

NICARAGUAN RPS EVALUATION DATA (2000–02)

OVERVIEW AND DESCRIPTION OF DATA FILES

APRIL 2005 RELEASE

International Food Policy Research Institute

April 2005

Acknowledgements

The Nicaraguan *Red de Protección Social* (RPS) evaluation data were collected by IFPRI in collaboration with RPS and the Inter-American Development Bank, as part of an extensive evaluation of the RPS program. We would like to thank first the *Red de Protección Social* (RPS) team for its continued support, in particular, Mireille Vijil, Tránsito Gomez, Iván Díaz, Gamaliel Mejia, Carol Herrera, José Martí Caldera, Leslie Castro, Carlos Lacayo, and Alejandro Sánchez. We also thank Natàlia Caldés, Oscar Neidecker-Gonzalez, Alexis Murphy, and Jane Rhode for research assistance. The following IFPRI researchers provided support over the past several years during different stages of the evaluation: Gero Carletto, Saul Morris, Benjamin Davis, David Coady, Emmanuel Skoufias, Michelle Adato, Rafael Flores, and John Maluccio. We would like to express our gratitude to the Inter-American Development Bank team, who helped immensely throughout the project, in particular Emma Monin, Ferdinando Regalía, and María Eugenia Zavala. We gratefully acknowledge funding for the documentation of the data provided by IFPRI's Global Public Goods Project. Finally, we express our gratitude to the people in the study communities for sharing their time and experiences with us.

International Food Policy Research Institute

Disclaimer

IFPRI and the RPS encourage the use of the RPS evaluation data (2000–02), but emphasize that the attached files are unit record or 'raw' data files. While information that would allow individuals to be identified has been deleted from the files, all other information remains in the data files. The data are provided 'as is' and in no event shall IFPRI or RPS be liable for any damages resulting from use of the data. While great effort was taken to obtain high quality data, the accuracy or reliability of the data are not guaranteed or warranted in any way. The decision not to alter the contents of the data

files means that the user of these files will need to take care in handling missing observations, outlier values, and violations of logical consistency.

The authorized use of these data is limited to government, academic, and research institutions (or individuals associated with these institutions) to be used for informing and improving government policy or for educational purposes. The data is not authorized to be used for commercial purposes. The data are provided 'as is' and in no event shall IFPRI be liable for any damages resulting from use of the data. While great effort was taken to obtain high quality data, the accuracy or reliability of the data is not guaranteed or warranted in any way.

1. Background

The Nicaraguan *Red de Protección Social* (RPS), modeled after PROGRESA in Mexico, is a program designed to address both current and future poverty via cash transfers targeted to households living in poverty in rural Nicaragua. The transfers are conditional, and households are monitored to ensure that children are, among other things, attending school and making visits to preventive health-care providers. When households fail to fulfill those obligations, they lose their eligibility. By targeting the transfers to poor households, the program alleviates short-term poverty. By linking the transfers to investments in human capital, the program addresses long-run poverty. RPS's specific objectives include

- supplementing household income for up to three years to increase expenditures on food,
- reducing school dropout during the first four years of primary school, and
- increasing the health care and nutritional status of children under age 5.

RPS comprised two phases over five years, starting in 2000. The pilot phase (also known as Phase I) lasted three years and had a budget of \$11 million. As a condition of the Inter-American Development Bank (IADB) loan financing the project, and to assess whether the program merited expansion in the same or in an altered form, the Government of Nicaragua solicited various external evaluations of Phase I. The International Food Policy Research Institute (IFPRI) conducted the quantitative impact evaluation, using a randomized community-based design. This document briefly outlines the program and introduces the quantitative data collected as part of that evaluation. In late 2002, based in part on the positive findings of the various evaluations, the Government of Nicaragua and IADB agreed to an expansion of the program for three more years with a budget of \$22 million.

2. The *Red de Protección Social* Program¹

Targeting

In the design phase of RPS, rural areas in all 17 departments of Nicaragua were eligible for the program. The focus on rural areas reflects the distribution of poverty in

¹ This section draws on Maluccio and Flores (2004).

Nicaragua—of the 48 percent of Nicaraguans designated as poor in 1998, 75 percent resided in rural areas. For the pilot, the Government of Nicaragua selected the departments of Madriz and Matagalpa from the northern part of the Central Region, on the basis of poverty as well as on their capacity to implement the program. This region was the only one that showed worsening poverty between 1998 and 2001, a period during which both urban and rural poverty rates declined nationally. In 1998, approximately 80 percent of the rural population of Madriz and Matagalpa were poor, and half of those were extremely poor (IFPRI 2002b). In addition, these departments had easy physical access and communication (including being less than a one-day drive from the capital, Managua, where RPS is headquartered), relatively strong institutional capacity and local coordination, and reasonably good coverage of health posts and schools (Arcia 1999). By purposively targeting, RPS avoided devoting a disproportionate share of its resources during the pilot to increasing the supply of educational and health services.

In the next stage of geographic targeting, all six (out of 20) municipalities that had the participatory development program *Microplanificación Participativa* (Participatory Micro-planning), run by the national *Fondo de Inversión Social de Emergencia* (FISE), were chosen.² The goal of that program was to develop the capacity of municipal governments to select, implement, and monitor social infrastructure projects such as school and health post construction, with an emphasis on local participation. It is possible, then, that the selected municipalities had atypical capacity to carry out RPS, although this may not have been widespread as the Participatory Micro-planning program did not cover the entirety of the participant municipalities. Nevertheless, in terms of poverty, the six municipalities were well targeted. Between 36 and 61 percent of the rural population in each of the chosen municipalities were extremely poor and between 78 and 90 percent were extremely poor or poor (IFPRI 2002b), compared with national averages of 21 and 45 percent, respectively. While not the poorest municipalities in the country (or in the chosen departments for that matter), the

² The six were Totogalpa and Yalagüina municipalities in the department of Madriz, and Terrabona, Esquipulas, El Tuma-La Dalia, and Ciudad Darío municipalities in the department of Matagalpa.

proportion of impoverished people living in these areas was still well above the national average.

