

An Assessment of Poverty and Safety Nets in Nicaragua

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“The child is the father of the man”
William Wordsworth

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Executive Summary

Nicaragua is one of the poorest countries in Latin America and the Caribbean. Almost half of its population is poor and one fifth of its population is extremely poor according to the most recent estimates. According to different sources, the percentage of poor has decreased by 3 to 5 percentage points between 1993 and 1998. Despite this achievement, the absolute number of poor increased by roughly 240,000 people. The persistence of child malnutrition at remarkably high levels is one of the strongest indicators of inadequate advances in poverty reduction.

This recent reduction in poverty was more concentrated in the rural areas of the Central and Pacific regions. One of the main factors behind this trend is believed to be the fast output growth of the agricultural sector, where poor people obtain most of their income. This must have come about through an increase in employment since real wages in the agricultural sector have in fact dropped since the mid 90s. Rural poverty reduction might be indeed "*leaning against the wind*", i.e. while employment is increasing, real wages are falling in the agricultural sector. It is essential to understand the causes of this downward trend that might undermine the long-term sustainability of rural poverty reduction. In this respect, more emphasis and policy effort should be placed on reaching a higher diversification between on and off-farm activities in rural areas and on human capital accumulation. Significant differences were observed between poverty trends in rural and urban areas. In some areas (Pacific, Atlantic) both urban poverty and extreme poverty grew dramatically according to official sources. Urban-rural migration flows and migration outside the country might have played a role in accounting for these differentials.

Among other factors total fertility differentials between poor and non-poor women are significantly undermining poverty reduction achievements in Nicaragua, where the demographic transition is in its early stages. Policy interventions are urgently needed. Particularly worrisome is the extent of adolescent fertility, one of the highest in the LAC region. It is well known that a high number of dependants has important implications for the division of tasks among family members within the household, for children's human capital accumulation and early entry into the labor market and women's labor market participation. Key areas of action are therefore: reproductive health (in particular adolescent reproductive health), basic family education, and early-childhood care.

The education achievements of Nicaraguans are still among the lowest in Latin America and the Caribbean, even though educational indicators improved between 1993 and 1998. The average years of schooling for people older than ten grew from 4.5 to 4.9 at the national level and increased from 2.0 to 2.6 in rural areas. The school age population out of school in the 7-12 age bracket fell from 21.3% to 15.7%. School non-attendance dropped from 47.1% to 35.3% among extremely poor children in rural areas. In the 13-18 age bracket, children out of school remained stable around 44 percent. Both demand and supply side factors might explain these achievements and define priorities for the future. Poor teaching quality and large class sizes, inadequate salaries for teachers, lack of teaching materials and poor infrastructure, particularly in the Pacific and Atlantic rural regions, are the main obstacles to accumulation of education on the supply side, though

the situation varies by region and municipality. The lack of schools plays an important role, particularly in rural areas, for education above 4th-6th grade.

On the demand side there is evidence that increasing private costs of education (fees, uniform transportation costs, etc.) might have strongly restrained school enrollment, particularly among the extremely poor in rural areas. School fees are perceived largely as non-voluntary. In 1998 almost 60% of extremely poor families with children age 7-12 not attending school declared that this was due to either a lack of resources or to the fact that children needed to work. Child labor incidence is high among extremely poor households, particularly among male children in rural areas, and it seems to be motivated by families' lack of resources. Children would work less or go to school more if families could afford it. A strong positive relationship between extreme poverty and young (age 13-18) adults' participation in the labor market in both rural and urban areas and children's participation (age 7-12) in rural areas suggests that poverty is strongly correlated with early participation in the labor market.

Poor people are highly vulnerable to a wide array of risks which can cause large welfare losses. Some of these risks are purely idiosyncratic, others more regional or sector covariant, others more markedly macro covariant. Given that they already live close to subsistence, poor people are forced to minimize the probability of income losses by engaging in low risk/low return activities and elaborate informal mechanisms of "self-protection" and risk reduction. Child labor is just one example of the inefficient mechanisms of risk diversification adopted by asset-poor people. In the long term this strategy of risk prevention and mitigation, which could be optimal given the constraints faced, tends to erode poor people's few productive assets and might endanger their already limited ability to generate future income. What is known as persistent poverty or a "vicious cycle of poverty" is indeed the outcome of a combination of two factors: risk exposure and the very limited capacity to manage risk, which leads to families' inefficient prevention, mitigation and coping strategies.

The main goal of safety nets is to support the poor in managing risks. Traditionally, social protection policies have focused on risk-coping strategies. However social protection should be understood not only as a tool for short-term poverty alleviation but also for long-term poverty reduction objectives, which deal with risk reduction and mitigation. By providing poor households with access to mechanisms which reduce their overall risk exposure (risk prevention and mitigation), the goal is to engage them in activities that will deliver greater returns in the future. This innovative two-pillar concept of the Social Safety Net is behind the design and implementation of a safety net pilot project in Nicaragua, the *Red*, which belongs to the category of targeted human development programs.

The *Red* in fact combines some of the elements of needs-based cash transfers, particularly the targeting, monitoring and transfer procedures oriented towards the objective of short-term extreme poverty alleviation, within the framework of a long term extreme poverty reduction strategy. This strategy is based on the idea of fostering extremely poor

households' investment in child and family human capital through three components: education, nutrition and health, which includes early childhood and reproductive care. To gain access to benefits, families commit to sending their children to school, attending pre-natal and early childhood care, food security and nutritional courses, regularly visiting health posts for children's vaccinations, etc. All of these commitments are very important risk reduction management measures. This type of arrangement therefore reduces the danger of beneficiaries' passive entitlements by seeking households' active participation and permanent behavioral changes. Labor training components for adults, particularly for off-farm activities could be also added to this menu.

This innovative type of safety net raises a series of questions that we try to address in the context of Nicaragua. Is this a suitable social protection strategy in the Nicaraguan context? We argue that it is. The rationale for this type of design is the existence of resource constraints, which limit families' demand for health care, education and food. From the quantitative and factual evidence outlined in the paper, it seems very plausible to conclude that demand constraints are playing an important role in families' weak accumulation of human capital in Nicaragua. Should demand side interventions be complemented with supply side interventions? The answer is also positive, particularly concerning health and education in rural areas, where the lack of or the bad quality of service supply is a bottleneck for investment in human capital.

Another issue is whether such a strategy should be applied in a country with widespread poverty and extreme poverty. Critiques of programs like the *Red* argue that when poverty is widespread there are no clear criteria to select the program beneficiaries. The argument seems to suggest that poverty reduction and alleviation policies can be successfully implemented only if the extent of poverty is limited. It is clear that by the same argument any intervention (road or school construction, water and sanitation programs, etc.) which fails to reach all the poor or all the extremely poor in a country with widespread poverty should be questioned as well. A legitimate concern is rather: given a certain amount of resources available and too many poor, with whom do we begin? If the objective is extreme poverty reduction, then the beneficiaries of the intervention should be picked from those at the bottom of the ladder. Having good targeting mechanisms, i.e. technically robust and cost-effective, is therefore a key priority to reduce the risk of instrumental or political use of targeted programs. This task is feasible.

Does the country have the institutional and administrative capacity to design, implement and maintain appropriate means testing, monitoring and evaluation procedures? Nicaragua is in the process of strengthening an institutional and administrative capacity to design, implement and maintain appropriate targeting, monitoring and evaluation procedures, with many stakeholders involved, among them the *Fondo de Inversión Social de Emergencia* and the National Institute for Statistics and Census (INEC). Other targeted programs could rely on the methodology used to identify beneficiaries piloted by the *Red*. This will represent a remarkable long-term gain and a sizeable step forward in the country's poverty reduction strategy. For this reason targeting and monitoring are vital elements which need to be strengthened.

Finally, there is the question of whether a social safety net is fiscally sustainable in the present situation of Nicaragua. The *Red* should not be simply considered another program, but should be seen as an important flexible scheme for targeted interventions. We argue that the expansion of the Social Safety Net, if the pilot phase proves successful, should not necessarily imply more social spending at least at the beginning. A cost-effectiveness analysis of the current portfolio of social expenditures is needed, including those programs that are financed by external sources. Poverty targeted expenditures and programs that are largely ineffective should be eliminated and resources should be redirected preferably to social protection programs that embody more transparent monitoring and evaluation mechanisms. The assessment of food aid programs, which amount to 2.1% of GDP yearly, i.e. roughly what is required to close the extreme poverty gap in Nicaragua, represent an example of what needs to be done and known before taking a resource re-allocation decision.

