I. Background on PRSPs

Both to qualify for debt reduction under the HIPC (Highly Indebted Poor Country) initiative and to receive loans from the World Bank and the IMF, countries have been asked to engage in the preparation of a Poverty Reduction Strategy Paper (PRSP).

You can find information about the HIPC initiative at:  
http://www.worldbank.org/hipc/

Information about the objectives of a PRSP and the broad consultative process to be followed for its development can be found at:  

You can find copies of the available PRSPs, including that for Nicaragua, at:  

The PRSPs are usually based on information derived from household surveys conducted as part of the LSMS (Living Standard Measurement Survey). You can find information on the available LSMS at:  
http://www.worldbank.org/lsms/

The data from the 1998 LSMS for Nicaragua can be retrieved from this site. We have done this for you to save you the $200 fee. Data are posted in Textfile and in Stata on the Homepage for the course.

The LSMS are typically analyzed in a comprehensive document called Poverty Assessment. The following reports are available for Nicaragua:  
Volume 1: Main Report  
Volume 2: Annexes

II. Your consulting job with the GON

There is a large international consultant market to assist countries elaborate their PRSPs as most of them do not have the expertise needed to develop the technical components of these papers. As a consultant in this market, the Government of Nicaragua (GON) is asking you to comment on and help improve its current PRSP. To do this, proceed as follows:

1. Background work: Review the latest Poverty Assessment paper (not more than 2 pages)  
   What indicators of poverty and inequality did it use?  
   Give a critical review of what it did and did not do to give a useful characterization of poverty and inequality.  
   Summarize and critically discuss the policy recommendations derived from the Poverty Assessment.

2. Background work: Review the latest PRSP (A Strengthened Poverty Reduction Strategy, August 2000) (not more than 2 pages)  
   What indicators of poverty and inequality did it use?  
   Give a critical review of what it did and did not do to give a useful characterization of poverty and inequality.
Summarize and critically discuss the policy recommendations derived from the PRSP

3. Proposal to GON: Summarize your critique of the PRSP and translate this critique into an empirical strategy to use the LSMS data in support of your critiques.
   Hint: there are typically two dimensions where the PRSPs are deficient:
   (1) They do not pay sufficient attention to the heterogeneity of possibilities and opportunities that characterize different segments of the poor.
   (2) They tend to focus more on welfare transfers than on income generation.

4. Implementation of your proposal to GON: Use the LSMS data to provide the indicators and the analysis needed to make your case for an improved PRSP. To do this, we have prepared two files with basic information extracted from the 1998 LSMS. One file (nica98hh) gives information at the household level. There are 2,040 households for which we have demographic characteristics, some context variables, and aggregate consumption. The other file (nica98ind) reports information on the 22,390 members of these households. For each member, information is given on demographic, education, and job characteristics, in addition to some information on the household to which the individual belongs. These two files overlap, but will make it easier for you to work either at the household level or at the individual level.

There are a few conceptual issues in defining an indicator of welfare based on household total consumption.
   - Adult equivalent scale. As consumption needs vary with age and gender, different members of a household are often given weights to construct an “adult equivalent” household size. Here, we propose a simple framework that will attribute to children 0 to 14 years old a weight of 0.70, which corresponds to an average value of the weights used in a more disaggregated Mexican study.
   - Economies of scale. Even among adults, there are economies of scale in household size for some expenditures, such as housing costs. This can be tackled by computing per capita welfare as total consumption divided by \( n^\alpha \), where \( n \) is the number of adult equivalent members in the household and \( \alpha \) is a number smaller than 1. To avoid complication of normalization with the given poverty line, we will however ignore the issue in this exercise.
   - Finally, prices vary across regions, and hence the same consumption represents different welfare levels depending on where the household is located. To normalize total consumption to a national standard, you are given a regional price index.

This real consumption per adult equivalent (ceq) for each household is now the basis for the analysis of poverty and inequality.
   - Intrahousehold allocation. We will ignore potential issues of intra-household inequality and attribute to each member of the household the ceq and the poverty indicators that correspond to its household.
   - Aggregation over the country. If the survey was a census or a random sample of the population, all we would need to do is add up the poverty indicators over the individual sample. However, the sampling design include stratification, and hence to obtain an aggregate representation of the country, we need to weight each individual by the sampling weight. As we are concerned by statistics on poverty and inequality in the population itself, you should use the data file on individuals.

4.1. Draw the poverty profile and calculate the P0, P1, and P2 indicators for the whole population.

4.2. Do the same for two selected critical divisions of the population into subgroups of your choice. Important divisions of the population for poverty analysis are:
   - Rural-urban
   - Regions
   - Education of the household head
   - Age of the household head
Sector of economic activity of the household head.

4.3. Calculate the contribution that each selected subgroup makes to total poverty according to the three P indicators. Discuss what you have learned about the structure of poverty on the basis of your results.

4.4. With a focus on heterogeneity, can you tell the GON if there is a gender bias in poverty? You can look at this in two ways, comparing poverty indicators between male- and female-headed households, or between men and women in the population. Similarly, can you tell the GON if children and older persons are poorer than adults? Discuss your results.

4.5. Explain the determinants of the probability of being in poverty. This should be done at the household level. Make sure that you make a contrast between the different determinants of poverty:

   - Individual household characteristics.
   - Household asset positions.
   - Characteristics of the context where the household is located.

Discuss your results and extract policy implications regarding the heterogeneity of poverty and the need for differential policy interventions. Do your results give you guidelines for the targeting of welfare transfers?

4.6. Suppose now that you want to organize a transfer program to the poor. A precise targeting would require a detailed consumption survey similar to the LSMS to establish the poverty status of every single household. Alternatively some programs, such as PROGRESA in Mexico, use a welfare index based on a few easily observable correlates of poverty. To establish such an index for Nicaragua, estimate the probability of being poor on a few selected indicators of dwelling quality, head of household characteristics and sector of activity, and regional characteristics. Note that you are looking for correlates of poverty, not determinants, and hence those indicators can be endogenous. Give yourself a threshold for the estimated welfare index and compare poverty and predicted poverty status in your sample of households. By trial and error, find a threshold that will leave you with less than 10% type 1 error in your targeting scheme. Explore the trade-off between type I and type II errors in targeting.

4.7. To look at income generation as a road out of poverty, look at the determinants of occupational choice (at the individual level). What policy interventions does this suggest?

4.8. To characterize inequality, draw the Lorenz curve and calculate the Gini coefficient for the whole population.

4.9. Repeat this for the subgroups you have analyzed. What do your results show about the structure of inequality in Nicaragua?

5. Prepare an executive summary (one page maximum) of your results and recommendations for the GON. Place this summary at the beginning of your report.