In the last stage of geographic targeting, a marginality index based on information from the 1995 National Population and Housing Census was constructed, and an index score was calculated for all 59 rural census *comarcas censales*³ (hereafter, *comarcas*) in the selected municipalities. The index was a weighted average of a set of poverty indicators at the *comarca* level (with respective weights in parentheses) known to be highly associated with poverty (Arcia 1999):

- 1) Average family size family (10 percent)
- 2) Percent without piped water in the home or yard (50 percent)
- 3) Percent without a latrine (10 percent), and
- 4) Percent of persons over 5 who are illiterate (30 percent)

Higher index scores were associated with more impoverished areas. Recognizing that the index could not reliably distinguish between two *comarcas* with similar scores, rather than use the scores directly, the 59 rural *comarcas* were grouped into four priority levels after renormalizing the highest index score to 100: a score of above 85 was given highest priority (priority 1); 70–85, priority 2; 60–70, priority 3; and below 60, lowest priority, 4.⁴ The 42 *comarcas* with the priority scores 1 and 2 were eligible for the pilot phase's first stage.

Program Design

RPS has two core components:

1. **Food security, health, and nutrition.** Each eligible household receives a cash transfer known as the *bono alimentario* or “food security transfer,” every other month, contingent on attendance at educational workshops held every other month and on bringing their children under age 5 for scheduled preventive (or well child) health-care appointments. The workshops are held within the communities and typically include about 20 participants. They educate women in

³ *Comarcas censales* are administrative areas within municipalities that include between one and five small communities averaging 100 households each. They are identified in the data using the specially constructed variable *comcens*, not *i03* or *comarca*, which were at times used for logistics. In some cases, *comarca censales* differ from locally defined administrative areas referred to as *comarcas*.

⁴ IFPRI (2002b) describes RPS targeting in more detail.

household sanitation and hygiene, nutrition, reproductive health, breastfeeding, and related topics.

To ensure adequate supply, RPS trained and paid private providers to deliver the specific health-care services required by the program. These services, provided free of charge to beneficiary households, include growth and development monitoring, vaccination, and provision of antiparasites, vitamins, and iron supplements. Children under age 2 are seen monthly and those between 2 and 5, every other month. In practice, mothers bring their children to the local service location (often a community center or house of one of the beneficiaries) to be seen by the doctor working for the private provider. First, the professional nurse measures the child, inquires about the child's health and the caretaker's caring and feeding practices, and checks the vitamin A supplementation record. Then the doctor examines the child, prescribing appropriate antiparasite medicine or iron supplements according to the Ministry of Health protocol for making these prescriptions. If the child is growing well, the doctor congratulates the caretaker. Then the caretaker returns to the nurse to receive individual counseling on how to maintain or improve growth with key messages on breastfeeding, child feeding, illness care, and hygiene, taking into account several factors, such as the age of the child and whether the child gained weight adequately the previous month or had been ill.

2. **Education.** Each eligible household receives a cash transfer known as the *bono escolar* or "school attendance transfer" every other month, contingent on enrollment and regular school attendance of children ages 7–13 who have not completed fourth grade of primary school. Additionally, for each eligible child, the household receives an annual cash transfer intended for school supplies (including uniforms and shoes) known as the *mochila escolar* or "school supplies transfer," which is contingent on enrollment. Unlike the school attendance transfer, which is a fixed amount per household regardless of the number of children in school, the school supplies transfer is for each child.

To provide incentives to the teachers, who have some additional reporting duties and were likely to have larger classes after the introduction of RPS, and to

increase resources available to the schools, there is also a small cash transfer, known as the *bono a la oferta* or “teacher transfer.” This is given to each beneficiary child, who in turn delivers it to the teacher. The teacher keeps one-half, while the other half is earmarked for the school. The delivery of the funds to the teacher is monitored, but not their ultimate use.

Table 1 summarizes the eligibility requirements and demand and supply-side benefits of RPS. At the outset, nearly all households were eligible for the food security transfer, which is a fixed amount per household, regardless of household size. (A small percentage [<3 percent] of households were excluded based on their characteristics, as described in IFPRI [2002b]. The random sample did not include any of these households.) Households with children ages 7–13 who had not yet completed the fourth grade of primary school were also eligible for the education component of the program.

The amounts for each transfer were initially determined in U.S. dollars and then converted into Nicaraguan córdobas (C\$) in September 2000, just before RPS began distribution. Table 1 shows the original U.S. dollar annual amounts and their Nicaraguan córdoba equivalents (using the September [2000] average exchange rate of C\$12.85 to US\$1). The food security transfer was \$224 a year, and the school attendance transfer \$112. The nominal value of the transfers remained constant for RPS, with the consequence that the real value of the transfers declined by about 8 percent over two years in the pilot phase due to inflation.

To enforce compliance with program requirements, beneficiaries did not receive the food or education component of the transfer if they failed to carry out any of the conditions listed in Table 2. The monitoring is done using the management information system (MIS) designed specifically for and by RPS. It comprises a continuously updated, relational database of beneficiaries, health-care providers, and schools. The MIS is also used to (1) select beneficiaries and prepare invitations to program incorporation assemblies, (2) calculate transfer payments, (3) compile requests to the Ministry of Health for vaccines and other materials, and (4) monitor whether service providers are meeting their responsibilities. Decision rules capturing the requirements in Table 2 are programmed directly into the MIS.