1. The evolution of poverty during the 1990s¹

Nicaragua is one of the poorest countries in Latin American and the Caribbean. Almost half of its population is poor and one fifth of its population is extremely poor² according to the most recent estimates (more than 2.2 million people are poor and around 800.000 people are extremely poor). The incidence of poverty is well above the average for Central America³. Recent official estimates show a mild decrease in the percentage of poor in the country, from 50.3% to 47.9%, from 1993 to 1998.⁴ Our calculations show a reduction of 5 percentage points from 50.2% to 45.2%.⁵ During the same period extreme poverty declined by 2.1 percentage points, from 19.4 to 17.3 percent of the whole population according to official estimates. This decline was slightly higher according to our estimates, from 20.8 to 16.3 percent.⁶ No matter the methodology used to measure poverty incidence, the crude reality is that in absolute terms the number of poor and extremely poor people is growing quickly. Therefore the headcount reduction does not represent a totally satisfactory achievement. Between 1993 and 1998 the number of poor increased by roughly 240,000 people and in 1998 there were 50,000 more extremely poor people than in 1993. Among other factors, total fertility differentials between poor and non-poor women might be significantly undermining poverty reduction achievements in Nicaragua.

The greatest improvement in the incidence of poverty was concentrated in the rural areas of the country where extreme poverty and poverty fell by almost 7.5 percentage points

¹ This section draws on the preliminary findings from the World Bank's Poverty Assessment study for Nicaragua; it is also based on "*Estrategia de Reducción de la Pobreza. Primera Parte: Diagnósticos y Lineamientos*", República de Nicaragua, January 21st 2000, on some of the preliminary findings of the *Resultados del Estudio de los Determinantes de la Pobreza en Nicaragua*, IPEA-UNDP March 2000 and on author's calculation from the LSMS 1993 and 1998.

² Source INEC/LSMS, 1993 and 1998 see, República de Nicaragua, op. cit.

³ See M.Székely, N.Lustig, M.Cumpa and J.A. Mejía, "*How Many Poor Are There Really? 2.000 Options for Latin America*" IADB, forthcoming.

⁴ See "*Estrategia de Reducción de la Pobreza. Primera Parte: Diagnósticos y Lineamientos*", República de Nicaragua, January 21st 2000; Source Living Standard Measurement Survey (LSMS) data both for 1993 and 1998 and a country specific endogenous poverty line. Both the World Bank and the UNDP-IPEA studies define the poverty line as the minimum per capita annual income necessary to acquire minimum caloric requirements and cover housing, transportation and clothing costs. The estimated poverty line was equivalent to 4,259 Cordobas in 1998 and 2,573.64 Cordobas in 1993, while the estimated extreme poverty line was equivalent to 2,246 Cordobas in 1998 and 1245.84 in 1993. The author's, the World Bank's and the official statistics are computed using the distribution of consumption per capita. The UNDP-IPEA study considers the distribution of income per capita. According to the UNDP-IPEA study poverty in Nicaragua remained stable around 57% during the 1993-1998 period.

⁵ To compute head counts and other statistics we think it is more appropriate to use the distribution of consumption per capita rather than the distribution of income per capita as done by UNDP-IPEA. Official INEC sources and the World Bank also use consumption per capita. Discrepancy between our calculations and the official statistics come from the fact that our sample contains a higher number of observations than the series of consumption per capita used by official INEC sources and the World Bank, particularly for the 1998 LSMS. Moreover there are some discrepancies between our estimated consumption per capita and the World Bank's estimates for a certain number of individual observations.

⁶ The recent IPEA-UNDP study uses the same endogenous poverty line of the World Bank study and computes head count ratios from the per capita income distribution, where households' income includes self-consumption.

according to official statistics,⁷ and by 10 percentage points according to our calculations. Despite this progress, the incidence of poverty is still four times higher in rural than in the urban areas. The incidence of extreme poverty among the rural population is double that found among the urban population. A large fraction of the rural population, 68.5%, is poor and 28.9% are extremely poor.⁸ Outside of Managua, the rural population represents 52% of the total.

From 1993 to 1998, the depth and severity⁹ of poverty decreased. Once again the trend was led by the achievements in the rural areas. Nonetheless both the depth and severity of poverty and extreme poverty are still three to four times higher in the rural areas than in the urban areas. There have been important differences in the evolution of poverty incidence, depth and severity among the Pacific, Central and Atlantic regions of the country. In some regions the incidence of poverty fell; in others it increased substantially. This explains why, at the national level, the decline in poverty has overall been small in size. Disentangling poverty trends by region is very useful, particularly when priorities for interventions need to be defined.

Of the three geographical areas, only the central region experienced a considerable reduction in the incidence of both extreme poverty and poverty. This was seen in both urban and rural areas, particularly in the latter. In fact, extreme poverty and poverty fell by 14.8 and 10.7 percentage points in the Central rural region.¹⁰ The poverty reduction accomplishments of the other two regions were instead weak. In the Pacific region rural poverty decreased by 3.6 percentage points but this decrease was more than offset by a dramatic increase in urban poverty. This is particularly worrisome since the urban population represents more than half of the total population in the Pacific region. According to official sources, during the same period 1993-1998 both rural and urban extreme poverty increased by 10 percentage points in the Atlantic region. At the same time the slight decrease in the incidence of rural poverty was more than offset by a substantial surge in urban poverty of 8.9 percentage points.¹¹

Despite the fact that the incidence of poverty is higher in the Atlantic region, the Pacific rural and Central rural regions account for a greater portion of the total poor population, 21.7% and 39.3% respectively. The reason is that only 9% of the total population live in the Atlantic region, while 33.8% live in the Pacific region¹² and 29.5% in the Central region. However while the Atlantic region accounts for a smaller percentage of the total extreme poverty and poverty in the country, its contribution to Nicaragua's total poverty grew dramatically in the last decade. For example, in 1993 the Atlantic region accounted only for 9.1% of the total extreme poverty. This percentage almost doubled during the five

⁷ República de Nicaragua, op. cit.

⁸ República de Nicaragua, op. cit. Our calculations show lower values, extreme poverty at 26.1% and poverty at 62.1% of the rural population.

⁹ Measured respectively by the Poverty Gap Index and the Foster-Greer-Thorbecke Index using consumption per capita figures. See official sources.

¹⁰ República de Nicaragua, op. cit.

¹¹ República de Nicaragua, op. cit.

¹² Excluding Managua.

following years and in 1998 it was 17.4%. During the same period the contribution of the Central rural region to total extreme poverty decreased by 6 percentage points.¹³ The Pacific and the Central rural regions are still priority regions for poverty and extreme poverty reduction efforts. These facts justify the Government's emphasis on rural poverty. However, much greater attention should be devoted to the rapidly growing poverty and extreme poverty in the Atlantic region.

One of the main factors behind the rural poverty reduction observed in recent years is believed to be the fast output growth of the agricultural sector¹⁴ where poor people obtain most of their income. If this is the case, it is hard to imagine that the way growth in the agricultural sector reduced poverty was through an increase in real wages. Real monthly wages in the agricultural sector have in fact dropped by 30 percent¹⁵ since 1993, while during the same period the contribution of agricultural wages to total income per capita doubled for the poor. Agricultural wages became the main source of income.¹⁶ Therefore, if the growth in the agricultural sector reduced poverty, it must have come about through an increase in employment.¹⁷ Indeed the evidence confirms an increase in both labor force participation¹⁸ and employment¹⁹ in both urban and rural areas among poor and non-poor

¹³ See Annex I “*Estrategia de Reducción de la Pobreza. Primera Parte: Diagnósticos y Lineamientos*”, República de Nicaragua, January 21st 2000.

¹⁴ According to IPES (1998), agricultural, forestry and fishing output grew by 3.4% during the 1990-1997 period.

¹⁵ Source: Central Bank of Nicaragua. It is more likely that this fall is due to a drop in real wages per hour worked than to a drop in the total hours worked per month, given the general increasing trend in labor force participation. According to other sources, IPES (1998), average real wages in Nicaragua fell by an average 2% yearly since 1993, this means roughly a 14% decrease during the 1993-1999 period. Real wages in the rural sector performed on average worse than wages in other sectors. Therefore the drop in agricultural real wages could indeed be between 20% and 30% during this short period.

¹⁶ Labor income is 82.5% of total income for the rural poor; 49.6% is agricultural labor income, 31.9% is non-agricultural income (preliminary data from the World Bank Nicaragua Poverty Assessment).

¹⁷ Preliminary evidence from governmental sources on employment creation in the agricultural sector concludes that more than 200,000 new jobs have been created in the last five years. Critics of this evidence argue that most of the jobs created are temporary and unstable.

