accepted academic standards.

The University has entered into collaborative partnership with Economic Development Initiative (EDI), a research company based in Bukoba, Northern Tanzania. EDI has valuable experience in collecting household survey data, in questionnaire design, in combined qualitative – quantitative approaches to data collection and, fore mostly, in collecting, processing and analyzing panel data. Recently EDI has completed the Kagera Health and Demographic Survey (KHDS) an LSMS-type panel survey spanning a 14 year period. EDI is also implementing Core Welfare Indicator Surveys in 30 districts. EDI will be responsible for field operations, data cleaning and preparation and, jointly with UDSM putting together a first analytic report. EDI has committed itself to ensuring that cleaned public use files will be available to the public four months after completing every round of field work.

The World Bank has expertise on the design and implementation of Living Standards Measurement Surveys, in evaluating community driven program, poverty analysis and social protection. The Bank will facilitate survey design, support capacity building through its intern program and will provide research and resources capacity for analysis.

The National Bureau of Statistics oversees the National Statistical System. It has much experience at implementing household surveys and chairs the Census and Surveys Working Group which operates under the Poverty Monitoring System. NBS offers its technical expertise and will see to it that standards and codes are maintained and has agreed to disseminate data and reports.

The National Panel Survey will be integrated into the National Statistical System and the Poverty Monitoring System to ensure that the collected information become official statistics, to ensure that data are widely disseminated and publicly accessible, to identify at an early stage policies and programs that could be evaluated through the survey, to disseminate data and findings from the study and to coordinate this study with other ongoing work in the area of poverty monitoring. There will be regular reporting on progress and technical aspects of the survey through the Census and Surveys Working

Group and discussion on research topics and finding in the Research and Analysis Working Group.

The following management structure (Figure 1) is proposed for the initial three years of the national panel survey (the final structure is still to be decided).

Figure 1: Proposed structure for NPS for first three years

Pooled Fund

Steering Committee

Director TASAF (chair)
Director Poverty Eradication Division, MPEE
Director General, NBS
Head of Economics Department, UDSM
Chair DP Statistics Group

Implementation Team:

	Responsible for
Economist, Economics Department (chair)	Questionnaire design and content; poverty analysis, other analyses and capacity building
M&E specialist, TASAF	Access to TASAF M&E data, financial management and reporting and administration, incorporation of results in TASAF and social protection policy
Director of research, EDI	Fieldwork operations, clean data set, descriptive reports
Senior Statistician, NBS	Sampling, coordination and standards, data dissemination, data release workshops, inclusion in TSED
Representative RAWG	Questionnaire content, particularly policy relevance and poverty dynamics; identification of areas for analysis
Senior Economist, World Bank	International relations & exposure, capacity building & analysis

5. BUDGET & FUNDING

The cost of this undertaking is estimated to be 2.2 million USD, or approximately USD 700,000 per annum plus USD 114,000 set up costs in the first year. This cost is calculated on the basis of a total of 10,800 household questionnaires (3 rounds of 3,600 households) that will be implemented in Tanzania Mainland. The annual cost will mostly (at least for 60%) be covered by sponsors (WFP/UNICEF/TASAF/WB) to individual questionnaire modules. The Poverty Monitoring System is requested to finance the balance of USD 274,080 (see Table 5). Inclusion of Zanzibar is a possibility. It would increase the survey costs by about USD 95,000 per annum and require a set up cost of USD 15,000.

A meeting in which organization arrangements as well as funding commitments are firmed up will be held towards the end of June.

Table 2: Assumptions underlying the budget	
SAMPLE SIZE AND STRUCTURE	
Strata	5
districts per stratum	5
clusters per stratum	12
Total No. of clusters	300
HHs per cluster	12
Total No. of HHs	3,600
ASSUMPTIONS ON BREAKS/SICK LEAVE	
254 days of work	
34 resting days in the field	
52 resting days at home	
25 days of annual leave	
ASSUMPTION ON SIZE AND SPEED OF INTERVIEW TEAM	
No. of interviewers per team	4
No. of interviews per interviewer	1.50
No. of days to complete all interviews	2.0
No. of days of travel, intro & listing	3
No. of days per cluster	5.0
No. of clusters per district	12.0
No. of days for 1 team to complete district	60.0
resting days on field	8.0
rest days at home	12.0
No. of days per district	80.0
No of districts per team	4.3

Table 3: Set-up Costs of the annual panel survey

Questionnaire design, piloting & manual	50,000
Sampling & qnr peer review	10,000
Capital Purchases	28,500
Preparations & enumerator training	15,500
Data Entry Set-up	10,000
Other	6,000
TOTAL	114,000

Table 4: Annual cost of running the national panel survey

	No.	mths/dys/pages	\$	total
STAFF WAGES				
Survey Manager	1	13	1,500	19,500
Field Co-ordinator	1	13	750	9,750
Data Entry Co-ordinator	1	13	750	9,750
Project Accountant & HR administrator	1	13	750	9,750
Field Supervisors	6	13	400	31,200
Interviewers	24	13	200	62,400
Data Entry Operators	8	13	200	20,800
				163,150
TRANSPORT				
Cars	7	365	120	306,600
Transport to and from field	1	1	1	20,000
				326,600
FIELD EXPENDITURES (EXCL. TRANSPORT)				
Per diems interviewers	24	231	10	55,440
Per diems supervisors	6	231	15	20,790
Per diems co-ordinator	1	200	20	4,000
Per diems manager	1	100	25	2,500
Field stationeries & equipment	25	1	100	2,500
Field communication	300	1	5	1,500
EMS costs sending Qx	150	1	50	7,500
Guides, Village Chairmen, etc.	600	1	25	15,000
				109,230
OTHER RECURRENT COSTS				
Office stationeries	1	1	2,000	2,000
Printing Qx	6,500	60	0.04	15,600
Other printing	1	1	2,500	2,500
Communication	1	12	1,000	12,000
Printer/photocopier cartridges	1	12	250	3,000
Rent/electricity/water	1	12	1,000	12,000
Office clerks (photocopies etc)	1	12	100	1,200
Guards	3	12	100	3,600
Miscellaneous	1	1	25,000	25,000
Management fee	1	1	20,000	20,000
				96,900
TOTAL				695,880

		Year 1	Year 2	Year 3
Set up costs (Table 3)		114,000		
Annual costs (Table 4)		695,080	695,080	695,080
Total Cost First Year		809,880	695,880	695,880
Funding, committed	WB	60,000		
Funding, pending	UNICEF	100,000	100,000	100,000
	ILO	100,000	100,000	100,000
	TASAF	200,000	150,000	150,000
	WB	75,000		
Total committed and pending		535,000	350,000	350,000
FUNDING GAP		274,880	Tbd	Tbd

6. NEXT STEPS

Activity	By (tentative date)
Organizational Structure Finalized, MOUs signed and Financial Commitments made	30 th June 2006
Questionnaire design	30 th June 2006
Field work preparations	July–August 2006
Enumerator training	September 2006
Start Field Work	October 2006

7. CONCLUDING REMARKS

Presented is the National Panel Survey which is embedded in the National Statistical System and the Poverty Monitoring System. The survey will provide data allowing to (i) identify and understand poverty dynamics and vulnerability and (ii) carry out evaluation of national programs and policies.

8. REFERENCES

United Republic of Tanzania (2005). *National Strategy for Growth and Reduction of Poverty (NSGRP)*. Vice President's Office

Grosh Margaret and Paul Glewwe (2000). *Designing Household Survey Questionnaires for Developing Countries*. (The World Bank: Washington DC)