Table 2 shows the four different “types” of beneficiary households in the program, who receive different transfers and have to fulfill different requirements. Households with no children in the targeted age ranges are only eligible for the food security transfer but, at the same time, need only attend the health education workshops to qualify for continued receipt of the transfers. Households with children under age 5 (but without children ages 7–13 who have not completed the fourth grade) are also eligible for the food security transfer only, but have more requirements to fulfill related to their young children. Households with children ages 7–13 who have not completed the fourth grade are eligible for both the food security and education transfers and are required to comply with the school-related conditions. If, in addition, there are children under age 5 in the household, it is eligible for the same transfers, but has more requirements to fulfill, in particular, those related to the health controls for young children.

When it was learned that some, but not all, schools practiced automatic promotion, enforcement of the grade promotion condition was deemed unfair and therefore was never enforced. Similarly, when there were some delays in the delivery of vaccines, the up-to-date vaccination condition was also deemed unfair and not enforced. A third condition, punishment of children who did not have adequate weight gain, was dropped at the end of the pilot phase because of a concern about the role of measurement error and the finding that the poorest households were more likely to be punished. These changes highlight the importance of careful consideration of the required responsibilities and how they are to be monitored during the design of a conditional cash transfer program. At the same time, they show the importance of flexibility during program implementation.

Only the designated household representative could collect the cash transfers and, where possible, RPS designated the mother as the household representative. As a result, more than 95 percent of the household representatives were women. These representatives attended the health education workshops and they were responsible for ensuring that the requirements for their households were fulfilled.

Although centrally administered, with its multisectoral approach across education, health, and nutrition, RPS required bureaucratic cooperation at national, municipal, and community levels. Given funding and administrative oversight from FISE,

municipal planning and coordination was conducted by committees composed of delegates from the health and education ministries, representatives from civil society, and RPS personnel. This coordination proved important in directing supply-side responses to increased household demand for health and schooling services. At the *comarca* level, RPS representatives worked with local volunteer representatives known as *promotoras* (beneficiary women chosen by the community) and local school and health-care service providers, to implement the program. The *promotoras* were charged with keeping beneficiary household representatives informed about upcoming health-care appointments for their children, upcoming payments, and any failures in fulfilling the conditions.

3. Evaluation and Sample Design

Design of the Evaluation

To measure program impact, it is necessary to know what would have happened had the program not been implemented. The fundamental problem, of course, is that an individual, household, or geographic area cannot simultaneously undergo and not undergo an intervention. Therefore, it is necessary to construct a counterfactual measure of what might have happened had the program not been available. The most powerful way to construct a valid counterfactual is to randomly select beneficiaries from a pool of equally eligible candidates. This was done for the evaluation of RPS using a community-based randomized intervention (IFPRI 2001a).

The evaluation design is based on a randomized, community-based intervention with measurements before and after the intervention in both treatment and control communities. One-half of the 42 *comarcas* (targeted in the first stage as described in Section 2.1) were randomly selected into the program; thus, there are 21 *comarcas* in the intervention group and 21 distinct *comarcas* in the control group (IFPRI 2001a). Including a control was ethical because the effectiveness of the intervention was unknown. In addition, there was not sufficient capacity to implement the intervention everywhere at the same time. Given the geography of the program area, control and intervention *comarcas* are at times adjacent to one another. The selection was done at a public event with representatives from the *comarcas*, GON, IADB, IFPRI, and the

media present. The 42 *comarcas* were ordered by their marginality index scores and stratified into seven groups of six each. Within each stratum of six *comarcas*, randomization was achieved by blindly drawing a colored ball without replacement (starting with three blue for intervention and three white for control) from a box after the name of each *comarca* was called out. Thus, three *comarcas* from each group were randomly selected for inclusion in the program, leaving the other three as controls for the evaluation.

The original evaluation was designed to last for one year; that is, the control group was meant to be a control for only one year (after which it was expected there would be capacity to implement the intervention everywhere). Due to delays in funding for RPS as a result of a governmental audit unrelated to the program, however, incorporation of beneficiaries in the control *comarcas* was postponed until 2003, extending the possible length of the treatment-control evaluation by more than a year. The control *comarcas* waited a little over two years before being fully incorporated into the program.

Sample Selection

The survey sample is a stratified random-sample at the *comarca* level from all 42 *comarcas* described above. The areas represented comprise a relatively poor part of the rural Central Region in Nicaragua, but the sample is not statistically representative of the six municipalities (or other areas of Nicaragua, for that matter). Forty-two households were randomly selected in each *comarca* using a census carried out by RPS three months prior to the survey as the sample frame, yielding an initial target sample of 1,764 households. The sample size calculation was based on assessing the necessary sample sizes for the indicators agreed upon by RPS and IADB. Assuming a random sample, the indicator that required the largest sample size, using a significance level of 5 percent and a power of 80 percent, was enrollment for grades 1–4. To detect a minimum, statistically significant difference of eight percentage points between intervention and control groups, a sample size of 549 students for each group was required. Of course, not all households had children in this age group. According to the 2000 RPS population census, 63 percent of households had at least one child between ages 6 and 12. Therefore, to obtain a sample of 549 children (in different households), it

was necessary to interview 871 households in each group ($549 \div 0.63$) or 1,742 in total. Thus, we arrived at a target sample of 1,764 households.⁵ The first wave of fieldwork was carried out in late August and early September 2000, without replacement—that is, when it was not possible to interview a selected household, another household was not substituted.