¹⁸ Author's calculation from LSMS 1993 and 1998. Our definition of labor force participation excludes non remunerated family workers who work less than 15 hours per week, those individuals who are not actively searching because they think they won't find a job or because they are tired of looking for a job. These categories are included in the labor force definition of the World Bank and of the official sources. Among extremely poor men age 15-65, the labor force participation rate increased from 70.0% to 76.6 % in the urban areas and from 85.1% to 88.8% in the rural areas. Among extremely poor women age 15-65 the labor force participation rate increased from 35.4% to 46.5 % in urban areas and from 13.6% to 25.0 % in rural areas. Among non-poor males age 15-65 participation increased from 72.0% to 77.7 % in urban areas and from 79.0% to 89.0% in rural areas. Among non-poor females age 15-65 participation increased from 46.9% to 50.2% in urban areas while it decreased from 38.4 to 34.7 in rural areas.

¹⁹ Open unemployment decreased from 19.5% to 13.2% among extremely poor males age 15-65 in urban areas, the same figure went from 24.7% to 9.4 % among extremely poor women age 15-65 in urban areas. No relevant changes are observed in the open unemployment rate among extremely poor men in rural areas, while open unemployment fell percentage points from 11 % in 1993 among extremely poor female age 15-64 in rural areas. Individuals who are not actively searching because they think they won't find a job or because they are tired of looking for a job are excluded from the active labor force and therefore from the pool of unemployed.

men and women during the period taken into consideration. Given that labor is the main asset for poor and even more so for extremely poor workers labor, rural poverty reduction might be indeed “*leaning against the wind*”, i.e. while employment is increasing, real wages are falling in the agricultural sector.

In conclusion, according to official data, the regions that experienced the largest decline in poverty incidence are those that held a concentration of crops which realized growth in output, areas harvested and yield. The Central rural and Pacific rural regions, where one half and one third of total income, respectively, is agricultural income, saw increasing returns to agricultural and livestock assets, above all through the increase in coffee (Central rural) and sugar cane (Pacific rural) areas harvested and yields. The scenario for sustainable poverty reduction is, however, not totally optimistic and a concern regarding who is benefiting the most from the agricultural sector expansion should be raised.²⁰ Despite the sustained growth of the agricultural sector, monthly agricultural wages fell dramatically in real terms.

It is essential to understand the causes of this downward trend. When evidence on real wages is matched with evidence on male and female labor market participation and unofficial numbers on migration flows outside the country it seems very plausible to conclude that downward pressure on real wages might be caused by an excess of unskilled labor supply, relative to the rate of job creation. In the first place this downward trend might have been caused by changes in the organization of the agricultural production during the 90s. A decrease in the main earner’s income might induce more members of a family to enter the labor market as a second round effect, both in on- and off-farm activities, particularly among extremely poor households. This family’s survival strategy might push aggregate real wages further down; more so if there is substitutability between people already in the labor force and newcomers. Family welfare, as measured by disposable income or consumption per capita, might at first not deteriorate even when real wages per unit of time worked are falling if the total labor of households’ supply increases. Nonetheless, the total amount of a family’s labor supply has an upper limit.²¹ If this limit is reached, family welfare drops.

Furthermore, if the family’s needs induce children to enter the labor market early, this will affect their schooling achievements and future earnings prospects, therefore undermining medium and long-term poverty reduction achievements. These attainments will hardly become sustainable if the downward trend in real wages lasts; in this respect, more emphasis and policy efforts should be placed on reaching a higher diversification between on and off-farm activities in rural areas.

Additionally, other factors may be undermining the long-term sustainability of the agricultural sector growth. Among them are: the low diversification of agricultural

²⁰ This is an issue that clearly emerges from the preliminary evidence of the IPEA-UNDP study which shows an increase in income inequality between 1993 and 1998, with a substantial increase in the share of total income held by the top quintile of the income distribution.

²¹ An obvious point: fertility can move this boundary but not to infinity.

exports, which increases the vulnerability of the sector to international price fluctuations, the mediocre education of the labor force, the low rate of technology adoption, the delays in land registration and titling, the still very limited access to agricultural credit and the improved but still existing trade policy anti-export bias and import protection.

The difference in poverty trends between rural and urban regions is also quite puzzling. Why did poverty in urban areas not drop during this period and why in some areas (Pacific, Atlantic) did it instead grow dramatically according to official sources? This is an issue that should be investigated further. Migration might be possibly playing a role. Migration, which is difficult to control for, may be greatly affecting employment and poverty figures. Migration flows between regions within the country and migration outside Nicaragua²² might be affecting differentials in the poverty patterns across regions²³ and might also have a significant impact on the disposable income of Nicaraguan families through remittances and therefore on poverty incidence.

No matter the outcome of the methodological discussion on the different ways of measuring poverty,²⁴ the reality is that statistics from different sources show that poverty and extreme poverty in Nicaragua either have not fallen or if they did fall, the drop was minimal, between three and five percentage points. When almost half of the population is still in poverty a drop in the head-count of this size is unfortunately small. The persistence of child malnutrition²⁵ at remarkably high levels during the 1993-1998 period is one of the strongest indicators of inadequate advances in poverty reduction.

2. Some determinants of poverty

The determinants of poverty in Nicaragua are complex. The aim of this paper is not to review all the important factors influencing poverty. Poverty is strongly associated with low levels of or absence of asset ownership (land, education, water and sanitation, etc.).²⁶ Participation in the labor force is high among rural males (89% for both poor and non-poor age 15-65) and still very low among poor women age 15-65 in the rural areas (only

²² For example an estimated 600,000 Nicaraguans live and work in Costa Rica which, together with the United States, is the main destination of Nicaraguans leaving their country. An estimated 800,000 to 1.2 million Nicaraguans currently live abroad.

²³ 5% of the working population surveyed in the 1998 LSMS had migrated in the previous years (World Bank Poverty Assessment study for Nicaragua). This is not a small fraction when projected on a five-year period if the identity of migrants changes from one year to another.

²⁴ See Appendix A.

²⁵ Chronic malnutrition affects 23.6% of children between 0 and 5 year old. The incidence of children's chronic malnutrition is close to 36% among extremely poor both in urban and rural areas and it has been slightly decreasing in rural areas, and increasing in urban areas. See Appendix I "*Estrategia de Reducción de la Pobreza. Primera Parte: Diagnósticos y Lineamientos*", República de Nicaragua, January 21st 2000.

²⁶ For an extensive assessment of qualitative results see A.J. Moreno "*Estudio Cualitativo de la Pobreza y Tecnología Agrícola*" Informe de la region Pacifico, Proyecto PNUD/NIC/98/004/INEC, February 2000; Miguel Angel Castellón "*Estudio Cualitativo de la Pobreza*" Informe de la region Atlántica de Nicaragua, World Bank February 2000; "*Estudio Cualitativo de la Pobreza en Nicaragua*" Informe de la region Central, IEN/INEC February 2000.

25%). The difference between average open unemployment rates among poor and non-poor individuals in the rural areas is not dramatic, 5.6% and 4.2% respectively in rural areas, 9.6% and 7.6% percent in urban areas.²⁷ More than two thirds of the population would be willing to work more hours²⁸ which is a symptom of strong perceived underemployment across the whole income distribution, phenomena which simple unemployment figures tend to hide. Despite being employed, a large segment of the population does not make enough to live, lacking the minimum amount of resources needed to face food, health, education, transportation and clothing expenditures.

Absence or limited asset ownership, in particular of land to be used as collateral, exclude poor and extremely poor people from access to credit, even from those forms of credit that non-poor families can obtain in their daily shopping activities from small retailers (i.e. from *pulperías*). Most of the agricultural and livestock activities of poor rural households are exclusively oriented to self-consumption and the economy is essentially a barter economy where the use of money is limited. Lack of credit as well as lack of monetary income due to the non-commercialization of agricultural production preclude poor families from buying tools and other agricultural inputs and also limit the ability of households to diversify nutritional habits. Animals (chickens and pigs) are seen as a security asset, which can be sold in case of emergency.

Private banks handle the supply of agricultural credit in Nicaragua almost entirely. Although the volume of agricultural credit has increased substantially since 1996, the supply of and the demand for financial services are still very underdeveloped and the great majority of the population has no access to them.²⁹ The population per bank branch is exceedingly high, even in comparison with other Central American countries. Additionally branches, are mainly concentrated in Managua.³⁰ Furthermore even when credit is “available” interest rates are generally high (20%-22% yearly³¹) and small producers cannot afford debt repayments given the low returns of their production and the impossibility of placing it in the market. Small farmers often cannot satisfy collateral requirements because, in the great majority, they rent the land that they cultivate. Even if they do own it, they are afraid to lose the ownership of their most valuable asset by using it as collateral. Small producers lack tools, fertilizers and technical assistance. All these factors drastically reduce their returns on agriculture, which have also been negatively affected by the shortening of the rainy season due to the *El Niño* phenomenon.

²⁷ Author’s calculation from the LSMS 1998

²⁸ Among urban extremely poor 85 % would like to work more, 75 % among urban non-poor.

²⁹ Only 0.2% of extreme poor have access to some sort of financial savings and only 2.5% of the poor. The figure for non-poor is 11.3%, which is also extremely low. See preliminary results from the World Bank Poverty Assessment of Nicaragua.

³⁰ According to preliminary findings of the Nicaragua Poverty Assessment (WB), there is a bank branch per 24000 individuals, almost double the average for other Central American countries.

³¹ Average rates offered by banks usually to meet short- and medium-term financing needs of the private sector. The annual inflation rate was around 10%-13% in the last five years. See *Banco Central de Nicaragua. Principales Variables Macroeconómicas*, www.bcn.gob.ni.

Credit is badly needed to move small producers away from traditional agriculture into new forms of production, like *horticultura* and *fruticultura*. Traditional agriculture based on basic grains and families' survival habits strongly contributes to environmental and soil degradation, which in turn reinforces the vicious cycle of poverty. Governmental technical assistance programs for small poor farmers should therefore embody credit components; technological transfers and access to credit should be seen as very complementary strategies. Extremely poor agricultural workers are in an even worse situation; they usually do not own land and therefore are simply excluded from credit and their employment and income depend exclusively on the stability that big landowners' jobs offer. Economic migration is often the survival strategy of extreme poor and poor families in all three regions of the country. Men migrate to Costa Rica to work in the sugar cane, coffee and banana plantations, mainly during the dry season in Nicaragua, sometimes bringing their family along with them. Costa Rica offers stable employment in any season given the high diversity of cultivation. Women often migrate to Managua or Costa Rica to work as housekeepers.

The scarce accumulation of human capital, i.e. nutrition, formal education and labor skills among poor rural households is one of the main constraints in the path out of poverty. Education and literacy increase returns of both on- and off-farm activities; If, as is likely, the rate of technological adoption is a strictly endogenous function of average labor force skills, fostering human capital accumulation is crucial to ensure sustainable long-term growth in the rural sector. The issue is how to reach this goal.³² There is increasing evidence³³ that private costs of human capital accumulation, particularly education, are increasing for everybody in Nicaragua, but proportionally more for poor families with a high number of dependants. This latter trend combined with the mediocre quality of services supplied, mainly in health and education, might dangerously reinforce poor families' survival strategy of high fertility and low investment in children's human capital, given the income constraint that these households face. The presence of children in primary school age and younger drastically increases households' probability of being poor. However at a later stage, offspring's early entrance in the labor market contributes to supplement family income. In the next section we discuss in more detail the fertility-poverty relationship and the recent demographic trends in Nicaragua.

³² The IPEA-UNDP study suggests that in comparison with other Latin American and Caribbean countries the factor which most accounts for the Nicaragua lower than average GDP per capita could be the "*quality of jobs*" (84%) rather than in the "*quality of the workforce*" (16%) as measured by average years of schooling of the workforce. A natural consequence of this result should be to invest in infrastructure and technology before investing in human capital when ranking priority interventions to build a path out of poverty. We think however that the methodology used by this study, while innovative, is indeed highly questionable. In particular the "*quality of jobs*" is a residual factor, which is very likely picking up the contribution of omitted variables, which are not actually related to the quality of the workplace.

³³ This evidence is drawn from a preliminary version of the Poverty Assessment of Nicaragua, World Bank. The incidence of private costs of education on per capita expenditures is shown to have almost doubled since 1993 and it is estimated to be around 3.5%-4% of per capita expenditures among extremely poor individuals.

2.1. High fertility among the poor

Although the average total fertility of Nicaraguan women decreased from 6.2 in 1980 to 4.8 in the mid-90s, the average total fertility rates (TFR) are still among the highest in the Central American region.³⁴ High population growth limited the impact of the average 4.5% real GDP growth of the last five years on poverty reduction. To fully understand the poverty-fertility association it is important to look also at the pattern of women's fertility across the family income distribution. Nicaragua is still in a very early stage of the demographic transition. This phase is historically characterized by a fall in women's total fertility, which follows an initial drop in infant and child mortality. Women in poor households reduce their total fertility later than women in non-poor families. During this transition period the birth rate is much higher among poor women, therefore more children are born into poor families. Given that the correlation between the fortunes of parents and children is strong, the short-term outcome could be an increase in the share of the poor over the total population.³⁵

The length of this delay is crucial in determining the effect of the demographic transition on the income and consumption per capita distributions. In Nicaragua, the fall in total fertility is mainly accounted for by changes in the fertility patterns of rich women. Women belonging to the top 20% of the household income distribution have a TFR of around two. The poorest 20% of women have a TFR above six, i.e. equal to the average TFR for Nicaragua at the beginning of the 80s. The concentration of new births in the poorest segment of the population constitutes a major problem for poverty reduction and is therefore an area where policy interventions are urgently needed. The longer the time delay in between the fall in poor versus rich females' TFR, the lower the chance of achieving substantial poverty reduction and the higher the risk of growing inequalities. Active policies can speed up the convergence of poor women's to non-poor women's TFR. These policies are justified on the basis of evidence that in general poor women's fertility outcomes are not those desired. As shown by recent findings³⁶ the approximate difference between the actual and the desired number of children in families belonging to the bottom quintile is around two. For the richest 20% of women the fertility outcome is that desired. Even if women's or parents' fertility choices were considered optimal according to the traditional "parents' tyranny" models of family welfare, they might not be so from the perspective of children's human capital accumulation.

It is well known that a high number of dependants has important implications for the division of tasks among family members within the household and child school attendance or their early entry in the labor market. As an example, older daughters are more likely to care for younger children in the family, which reduces their time allocation to education or

³⁴ See USAID Center for International Health Information (CIHI) statistics.

³⁵ For a review of the recent literature on the issue of demographic trends and poverty see N. Lustig, N. Birdsall and F. Regalia "Population and Poverty: An Overview of Research Results", IDB Work in Progress, April 2000.

³⁶ Preliminary results from the Nicaragua Poverty Assessment of the World Bank.

labor market activities.³⁷ The latter reinforces long-term poverty persistence, because women's lower education and earnings potential is in turn associated with higher fertility choices. Additionally, the low education of mothers has a strong negative impact on the school achievements of children, therefore perpetuating the poverty cycle. Particularly worrisome is the extent of adolescent fertility in Nicaragua; 18% of all births in Nicaragua are adolescent births:³⁸ one of the highest rates in the LAC region. Key areas of action are therefore: reproductive health and in particular adolescent reproductive health, basic family education and early-childhood care.³⁹ In the next section we analyze some of the other obstacles that Nicaraguan poor families face in the process of human capital accumulation.

3. Human Capital Accumulation

In this section we focus on the demand and supply factors that play a crucial role in the access of households to education and health services. We will concentrate on education, in spite of the fact that similar problems of supply, quality and quantity, and demand of health services, increasing private costs of health care, affect extremely poor households' investment in health.⁴⁰

The educational achievements of the Nicaraguan population are still among the lowest in Latin America and the Caribbean, even though educational indicators improved between 1993 and 1998. The average years of schooling for people older than ten grew from 4.5 to 4.9 at the national level and increased from 2.0 to 2.6 in rural areas. The school age population out of school in the 7-12 age bracket fell from 21.3% to 15.7%. School non-attendance dropped from 47.1% to 35.3% among extremely poor children in the rural areas. In the 13-18 age bracket, children out of school remained stable at around 44 percent. Among the rural poor the illiteracy rate decreased from 46% to 35%. Nevertheless, in 1998 a third of extremely poor children age 7-12 were still out of school. This same figure for non-poor children was 5.2% in urban and 7.2% in rural areas.⁴¹

³⁷ Labor force participation among rural poor women (15-65) in Nicaragua is around 26% against a national average of 41%. Author's calculation from LSMS 1998.

³⁸ Author's calculation from Appendix I of the *Estrategia de Reducción de la Pobreza. Primera Parte: Diagnósticos y Lineamientos*, República de Nicaragua, January 21st 2000.