While there was a great deal of progress in getting RPS started throughout 2001, it was not possible to design and implement all the components according to the original timelines. In particular, the health-care component was not initiated until June 2001. This delay occurred because it took longer than originally planned to design the intervention and select, contract, and train the NGO and private health-care providers. There were also delays in the payment of transfers to households due to a governmental audit that effectively froze RPS funds. As a result, the RPS 2001 follow-up survey was delayed until the beginning of October, to allow additional time for the interventions to take root and for five of the scheduled six payments to be effected. Of course, the advantage of the original design, with the scheduled RPS follow-up at exactly the same time of year as in the 2000 baseline, was that it would enable us to control better for possible seasonal variations in consumption and health. With a control group, however, the possible bias introduced by seasonality can be controlled for statistically. The delay in the survey work had the advantage of giving the program more time to take effect, thereby providing a more realistic evaluation of program operations (rather than an evaluation of program delays). In October 2001, then, beneficiaries had been receiving transfers, and the educational components of the program had been monitored for 13 months, but they had only received five months of the health and nutrition services, including the health education workshops. The 2002 survey was also carried out in October, and in the second year, beneficiaries received all components of the program for a full 12 months.

Household Attrition

We now document nonresponse in the 2000 baseline survey and attrition and contamination in the follow-up surveys. Overall, 90 percent (1,581) of the stratified

⁵ IFPRI (2001a) describes the sample size calculations in more detail and IFPRI (2001b, 2002a, and 2003) describe the baseline and follow-up samples in more detail. Since anthropometric measures were not part of the original indicator list to be evaluated, they were not used in sample size calculations.

random sample was interviewed in the first round (see Table 3) with slightly lower completion in control *comarcas*. In a handful of *comarcas* the coverage was 100 percent, but in 6 it was under 80 percent. For the follow-up surveys in October 2001, the target sample was limited to these 1,581 first round interviews and 1,453 (91.9 percent) were interviewed.⁶ Among those we classify as not being interviewed are 6 households whose surveys were lost and 37 households living in control *comarcas* who in fact appear to have been program beneficiaries, despite being initially categorized as living in a control *comarca*. As described earlier, the *comarcas* used by RPS are census areas that often do not coincide with communities. These 37 households (spread across a dozen *comarcas*) possibly were included in the program as a result of reclassification of where they lived, relative to the census boundary lines. Rather than retain them in the control group, thereby contaminating the results, they are dropped from the 2001 and 2002 samples. In 2002, just over 88 percent of target (including the 37 contaminated) households were interviewed.

Because the same target sample was used in 2002 as in 2001 (with the exception of the lost surveys and contaminated households), regardless of whether the household was interviewed in 2001, some households that were not interviewed in 2001 were successfully interviewed in 2002. Therefore, the sample for which there is a complete set of observations (in each of the 3 survey rounds) is 1,359, smaller than the 1,397 shown in the first row of the third column of Table 3. After excluding the 37 contaminated households, the percentages interviewed in intervention and control groups were similar, indicating that at least the level of attrition was not significantly different between them. This attrition is unlikely to have been random, however, a theme relevant for analyses using these data.

4. Household, Anthropometry, and Community Questionnaires

RPS Population census

The collection of basic census information for all households in the program areas had the following objectives:

⁶ Where possible, households who had moved within the 6 program municipalities were traced to their new locations.

1. Establish a complete registry of eligible households
2. Establish a sample frame for evaluation related surveys in the intervention and control census areas
3. Determine the number of resident households in the intervention census areas
4. Provide the inputs for a proxy means prediction model to estimate targeting effectiveness in the pilot phase

The RPS population census includes questions about the characteristics and composition of the household, ownership of durable goods, the education and economic activities of household members, agricultural activities, and selection of the contact person for the program.

Household Baseline Questionnaire

The data collected for the evaluation are from an annual household panel data survey implemented in both intervention and control areas of RPS before the start of the program in 2000, and in 2001 and 2002 after the program began operations. The questionnaire was a comprehensive household questionnaire based on the 1998 Nicaraguan LSMS instrument, expanded in some areas (e.g., child health and education) to ensure that all the necessary program indicators were captured, but cut in other areas (e.g., income from labor and other sources) to minimize respondent burden and ensure collection of high-quality data in a single interview.

Anthropometry Questionnaire

An anthropometric module for children under age 5 was implemented in 2000⁷ and 2002, but not in 2001. In this module, height (or length), weight, and hemoglobin were measured following standard international procedures.

Community Questionnaire

The community questionnaire is used to assess 1) whether the community has basic infrastructure, health, educational, postal services, and sources of credit; 2) other development programs present in the communities; and 3) economic events / shocks that have occurred. As described earlier, *comarcas* in the sample at times have more than one community. To the extent possible, the community survey was administered in

⁷ About one-half of the 2000 anthropometry survey had to be completed in early October, one month after the main survey, due to delays in getting all the necessary equipment and supplies for hemoglobin testing.

the largest community in the comarca. As a result, it is only an approximate description of the characteristics of all members of the comarca.

5. Data and Supporting Documentation

We are releasing the census, 2000, 2001 and 2002 data together, along with treatment and control (ToC) data files that indicate the assignment of communities and households to either treatment or control groups. Some information has been removed to protect the confidentiality of the respondents.

Table 4 indicates the timing, sample size, and content of the census and the three RPS rounds of data collection. For the census and each round of data collected, there are three types of corresponding files: raw data files (Table 5), constructed data files (Table 6), and aids to understanding the data collection, including annotated questionnaires and questionnaire manuals (Table 7).

The data files are in both Stata version 7.0 (extension .dta) and SPSS for Windows (extension .sav) formats. The annotated questionnaires, manuals, and other guides are in .pdf format, readable by Adobe Acrobat (<http://access.adobe.com>).