³⁹ The IPEA-UNDP study *Resultados del Estudio Determinantes de la Pobreza en Nicaragua* presents some controversial evidence. The impact on the head-counts of assuming that all households have only two children is simulated. The authors claim that poverty would drop only by 5 percentage points. It should be stressed that these are the results of a very partial equilibrium analysis. It is therefore hard to draw any definitive conclusion on the effects of a reduction in TFR on poverty. The reduction in TFR affects and is affected by women's labor force participation, education, investment in children's human capital, etc. There are too many factors which would influence households' potential income and which are ignored in a simplistic partial equilibrium analysis.

⁴⁰ For extremely poor households, health-related expenditures as a percentage of total per capita expenditures increased from 3.2% to 5.2%. See Appendix I of the *Estrategia de Reducción de la Pobreza. Primera Parte: Diagnósticos y Lineamientos*, República de Nicaragua, January 21st 2000.

⁴¹ Author's calculation from 1993 and 1998 LSMS. The information from the two surveys is not strictly comparable. In fact while the 1993 survey reports a question on school attendance, the 1998 survey reports a question on school enrollment. Here for sake of comparison we equate enrollment and attendance.

Additionally, almost two-thirds of extremely poor adolescents age 13-18 were out of school, versus 21.1% among urban non-poor and 51.9% among rural non-poor.

Both demand and supply side factors might provide a source of explanation for these achievements and define priorities for the future. Poor quality of teaching and large class sizes, inadequate salaries for teachers, lack of teaching materials and poor infrastructure, particularly in the Pacific and Atlantic rural regions, are the main obstacles to accumulation of education on the supply side, though the situation varies by region. In many municipalities of the Central region the coverage of primary schools (up to the fourth grade) has been improving, thanks also to the work done by the *Fondo de Inversión Social de Emergencia (FISE)*.⁴² This effort is undoubtedly related to the sizeable decrease in the percentage of young children not attending school⁴³ observed since 1993. Despite the fact that poor people in the Central region do not perceive the supply of infrastructure as a main priority, its maintenance, functioning and accessibility in terms of costs are matters of concern.⁴⁴ The supply of infrastructure is still inadequate in the Pacific rural region and in particular in the Atlantic rural region, where schools are few and malfunctioning.⁴⁵ Supply side factors are certainly behind the extremely mediocre statistics of school attendance for children age 13-18 all over the country but particularly in rural areas where more than half of the non-poor do not attend school.

On the demand side there is preliminary evidence⁴⁶ that increasing private costs of education (fees, uniform transportation costs, etc.) might have strongly restrained the observed positive trend in the reduction of the number of children who are out of school or who do not attend classes regularly. The education sector reforms initiated in 1993 promoted a decentralized autonomous school regime and introduced parents' payment of voluntary school fees. Recent evidence suggests that more than half of the households with children of school age declared that those fees are actually non-voluntary.⁴⁷ Moreover in 1998 almost 60% of extremely poor families with age 7-12 children not attending school declared that that was due to either lack of resources or to the fact that children needed to work.⁴⁸ This percentage increased from 26% in 1993.

⁴² For a rather complete picture of the impact of *FISE* operations see "*Nicaragua Ex-post Evaluation of the Emergency Social Investment Fund (FISE)*" Human Development Department, Latin America and the Caribbean, The World Bank, May 2000.

⁴³ Preliminary calculations done by the World Bank show that the non attendance rate for children 7-12 fell from 41.8 % in 1993 to 24.5 % in 1998 in the Central rural region. Non attendance in the urban Central increased by 1.8 percentage points, from 10.3 % in 1993.

⁴⁴ "*Estudio Cualitativo de la Pobreza en Nicaragua*" Informe de la region Central, IEN/INEC February 2000.

⁴⁵ Preliminary calculations made by the World Bank show that the non attendance rate for children 7-12 fell only from 41.9% in 1993 to 40.0% in 1998 in the Atlantic rural region.

⁴⁶ Figures presented by the World Bank show that the share of per capita households' expenditure devoted to education increased from below 2 to just below 3.5% among extremely poor households.

⁴⁷ Fees represent approximately 15%-20% of private costs of education.

⁴⁸ In the bottom quintile of the income distribution 56.3% of families claimed lack of resources, 4.1% claimed that the children needed to work. Data source LSMS 1998. See A. Legovini and N. Lustig "*Low Investment Rate and the Cycle of Poverty*". Mimeo. May 2000.

On one hand, the fact that school attendance of children belonging to poor families has increased during the last decade despite an upsurge in the private costs of education shows that parents are interested in investing in children's human capital. On the other hand, the majority of children leave the school system by age 13 and enters the labor market. What are the forces behind children entering the labor market so early? A distinction between the 6-12 and 13-18 age brackets should be drawn. The figures on the labor force participation of younger children are probably underestimating their actual supply of work, within and outside the household.⁴⁹ Participation in the labor market force is particularly high among extremely poor male children in rural areas. It has been claimed that children are probably working only part of the year and one explanation for this could be related to a possible shortage of handworkers during the harvest season. However the fact that real wages in agriculture are actually falling and migration flows are high does not fit well with the shortage of labor supply argument. Additionally, working children age 7-12 belonging to extremely poor households on average work 36.4 hours per week in the urban areas and 37.3 in the rural areas,⁵⁰ which is a high labor burden. The reason beyond child labor probably has to be found in the resource constraints that poor families face. This might be challenged by the observation that there is a sizeable share of non-poor children age 7-12 working in both urban and rural areas. However in the top three deciles of the distribution of consumption per capita, very few children age 7-12 are actually working. Therefore children's labor force participation is higher among those families whose consumption per capita is just above the poverty line among non-poor households. Additionally, limiting the sample to poor children age 7-15 who do some remunerated work, we found a negative correlation of -0.28 between hours worked and wage per hour.⁵¹ This might be a sign that children's labor supply elasticity to wages is negative and that they would work less if they could afford it. More empirical investigation is needed on this issue. Children's contribution to the total family's income seems relatively small.⁵² However 60% of the working children in urban areas and more than 90% in rural areas do not receive a salary, therefore is difficult to estimate the contribution of their labor to family income.

Moreover the strong positive relationship between extreme poverty and young adults' participation⁵³ in the labor market in both rural and urban areas and children's participation in rural areas suggests that poverty is strongly correlated with early participation in the labor market.⁵⁴ Supply factors also play an important role. Lack of

⁴⁹ The labor participation rate of children age 7-12 is 5.4% among extremely poor in urban areas and 3.8% among non-poor. The same figures are 11.8% and 6.3 % in rural areas. Among extremely poor male children age 7-12 the labor force participation reaches a dramatic 19.8%.

⁵⁰ Author's calculation.

⁵¹ Author's calculation.

⁵² What is the impact of child labor on poverty statistics? In a very simple exercise we look at how poverty headcount changes if children's labor income were eliminated. Using the distribution of income per capita for 1998, eliminating 6-13 year old child labor would increase the headcount from 55.9% to 56.1%. Excluding labor earnings of children age 6-18 would increase the headcount from 55.9% to 58.4%. These results are just illustrative given the simplicity of the partial equilibrium assumptions.

⁵³ Among extremely poor young adults age 13-18, labor force participation is 36.5% in urban areas and 53.3% in rural areas. The same figures for non-poor urban is 22.3% and for non-poor rural is 38.6%.

⁵⁴ The latter is the net effect of supply and demand factors. It is evident that in many areas where schools only go up to the fourth grade, demand side factors are simply irrelevant.

schools above grade 4th-6th in rural areas might explain a big part of adolescents' early entry into the labor market at all income levels.

Low school attendance is a sign that not only the private costs of education are high but also that the perceived/actual returns of education are low relative to the returns from household or labor market activities, particularly in the rural sector. School supply and school quality improvements both at the primary and secondary level should therefore accompany demand interventions, particularly in the rural areas. In the last decade, some gains have been achieved but the large human development gaps between poor and non-poor are not closing significantly.

4. Social protection: the case for social safety nets

The multi-dimensional picture of poverty described in the previous sections gives an idea of the high degree of vulnerability and the wide arrange of risks that poor individuals are exposed to. Some of these risks are purely idiosyncratic, like sickness, injury, job losses, maternal mortality, some less idiosyncratic and more regional or sector covariant like real wage fluctuations, ethnic discrimination or deforestation and others more markedly macro covariant like natural disaster, climate changes, terms of trade shocks, etc. . The type and amount of assets (physical, human, and social) "owned" by individuals influence their degree of exposure to different types of risk. In general, asset-poor people have limited access to risk diversification mechanisms. As a result they engage in low risk/low return activities and elaborate informal mechanisms of "self-protection" and risk reduction, which are relatively expensive and inefficient. For example, in Nicaragua poor small farmers reduce the downward risk of income losses by growing less risky basic crops mainly for self-consumption. In this way they limit their engagement in off-farm activities, which could instead provide a better channel of risk diversification. Agricultural workers' main prevention strategy seems to be migration. Some degree of risk mitigation is also achieved by diversifying the number of income sources within the family, for example through children's early entry in the labor market, or by informal community arrangements.

In the long term this strategy of risk prevention and mitigation oriented towards low return activities, which could be optimal given the constraints faced, tends to erode poor people's few productive assets and might endanger their already limited ability to generate future income. What is known as persistent poverty or the "vicious cycle of poverty" is indeed the outcome of a combination of two factors: risk exposure and the very limited capacity to manage risk. This in turn leads to families' inefficient prevention, mitigation and coping strategies.

The main goal of social protection is to support the poor in managing risks. Traditionally social protection policies have focused on risk-coping strategies. However social protection should be understood not only as a tool for short-term poverty alleviation but also for long-term poverty reduction objectives, which deal with risk reduction and mitigation. By providing poor households with access to mechanisms which reduce their

overall risk exposure (risk prevention and mitigation) the goal is to engage them in activities that will deliver future greater returns.

The question is how to reach this goal and how to lay the ground for a social protection strategy in Nicaragua, given the widespread deep poverty and the country's fiscal situation. The priority goal of the Government of the Republic of Nicaragua is to reduce extreme poverty.⁵⁵ Extreme poverty is concentrated among non-tenant rural workers. Even if actual trends of sustained growth in the agricultural sector and employment creation are confirmed, the observed reduction in real wages is casting a shadow on agricultural workers' ability to generate additional income which would allow them to reach consumption levels above the extreme poverty line. Some evidence seems to confirm that the gains from growth are not being equally shared.⁵⁶

In Nicaragua there is no real social protection system in place. There is a plethora of programs, financed by different sources: Government, *FISE*, NGOs, and international donors. Programs often overlap, are poorly coordinated, lack adequate supervision and are poorly targeted. As result they do not fully realize their potential impact. There is a great need to rationalize the current situation. This is the most urgent task that the Government of the Republic of Nicaragua has to face. Unfortunately for most of these programs evaluation systems are not in place. This is the main reason why the tendency is toward adding new programs rather than eliminating older ones, given that their efficacy can hardly be assessed.

Just a few numbers are necessary to provide an overview of the social protection system in Nicaragua. Only 7.8% of Nicaraguans were covered by some sort of health insurance in 1998. Of those covered only 3% were in the bottom quintile of the consumption distribution while 46% were in the top quintile. Despite widespread malnutrition problems, in 1998 only 20.7% of children age 7-15 enrolled in school received food supplements. Only 28.7% of these children were in the bottom quintile of the distribution of consumption per capita, 22.9% were in the second poorest quintile while 28.5% were in the top two quintiles (see Appendix B).⁵⁷

The main conclusions of a recent assessment prepared by the World Bank on Food and Nutrition Programs in Nicaragua are revealing: the 41 food programs presently in place seem to be badly targeted and largely ineffective.⁵⁸ If one looks at the allocation of food aid received by households in the different quintiles of the 1998 consumption distribution⁵⁹ during the 1993-1998 period two features emerge: the relative low coverage of these programs, particularly in relation to their cost, and the relatively bad targeting. Only

⁵⁵ República de Nicaragua, op. cit.

⁵⁶ The UNDP-IPEA study (2000) finds that while poverty did not change in Nicaragua during the past seven years, income distribution became more concentrated. This possibly suggests that the gains from recovering GDP per capita growth accrued in the hands of the top quintile of the Nicaragua income distribution.

⁵⁷ Author's calculation from 1998 LSMS.

⁵⁸ Almost 100 million dollars are spent every year in these 41 food programs.

⁵⁹ Author's calculation from 1998 LSMS.

3.05% of households received food aid since 1993; 37% of the beneficiary households belonged to the bottom quintile, and 20% to the second quintile of the consumption distribution in 1998, while 28% were among the top two quintiles.⁶⁰ Since the monetary amount of food aid received in 1998 cannot be determined at the family level, families are ranked according to their consumption levels gross of food aid. Therefore it might be the case that some of the beneficiaries of food aid belong to the top two quintiles of the consumption distribution thanks to the food aid they received. If this effect were important then our targeting assessment would be incorrect. We double-check this by ranking families according to a measure of income, which includes self-consumption but excludes the consumption of food received in aid. The results do not change. 38% of beneficiary households were among the poorest 20%, 19% were in the second quintile and 27% were among the richest 40% of the households.⁶¹

Almost 62% of Nicaraguans benefited from programs aimed at improving access to safe water and sanitation, to schools or health centers, to health care training, food programs etc., during 1993-1998. These programs reduce or mitigate the risk of welfare losses faced by individuals, now and in the future, and therefore broadly speaking could be considered social protection measures. A synthetic measure of who benefited the most from these programs can be given by the ratio between the share of beneficiaries in the bottom two quintiles and the share in the top quintile of the distribution of consumption per capita in 1998.⁶² This ratio is 1.80 for construction and improvement of schools; 1.19, for construction and improvement of health centers; 1.52 for access to safe water; 2.55 for sanitation programs; 2.40 for food programs, and 1.07 for health care campaigns. It can be concluded that since some of these interventions were specifically targeted to improve the living standards of the poor, the outcome of the targeting is in some cases unsatisfactory.⁶³ Since there is little room for increasing expenditure levels, efforts should concentrate on improving the efficacy of the interventions by mapping existing programs and cutting those that are not cost effective.

Given the objective of alleviating and reducing extreme poverty, interventions should aim to improve the income and therefore the consumption of the current generations of

⁶⁰ Author's calculation from 1998 LSMS. Given the average households' size per quintile and the total yearly disbursement of these programs, an estimated 175,000 individuals were covered since 1993. This is a very rough estimate computed assuming that the population and the demographic structure per quintile of the consumption distribution did not change from 1993 to 1995. If we also assume that households received food aid each year, this would amount to a cost of roughly to 570 US \$ per person, given that the total disbursement in food program was roughly 100 million dollars per year.

⁶¹ Our targeting assessment is meaningless if there were a lot of families' upward mobility among quintiles. Let's say that a poor family which received food aid in 1994 because it was in the bottom quintile, moved in 1998 to the top two quintiles. There is however no way to control for this occurrence, whose likelihood is probably small.

⁶² If this ratio is 2 it says that if you belong to the poorest 40% you are twice as likely to benefit from the program than if you were among the richest 20% of the population.

⁶³ See Appendix B for statistics on specific agencies' interventions (*GON, FISE, ONG*, etc). For a detailed evaluation of FISE programs in education, health, water, sewerage and latrine projects see "*Nicaragua Ex-post Evaluation of the Emergency Social Investment Fund (FISE)*" Human Development Department, Latin America and the Caribbean, The World Bank, May 2000.

parents and the future income potential of their children. First let's consider the goal of extreme poverty alleviation. Most of the extremely poor's only asset is their handwork, which makes them totally dependent on their labor earnings. These earnings are strongly exposed to fluctuations in wages and the demand for labor. Underemployment is fairly widespread among extremely poor people. Increasing training could improve the labor productivity of these workers, particularly if training in rural areas is associated with off-farm activities. These workers very limited basic education might, however, reduce the impact of training activities on their productivity.⁶⁴ Given the limited amount of resources and the stated goals of extreme poverty alleviation and reduction a strategy that combines social assistance plus training for the current generation with investment in the human capital of future generations seems reasonable. This new social assistance concept is based on two pillars. While it aims to increase current levels of consumption of the extremely poor, enabling them to manage risk better, it is also designed to increase the chance for new generations to grow out of poverty. This strategy therefore goes beyond the traditional three options used to provide social assistance related to risk-coping public policies: *i.* need-based cash transfers, *ii.* in-kind transfers or fee waivers, and *iii.* publicly provided jobs.

Are existing agencies in Nicaragua providing any of these three forms of traditional social assistance? Very little is known about the *FISE*'s role as a temporary public employment provider.⁶⁵ According to the information found in the LSMS less than 0.20% of the population benefited from employment programs promoted by the *FISE* during the 1993-1998 period. The assessment of past experience in Nicaragua with in-kind transfers, and in particular with food programs was indeed quite disappointing, as discussed above. Needs-based cash transfer programs might be effective in the short term for poverty alleviation purposes but they are not designed to pursue long term poverty reduction goals.