The annotated questionnaires contain the data files and variable names. The names for data files across rounds have the same root, only differing in the year indicated at the end of their name, and corresponding to the round of data collection (for example: *poblacionlb00*, *poblacionlb01*, and *poblacionlb02*). Variables that are in response to the exact same question in different periods have exactly the same variable name (no year variation). Questions and their corresponding variables that are not in the 2000 datasets but introduced later receive their own unique numbers and names. All variables in the data files that do not correspond to variables found on the annotated questionnaires are described in the notes to Table 5.

An English translation of the household questionnaire implemented in 2002 is provided in this data release. (Since the questionnaires across rounds are similar, household questionnaires from the earlier rounds were not translated.)

Finally, community questionnaires are at the community-level, and the unique id is *comcens*. The household questionnaires have sections at both the household and individual levels. At the household level, the unique identifier is *hogarid*. At the individual

level, the unique identifier is the combination of *hogarid* and *p00*. The anthropometry questionnaires are individual-level, and the unique identifier is the combination of *hogarid* and *p00*.

How to obtain data

The complete set of materials can be obtained from the IFPRI website (<http://www.ifpri.org/>).

6. References

- Adato, M. and T. Roopnaraine. 2004. A social analysis of the Red de Protección Social in Nicaragua. Report submitted to the Red de Protección Social. International Food Policy Research Institute, Washington D.C. Photocopy.
- Arcia, G. 1999. "*Proyecto de Red de Protección Social: Focalización de la fase piloto*" Report to the Inter-American Development Bank, Washington DC.
- Caldés, N. and J.A. Maluccio. 2005. The cost of conditional cash transfers, *Journal of International Development*, 17(2): 151–68.
- Caldés, N., D. Coady, and J.A. Maluccio. 2004. The cost of poverty alleviation transfer programs: A comparative analysis of three programs in Latin America," Food Consumption and Nutrition Division Discussion Paper Number 174, IFPRI, Washington D.C.
- IFPRI (International Food Policy Research Institute). 2001a. Evaluation design for the pilot phase of the Nicaraguan *Red de Protección Social*. Report submitted to the *Red de Protección Social*. International Food Policy Research Institute, Washington, D.C. Photocopy.
- _____. 2001b. Evaluation system for the pilot phase of Nicaraguan *Red de Protección Social*: Baseline 2000. Report submitted to the *Red de Protección Social*. International Food Policy Research Institute, Washington, D.C. Photocopy.
- _____. 2002a. Evaluation system for the pilot phase of Nicaraguan *Red de Protección Social*: Impact Evaluation 2000–2001. Report submitted to the *Red de Protección Social*. International Food Policy Research Institute, Washington, D.C. Photocopy.
- _____. 2002b. *Sistema de evaluación de la fase piloto de la Red de Protección Social de Nicaragua: Evaluación de focalización*. Report submitted to the *Red de Protección Social*. International Food Policy Research Institute, Washington, D.C. Photocopy.

- _____. 2003. *Sistema de evaluación de la fase piloto de la Red de Protección Social de Nicaragua: Evaluación de impacto 2000–2002*. Report submitted to the *Red de Protección Social*. International Food Policy Research Institute, Washington, D.C. Photocopy.
- Maluccio, J.A. and R. Flores. 2004. Impact evaluation of the pilot phase of the Nicaraguan *Red de Protección Social*, Food Consumption and Nutrition Division Discussion Paper Number 184, IFPRI, Washington D.C.

Table 1—Nicaraguan RPS eligibility and benefits in the Pilot Phase

	PROGRAM COMPONENTS	
	Food Security, Health, and Nutrition	Education
ELIGIBILITY		
Geographic targeting	All households ^a	All households ^a with children ages 7–13 who have not yet completed fourth grade of primary school
DEMAND SIDE BENEFITS		
Monetary transfers	<i>Bono alimentario (food security transfer)</i> C\$2,880 per household per year (US\$224)	<i>Bono escolar (school attendance transfer)</i> C\$1,440 per household per year (US\$112) <i>Mochila escolar (school supplies transfer)</i> C\$275 per child beginning of school year (US\$21)
SUPPLY SIDE BENEFITS		
Services provided and monetary transfers	Health education workshops every two months	
	Child growth and monitoring -Monthly (0–2 year olds) -Bimonthly (2–5 year olds)	
	Provision of anti-parasites, vitamins, and iron supplements	<i>Bono a la oferta (teacher transfer)</i> C\$80 per child per year given to teacher/school (US\$5)
	Vaccinations (0–5 year olds)	

a. As indicated in the text, a small percentage of households were excluded.

Table 2—Nicaraguan RPS beneficiary co-responsibilities monitored in the Pilot Phase

	HOUSEHOLD TYPE			
	Households with no targeted children (A)	Households with children ages 0–5 (B)	Households with children ages 7–13 who have not completed 4 th grade (C)	(B) + (C)
PROGRAM REQUIREMENT				
Attend bimonthly health education workshops	✓	✓	✓	✓
Bring children to prescheduled healthcare appointments Monthly (0-2 years) Bimonthly (2-5 years)		✓		✓
Adequate weight gain for children under 5 ^a		✓		✓
Enrollment in grades 1 to 4 of all targeted children in the household			✓	✓
Regular attendance (85 percent, i.e., no more than 5 absences every two months without valid excuse) of all targeted children in the household			✓	✓
Promotion at end of school year ^b			✓	✓
Deliver teacher transfer to teacher			✓	✓
Up-to-date vaccination for all children under 5 years ^b		✓		✓

a. The adequate weight gain requirement was discontinued in Phase II starting in 2003.

b. Condition was not enforced.