A pilot project of a social safety net (*Red*) in the rural Central region recently started by the Government of the Republic of Nicaragua might therefore become an important tool to attempt to reconcile short and long-term objectives. The *Red* in fact combines some of the elements of needs-based cash transfers, particularly the targeting, monitoring and transfer procedures oriented towards the objective of short-term poverty alleviation, with a long term poverty reduction strategy. The latter is based on the idea of fostering the investment of extremely poor households in children and family human capital through three components: education, nutrition and health, which includes early childhood and reproductive care.⁶⁶

The program belongs to the category of targeted human development programs (THDPs) and shares common features with the Mexican *Progresá*, the Honduran *PRAF* and the

⁶⁴ The positive effects of training programs tend to increase with beneficiaries' level of education. For a review of existing evidence see chapter 3 of *Social Protection for Equity and Growth*, IADB, SDS/POV, distributed by Johns Hopkins University Press, 2000.

⁶⁵ Data from the Central Bank of Nicaragua show that the *FISE* created directly and indirectly a total of 12,000 to 14,000 temporary jobs yearly in the last four years.

⁶⁶ For a detailed description of the program see IADB Project Document NI-0075.

Brazilian *Bolsa Escola*.⁶⁷ To gain access to this type of program, families with school age children (primary and sometimes secondary) commit to sending their children to school and to attending early childhood care and nutritional courses in exchange for income and consumption support. This type of arrangement therefore reduces the risk of beneficiaries' passive entitlement. THDPs seek households' active participation and permanent behavioral changes. The amount of the transfers depends on the combination of program objectives. Transfers can be designed to compensate for the opportunity cost of sending children to school or for the private cost of health care. They could also be determined to fulfill the broader goal of reducing the number of extremely poor in the short run, while at the same time building families' human capital. Food security training, good feeding practices and pre-natal and early childhood care training might be program components, depending on the nature of the objectives. All of these are very important risk reduction management measures.

There are a few important questions that need to be addressed: could this be a suitable social protection strategy in the Nicaragua context? Should demand side interventions be complemented with supply side interventions? Should such a strategy be applied to a country with widespread poverty and extreme poverty? Should a safety net program of this type distinguish between poor and extremely poor households and if so is there an effective way of drawing a distinction? Does the country have the institutional and administrative capacity to design, implement and maintain appropriate means testing, monitoring and evaluation procedures? Is this program fiscally sustainable given Nicaragua's fiscal constraints? In the next section we try to analyze this set of important issues in relation to the Nicaragua context.

4.1. The Social Safety Net

Consumption and income-based measures of poverty provide only a synthetic picture of poverty. Policy interventions, however, should account for the multidimensionality of the causes of poverty. Among these causes a key role is played by the lack of what is traditionally called human capital, i.e. a black box where labor productivity and cognitive skills, education, health and nutrition status are all interacting in ways which are difficult to disentangle and quantify empirically. A great deal still needs to be learned about the interaction between the health status of children and their cognitive skills, for example. Targeted human development programs like the Nicaraguan Social Safety Net attempt to address the multidimensionality of the poverty problem by including education, nutrition and health care components, in particular pre-natal and early childhood care in a comprehensive framework. Demand constraints are the main rationale for this type of program. From the quantitative and factual evidence outlined in the previous sections,⁶⁸ it

⁶⁷ For a review of these types of programs, see chapter 5 of *Social Protection for Equity and Growth*, IADB, SDS/POV, distributed by Johns Hopkins University Press, 2000.

⁶⁸ Many factors can contribute to constrain demand, among them: the increasing incidence of costs of education on monetary and non-monetary income of poor families and the real wage downward trend.

seems very plausible to conclude that demand constraints are playing an important role in parents' weak investment in children's human capital in Nicaragua. This fact, coupled with the consideration that a good deal of targeted social assistance is probably needed to raise extremely poor people's standards of living in the short term, makes the case for a social protection strategy for Nicaragua based on the *Red*. This is particularly the case if the long-term strategy of the Government is to build an institutional framework for social policy interventions, which could replace inefficient and badly targeted programs.

However it is also indisputable that deficiencies in the supply of services and in their quality, particularly in health and education infrastructure in rural areas,⁶⁹ also play a major role in the low rate of investment in human capital. Targeted human development programs in Nicaragua should be accompanied by a strong improvement in the supply of services. Indeed the pilot phase of the *Red* in Nicaragua includes a health care supply component that should cover extra costs faced by basic health care providers (NGOs, etc) which supply services to beneficiary families. The education supply component is instead rather weak and it is limited to the payment of beneficiaries' school fees. It is understandable to test the program in areas where supply constraints are reduced,⁷⁰ at least during an initial phase. On the other hand a real long-term commitment by the Government of the Republic of Nicaragua to extreme poverty reduction will directly imply an expansion of the *Red* to marginalized areas, where a lot needs to be done on the supply side. Given the need to intervene on supply and demand sides and the budgetary restrictions faced by the Government, the result will need to be a slow increase in the coverage of the *Red*.

Short-term poverty alleviation through in-kind or monetary transfers is a fairly easy task when a good targeting mechanism is in place. The hard task of the *Red* and also the real value added is to try to induce sustainable behavioral changes in a relatively short amount of time.⁷¹ These changes should lead to better nutritional habits and to higher investment in children's human capital even once beneficiaries leave the program. A medium term evaluation obtained by following beneficiaries after they leave the program would be the right tool to assess success along this dimension.⁷²

Another important issue that needs to be addressed is whether this type of program should even be considered for implementation in countries like Nicaragua, characterized by widespread poverty. Critiques of programs like the *Red* argue that when poverty is widespread there are no clear criteria to select the program beneficiaries. The argument seems to suggest that poverty reduction and alleviation policies can be successfully implemented only if the extent of poverty is limited. It is clear that by the same argument

Also the fact that the economy is largely non-monetary makes it difficult for families to pay monetary fees. Factual evidence on the existence of demand constraints emerges in the individual interviews in qualitative studies of poverty at the regional level. Castellón, M. A. "*Estudio Cualitativo de la Pobreza*" Informe de la region Atlántica de Nicaragua, mimeo, World Bank February 2000

⁶⁹ At best primary education offered in rural areas reaches the fourth grade.

⁷⁰ This strategy was adopted also in the initial phase of the Mexican *Progresas*.

⁷¹ Families can stay in the program for no more than three years

⁷² No similar program has been yet evaluated with respect to this medium, long-term objective.

any intervention (road or school construction, water and sanitation programs, etc.) which fails to reach all the poor or all the extremely poor in a country with widespread poverty should be as well questioned. A legitimate concern is rather: given a certain amount of resources available and too many poor, with whom do we begin? If the objective is extreme poverty reduction, then the beneficiaries of the intervention should be picked among those at the bottom of the ladder. Having good targeting mechanisms, i.e. technically robust and cost-effective, is therefore a key priority. When household surveys and census data are available, statistical and econometric techniques⁷³ allow the design of effective targeting procedures that can identify the targeted population with a reduced margin of error, for example separating extremely poor from non-extremely poor households with some reliability.⁷⁴ Despite imperfections and implementation trade-offs, targeting methods are extremely important because they set the rules of the game and reduce the risk of instrumental or political use of targeted programs.⁷⁵

Other targeted programs could rely on the methodology used to identify beneficiaries piloted by the *Red*. This will represent a remarkable long-term gain and a sizeable step forward in the country's poverty reduction strategy. For this reason targeting and monitoring are by far more vital issues than the rather sterile discussion on the nature of transfers. It is not whether transfers are cash or in-kind per se that makes this type of program more or less vulnerable to political distortions, but rather the presence or absence of clear targeting criteria. Targeting, monitoring and evaluation procedures should definitely be subject to external auditing.

The country is in the process of strengthening its institutional and administrative capacity to design, implement and maintain appropriate targeting, monitoring and evaluation procedures. In the case of the *Red* a small technical unit has been created within the *FISE* which is also receiving the support of external consultants and which is working in strict collaboration with the National Institute for Statistics and Census (INEC). In the future this unit could be reinforced with technical specialists (economists, statisticians, and/or evaluation specialists) who could provide leadership in program evaluation in Nicaragua. The capacity building process within the country should continue to be strongly supported by development agencies.

⁷³ However also an increase in parents' investment in children's human capital, better health, nutrition or education, which lasts only for a couple of years, can produce long-term irreversible benefits if we think that human capital once accumulated cannot totally depreciate.

⁷⁴ There are many targeting techniques that can be used. Most of the time a mixture of geographical and individual targeting is used. For example, if the number of extremely poor is too large given the size of the intervention, one possibility is to pick those who live in the poorest localities first. When the pool of potential beneficiaries defined according to means testing criteria is larger than the possible coverage of the intervention, a random choice of the beneficiary should be strictly enforced to ensure transparency.