Table 3—Nicaraguan RPS evaluation survey non-response and subsequent attrition

	Baseline 2000	Follow-up 2001	Follow-up 2002
Completed Interview	1581 (89.6)	1453 (91.9)	1397 (88.4)
... of which			
Intervention			
<i>(percent intervention)</i>	810 (91.8)	766 (94.6)	722 (89.1)
Control			
(percent control)	771 (87.4)	687 (89.1)	675 (87.6)
Completed interview in all 3 rounds	1359 (77.0)	1359 (86.0)	1359 (86.0)
... of which			
Intervention			
<i>(percent intervention)</i>	706 (80.0)	706 (87.2)	706 (87.2)
Control			
(percent control)	653 (74.0)	653 (89.5)	653 (89.5)
Not Interviewed			
Uninhabited dwelling	60	51	83
Temporary absence	100	28	46
Refusal	17	6	12
Urban (misclassified)	6	0	0
Contaminated	0	37	37
Lost questionnaire	0	6	6
Target Sample	1764	1581	1581

Notes: Percent of target sample in parentheses.

Table 4—Implementation date, sample size, and content of census and RPS Evaluation data survey rounds

Census12	Date	May to July, 2000. Supplemental in September, 2000 and April, 2001
	Sample size	11,994 households 69,459 individuals
	Contents	Section I: Geographic identification Section II: Characteristics of house and household Section III: Composition of household Section IV: Education and school attendance Section V: Economic activity Section VI: Agricultural activity Section VII: Designated potential household representative
Baseline00	Date	August to September, 2000
	Sample size	1,581 households 9,747 individuals
	Contents	Household Questionnaire Front page: Geographic identification Section 1: Household members Section 2: Only for new household members Section 3: Characteristics of house and household Section 4: Health Section 5: Education Section 6: Economic activity Section 7: Fecundity and women's health Section 8: Household expenditures Section 9: Migration and remittances Section 10: Access to credit Anthropometry Questionnaire
Baseline01	Date	October 2001
	Sample size	1,453 households 9,463 individuals
	Contents	Community Questionnaire Section A: Infrastructure Section B: Health Section C: Other projects Section D: Economics events Household Questionnaire Front page: Geographic identification Section 1: Household members Section 2: Only for new household members Section 3: Characteristics of house and household Section 4: Health Section 5: Education Section 6: Economic activity Section 7: Fecundity and women's health Section 8: Household expenditures Section 9: Migration and remittances

		Section 10: Access to credit
Baseline02	Date	October 2002
	Sample size	1,397 households 9,482 individuals
	Contents	Community Questionnaire Section A: Infrastructure Section B: Health Section C: Other projects Section D: Economics events Household Questionnaire Front page: Geographic identification Section 1: Household members Section 2: For all household members Section 3: Characteristics of house and household Section 4: Health Section 5: Education Section 6: Economic activity Section 7: Fecundity and women's health Section 8: Household expenditures Section 9: Migration and remittances Section 10: Access to credit Section 11: Possession of animals Section 12: RPS beneficiary information* Anthropometry Questionnaire

* There were problems implementing this section and the data obtained were not deemed reliable and are therefore not included in this release.

Table 5–Correspondence of raw data files to data collected

Folder	Data Files	Contents	Variable notes (*)
ToC	<i>TOCCOMCENS</i>	Indicates assignment by <i>comarca</i> into intervention and control groups. Also provides marginality and priority indices.	*
	<i>TOCHOGAR</i>	Indicates assignment by household into intervention and control groups. Also indicates whether the household initially accepted the program.	*
Census12	<i>POBLACION12</i>	<i>Census, Individual Level:</i> Section III: Composition of household Section IV: Education and school attendance Section V: Economic activity	*
	<i>VIVIENDA12</i>	<i>Census, Household Level:</i> Section I: Geographic identification Section II: Characteristics of house and household Section VI: Agricultural activity Section VII: Titled household member (RPS recipient)	*
Baseline00	<i>MUESTRA_HOGARES</i>	Original sample of households to take part in evaluation of RPS – contains their unique household ID, their census <i>comarca</i> , and an indicator for “contamination.” Excludes 6 urban households as indicated in Table 3.	*
	<i>RESULTADO00</i>	<i>Household Questionnaire: Household Level:</i> Front page: Geographic identification, Participation in survey.	
	<i>VIVIENDALB00</i>	<i>Household Questionnaire: Household Level:</i> Front page: Geographic identification Section 3: Characteristics of house and household, Part A: Characteristics and expenditures of household	
	<i>POBLACIONLB00</i>	<i>Household Questionnaire: Individual Level:</i> Section 1: Household members Section 2: Only for new household members Section 4: Health Section 5: Education Section 6: Economic activity Section 7: Fecundity and women’s health	*
	<i>SECCION3B00</i>	<i>Household Questionnaire: Household Level:</i> Section 3: Characteristics of house and household, Part B: Beneficiaries of other projects	

Folder	Data Files	Contents	Variable notes (*)
	<i>GASTOS_A00</i>	<i>Household Questionnaire: Household Level: Section 8: Expenditures of the household, Part A: Expenditures in food, drink, tobacco in the last 15 days</i>	
	<i>GASTOS_B100</i>	<i>Household Questionnaire: Household Level: Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.1: Expenditures last week</i>	
	<i>GASTOS_B200</i>	<i>Household Questionnaire: Household Level: Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.2: Expenditures last month</i>	
	<i>GASTOS_B300</i>	<i>Household Questionnaire: Household Level: Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.3: Expenditures in the last 6 months</i>	
	<i>GASTOS_B400</i>	<i>Household Questionnaire: Household Level: Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.4: Expenditures in the last 12 months</i>	
	<i>EQUIPOS00</i>	<i>Household Questionnaire: Household Level: Section 8: Expenditures of the household, Part C: Household Equipment</i>	
	<i>MIGRACION00</i>	<i>Household Questionnaire: Individual Level: Section 9: Migration and Remittances</i>	
	<i>CREDITO_A00</i>	<i>Household Questionnaire: Household Level: Section 10: Access to Credit Part A: Institutional Credit</i>	
	<i>CREDITO_B00</i>	<i>Household Questionnaire: Household Level: Section 10: Access to Credit Part B: Informal Credit</i>	
	<i>ANTRO00Z</i>	<i>Anthropometry Questionnaire: Individual Level: Weight, height, hemoglobin for individuals under 5.</i>	*
Baseline01	<i>COMUNLB_A01</i>	<i>Community Questionnaire: Community Level: Section A: Infrastructure</i>	
	<i>COMUNLB_B01</i>	<i>Community Questionnaire: Community Level: Section B: Health</i>	
	<i>COMUNLB_C01</i>	<i>Community Questionnaire: Community Level: Section C: Other projects</i>	
	<i>COMUNLB_D01</i>	<i>Community Questionnaire: Community Level: Section D: Economic events</i>	
	<i>RESULTADO01</i>	<i>Household Questionnaire: Household Level: Front page: Geographic identification, Participation in survey.</i>	

Folder	Data Files	Contents	Variable notes (*)
	<i>VIVIENDALB01</i>	<i>Household Questionnaire: Household Level:</i> Front page: Geographic identification Section 3: Characteristics of house and household, Part A: Characteristics and expenditures of household	
	<i>POBLACIONLB01</i>	<i>Household Questionnaire: Individual Level:</i> Section 1: Household members Section 2: Only for new household members Section 4: Health Section 5: Education Section 6: Economic activity Section 7: Fecundity and women's health	*
	<i>SECCION3B01</i>	<i>Household Questionnaire: Household Level:</i> Section 3: Characteristics of house and household, Part B: Beneficiaries of other projects	
	<i>GASTOS_A01</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part A: Expenditures in food, drink, tobacco in the last 15 days	
	<i>GASTOS_B101</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.1: Expenditures last week	
	<i>GASTOS_B201</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.2: Expenditures last month	
	<i>GASTOS_B301</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.3: Expenditures in the last 6 months	
	<i>GASTOS_B401</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.4: Expenditures in the last 12 months	
	<i>EQUIPOS01</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part C: Household Equipment	
	<i>MIGRACION01</i>	<i>Household Questionnaire: Individual Level:</i> Section 9: Migration and Remittances	
	<i>CREDITO_A01</i>	<i>Household Questionnaire: Household Level:</i> Section 10: Access to Credit Part A: Institutional Credit	

Folder	Data Files	Contents	Variable notes (*)
	<i>CREDITO_B01</i>	<i>Household Questionnaire: Household Level:</i> Section 10: Access to Credit Part B: Informal Credit	
Baseline02	<i>COMUNLB_A02</i>	<i>Community Questionnaire: Community Level:</i> Section A: Infrastructure	
	<i>COMUNLB_B02</i>	<i>Community Questionnaire: Community Level:</i> Section B: Health	
	<i>COMUNLB_C02</i>	<i>Community Questionnaire: Community Level:</i> Section C: Other projects	
	<i>COMUNLB_D02</i>	<i>Community Questionnaire: Community Level:</i> Section D: Economic events	
	<i>RESULTADO02</i>	<i>Household Questionnaire: Household Level:</i> Front page: Geographic identification, Participation in survey.	*
	<i>VIVIENDALB02</i>	<i>Household Questionnaire: Household Level:</i> Front page: Geographic identification Section 3: Characteristics of house and household, Part A: Characteristics and expenditures of household	
	<i>POBLACIONLB02</i>	<i>Household Questionnaire: Individual Level:</i> Section 1: Household members Section 2: Only for new household members Section 4: Health Section 5: Education Section 6: Economic activity Section 7: Fecundity and women's health	*
	<i>SECCION3B02</i>	<i>Household Questionnaire: Household Level:</i> Section 3: Characteristics of house and household, Part B: Beneficiaries of other projects	
	<i>GASTOS_A02</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part A: Expenditures in food, drink, tobacco in the last 15 days	
	<i>GASTOS_B102</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.1: Expenditures last week	
	<i>GASTOS_B202</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.2: Expenditures last month	

Folder	Data Files	Contents	Variable notes (*)
	<i>GASTOS_B302</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.3: Expenditures in the last 6 months	
	<i>GASTOS_B402</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part B: Other non-food expenditures, Part B.4: Expenditures in the last 12 months	
	<i>EQUIPOS02</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part C: Household Equipment	
	<i>EQUIPOSAGR02</i>	<i>Household Questionnaire: Household Level:</i> Section 8: Expenditures of the household, Part C: Agricultural Equipment	
	<i>MIGRACION02</i>	<i>Household Questionnaire: Individual Level:</i> Section 9: Migration, Remittances, and Aid Part A: Migration and Remittances	
	<i>AYUDAS02</i>	<i>Household Questionnaire: Individual Level:</i> Section 9: Migration, Remittances, and Aid Part B: Aid	
	<i>CREDITO_A02</i>	<i>Household Questionnaire: Household Level:</i> Section 10: Access to Credit Part A: Institutional Credit	
	<i>CREDITO_B02</i>	<i>Household Questionnaire: Household Level:</i> Section 10: Access to Credit Part B: Informal Credit	
	<i>ANIMAL02</i>	<i>Household Questionnaire: Household Level:</i> Section 11: Possession of Animals	
	<i>ANTRO02Z</i>	<i>Anthropometry Questionnaire: Individual Level:</i> Weight, height, hemoglobin for individuals under 5.	*

* See notes below for explanation of variables in these data files

Table 5: Notes on variables that do not directly correspond to annotated questionnaire

TOCCOMCENS

- comcens: unique ID for *comarca* censal (not equal to i03)
- grupo: 0 if control, 1 if intervention
- indice: Marginality index (see Arcia, 1999)
- priorid: Priority (see Arcia, 1999)

TOCHOGAR

- hogarid: unique ID for household
- particip: 1 if family accepted RPS at a community assembly. Does not mean they necessarily received program throughout or that they did not enter later

POBLACION12

- igno1 flags missing information: 1 if missing age, 3 if missing education or economic activity, 2 if missing both
- registro Wave of census survey:
 - 1 = May-July 2000
 - 2 = September 2000
 - 3 = April 2001

VIVIENDA12

- supmet1 Finca (parcel) land area in square meters for finca 1
- supmet2 Finca (parcel) land area in square meters for finca 2
- supmet3 Finca (parcel) land area in square meters for finca 3
- supmet4 Finca (parcel) land area in square meters for finca 4
- fincas Total number of fincas (parcels) used by family
- supmet Total area of land in square meters used by family

MUESTRA_HOGARES

- hogarid: unique ID for household
- comcens: unique ID for *comarca* censal (not equal to i03)
- contaminated 1 if household in control area but received RPS program. Excluded from 2001 and 2002 sample

POBLACIONLB00

- faltas2 New member of household is missing section 2.
- faltas4a Person is missing sections 4a, 4b, and 4c
- faltas4d Person is missing section 4d
- faltas5a Person is missing section 5a
- faltas5b Person is missing section 5b
- faltas6 Person is missing section 6
- faltas7 Person is missing section 7

ANTRO00Z

- edad Age in exact months, calculated using dob (date of birth) and dint date of interview)
- haz Height for age z-score, as calculated by Epi-Info
- hap Percentile of haz, as calculated by Epi-Info
- waz Weight for age z-score, as calculated by Epi-Info
- wap Percentile of waz, as calculated by Epi-Info
- whz Weight for height z-score, as calculated by Epi-Info
- whp Percentile of whp, as calculated by Epi-Info
- flag Variable created by Epi-Info, to indicate problem in calculation of scores, because of error in weight, error in height, or error in date of birth.

POBLACIONLB01

- faltas4a Person is missing section 4a
- faltas7 Person is missing section 7

RESULTADO02

- migmuni Destination of migration if household not available for interview

POBLACIONLB02

- faltas4a Person is missing section 4a
- faltas4b Person is missing section 4b
- faltas7 Person is missing section 7

ANTRO02Z

- edad Age in exact months, calculated using dob (date of birth) and dint date of interview)
- haz Height for age z-score, as calculated by Epi-Info
- hap Percentile of haz, as calculated by Epi-Info
- waz Weight for age z-score, as calculated by Epi-Info
- wap Percentile of waz, as calculated by Epi-Info
- whz Weight for height z-score, as calculated by Epi-Info
- whp Percentile of whp, as calculated by Epi-Info
- flag Variable created by Epi-Info, to indicate problem in calculation of scores, because of error in weight, error in height, or error in date of birth

Table 6—Explanation of Constructed Data Files (#=0, 1, or 2)

Constructed Data File	Program	Infiles	Purpose
<i>G_ALIMENTOS0#</i>	consumo0#.do	<i>GASTOS_A0#</i> <i>GASTOS_B10#</i>	Household annual expenditures on each food item
<i>G_NOALIMENTOS0#</i>	consumo0#.do	<i>GASTOS_B10#</i> <i>GASTOS_B20#</i> <i>GASTOS_B30#</i> <i>GASTOS_B40#</i>	Household annual expenditures on each nonfood item
<i>G_TOTAL0#</i>	consumo0#.do	<i>VIVIENDALB0#</i> <i>POBLACIONLB0#</i> <i>GASTOS_A0#</i> <i>GASTOS_B10#</i> <i>GASTOS_B20#</i> <i>GASTOS_B30#</i> <i>GASTOS_B40#</i> <i>EQUIPOS0#</i>	Total household expenditure on food and nonfood items. Also includes household expenditures on basic services such as garbage removal, electricity and telephone, health expenditures, education expenditures, value of durable goods owned by household. Finally, total expenditures, per capita expenditures (total and food), and food shares.
<i>SWEIGHT0#</i>	(not included)	<i>VIVIENDALB0#</i> <i>VIVIENDA12</i>	Calculates sample weights for baseline. Note these make it representative of program area. Weights based on successful interviews relative to total number of interviews in first census (from which the baseline sample was drawn).

Table 7–Correspondence of annotated questionnaires, manuals and other guides to rounds of data collection

Round	Questionnaire	Pdf files	Type
Census12	Census	registro_fasel_codebook.pdf	Codebook
		registro_fasel_manual.pdf	Manual
		registro_fasel_qv.pdf	Annotated Questionnaire
Baseline00	Household	hhldb00_manual.pdf	Manual
		hhldb00qv.pdf	Annotated Questionnaire
	Anthropometry	antroldb00_manual.pdf	Manual
		antroldb00_metodologia.pdf	Description methodology
		antroldb00qv.pdf	Annotated Questionnaire
Baseline01	Household	hhldb01_manual.pdf	Manual
		hhldb01qv.pdf	Annotated Questionnaire
	Community	comldb01_manual.pdf	Manual
		comldb01qv.pdf	Annotated Questionnaire
Baseline02	Household	hhldb02_manual.pdf	Manual
		hhldb02qv.pdf	Annotated Questionnaire
	Anthropometry	hhldb02qvEnglish.pdf	Annotated Questionnaire, translated to English
		antroldb02_manual.pdf	Manual
		antroldb02qv.pdf	Annotated Questionnaire
	Community	comldb02_manual.pdf	Manual
		comldb02qv.pdf	Annotated Questionnaire