⁷⁵ The most accurate targeting mechanisms rely on information collected through surveys. This implies that the targeting mechanisms and the selection procedure cannot be totally disclosed to the public. The risk is that people might learn what to answer to be selected into the program. Therefore targeting procedures should be constantly updated.

Finally, let's address in a very simple way the issue of the fiscal sustainability of this type of program in the Nicaragua context. We do not want to address the issue of the long-term returns from investment in human capital associated with social protection schemes like THDPs. There is in fact enough evidence supporting the idea that the long-term and intergenerational returns from investing in human capital are large.⁷⁶ We want to analyze what the short term financing needs associated with a couple of transfer schemes are. This exercise is highly simplified but can give a rough idea of the order of magnitude of the intervention and of the trade-offs associated with different objectives. I base my simple calculations on the 1998 LSMS information on the distribution of consumption per capita in Nicaragua.

Suppose that the demand side intervention aims at closing the extreme poverty gap, i.e. to raise consumption of extremely poor individuals in the lowest deciles of the consumption per capita distribution up to the extreme poverty line,⁷⁷ assuming perfect targeting and a population of 4.8 million people in 1998. Forty seven million dollars would be needed to close the extreme poverty gap.⁷⁸ This corresponds to 2.2% of GDP at 1998 market prices.⁷⁹ If we believe that official GDP per capita measures are underestimating the actual figures, we could take consumption per capita as a proxy for disposable income per capita⁸⁰ using the LSMS.⁸¹ In this case the transfer component of such a simple poverty targeted scheme could be financed by a fix lump sum tax of 1.59% on everybody or by a 2.9% income tax imposed on the richest quintile of the consumption distribution.⁸² This is however just an estimate of the amount needed to finance the transfer. Administrative costs need to be added, which are in general much lower than in other social assistance programs like publicly provided employment programs. Administrative costs plus resources devoted to targeting, monitoring and evaluation procedures at the national level should be contained between 15% and 20% of the total transfer disbursement. This is however just one side of the coin. In targeted human development programs the final goal

⁷⁶ See *Republic of Nicaragua Poverty Assessment 1995*, Volume 1, LAC Regional Office study, World Bank 1995. A household's probability of being poor in 1993 was 60% if the head of the household had no formal education. It was 35% if the head of the household had completed primary education (6 years). It was 25% if the head completed the basic cycle of nine years.

⁷⁷ I use the World Bank endogenous poverty line and the distribution of consumption per capita computed from the LSMS 1998. The extreme poverty line for 1998 has been fixed to annual US\$ 211 using the official nominal exchange rate of 10.62 Cordobas for a dollar, July 1998. Average consumption per capita of people in the bottom and in the second decile of the consumption distribution was annual US\$ 116 and 208.

⁷⁸ 50.1 million dollars. Author's calculation.

⁷⁹ Based on GDP figures from *Nicaragua: Recent Economic Developments and Statistical Annex*. IMF Staff Country Report No.99/124. October 1999.

⁸⁰ See Appendix A for a discussion of this assumption. Consumption per capita is probably a much better proxy of disposable income for poor than rich people.

⁸¹ The average consumption per capita was around annual US\$ 650 in 1998 in Nicaragua, according to the LSMS survey and author's calculation

⁸² Consumption per capita is probably overestimating income for poor households and greatly underestimating income for rich households. If the latter effect is bigger than the former then the tax rate could be even lower than 1,59% and 2,9%. While IMF statistics place GDP per capita in 1998 to US\$ 442, average consumption using the 1998 LSMS amounts to US\$ 650.94 per capita.

is families' human capital accumulation. Families are entitled to benefits only if they comply with a set of requirements which could include actively participating in nutritional training, regularly attending pre-natal and early childhood care facilities or reproductive health courses, etc. Other forms of beneficiary active participation could be envisaged. Productive components could be aggregated to the basic scheme, for example in the form of training for on and off-farm activities. As we already stressed, supply constraints are probably equally important in the most marginalized areas of Nicaragua, both in terms of quality and quantity of services and assessing the financing requirements of supply interventions is much harder. The simple provisions of pre-natal and postnatal care and nutrition training in remote localities could amount to another 0.3% of GDP.

Let's consider another scheme where families with school age children receive a transfer conditional on children's school attendance. In this case the objective of fostering intergenerational human capital accumulation would prevail over short-term poverty alleviation goals. Let's again assume perfect targeting relying on a consumption-based poverty measure and suppose that only extremely poor families are targeted. If we do not want to create perverse fertility incentives transfers per child should cover only the opportunity cost of children's school attendance. Just to simplify matters, we assume that this opportunity cost is the sum of children's forgone actual or potential earnings in the market or in household production plus the direct costs of attending school. The average labor earnings for children age 7 to 12 who are working in the market was about 45 US\$ yearly in 1998.⁸³ The direct cost of education is assumed to be 3.5 % of the average consumption per capita of extremely poor households,⁸⁴ i.e. around 10 dollars per year. Therefore the total amount of the transfers delivered to extremely poor families to keep their children in school is fixed at 55 US\$. Extremely poor children age 7-12 were 20% of the total poor population.⁸⁵ This contrasts with only 13.8% among the richest three deciles. This means that the financing requirement would have been 10.5 million dollars in 1998, a limited 0.5% of GDP according to official figures, or just a 0.3% of total private consumption measured using the LSMS.⁸⁶ If all poor children between 7 and 12 in 1998 had been covered by this scheme, that would have required a financing of 45.66 million dollars, roughly 2.17% of GDP⁸⁷ according to official measures.

If the short-term poverty alleviation component and the fellowship component were combined and the extremely poor population had been the target, the cost of transfers would have amounted to 2.7 % of GDP according to official measures in 1998. Administrative, monitoring and evaluation costs could amount to another 15% of total disbursement.

Since in Nicaragua public expenditures already amount to 34% of GDP, the financing needs of such a social protection scheme seem fiscally unsustainable. It is clear that the

⁸³ Author's calculation from LSMS 1998

⁸⁴ Preliminary data from the World Bank Poverty Assessment of Nicaragua.

⁸⁵ Author's calculation from LSMS 1998.

⁸⁶ One third higher if we adjusted consumption to GDP official figures.

country's wealth is very limited. It is also clear that a social protection system will imply a strong redistribution component, the tax structure might be neutral but expenditures should be strongly regressive. The debt service reduction (debt service in 1998 was 8.5% of GDP) and the debt relief initiative could free a very important amount of resources. However starting the design of a new social protection system by more social spending is not necessarily the best way to go. A cost-effectiveness analysis of the current portfolio of social expenditures is needed, including those programs that are financed by external sources. The assessment of food aid programs, which amount to 2.1% of GDP yearly, represent a warning. Poverty targeted expenditures and programs that are largely ineffective should be eliminated and resources should be redirected preferably to social protection programs that embody more transparent monitoring and evaluation mechanisms. The *Red* could be a good candidate; for this reason the results of the evaluation of the targeting and of the impact of the *Red* should be strictly monitored. This will greatly increase the accountability of these programs and facilitate the assessment of their coverage and performance. If the pilot experiment of the *Red* proves successful, financing its expansion could be achieved by diverting internal resources from those programs where efficacy is highly questionable.

5. Conclusion and recommendations

Poverty and extreme poverty are still widespread in Nicaragua, particularly in rural areas. Lack of asset ownership or very limited asset ownership expose poor people to a high risk of welfare loss, caused by wage fluctuations, job loss, natural disasters and/or international price fluctuations. Poor people's response is therefore often the adoption of low return, low risk activities and inefficient ways of reducing or mitigating risks through high fertility and/or child labor, which reduce the country's economic growth potential over the long term.

The role of the social protection system should be to help poor people manage risk better. In Nicaragua there is no real social protection system in place. There are a myriad of programs with limited population coverage, that often overlap, and that are characterized by poor targeting and limited efficacy. The Government of the Republic of Nicaragua is presently taking the first step in the direction of building a social protection system targeting the extremely poor through the *Red*. We do think that such a scheme has the potential to both successfully serve poverty alleviation purposes, through a social assistance transfer component, and also greatly contribute to medium-term poverty reduction objectives, through families' accumulation of human capital. Entitlement to benefits is in fact linked to families' active investment in human capital, the returns on which can be considerable.

The *Red* should not be simply considered another program, but should be seen as an important flexible scheme for targeted interventions. It can be expanded not only to include education, nutrition and health components but also to include adults' job-training or other productive components. The evaluation of the targeting and impact of the pilot of

the *Red* will tell the way to proceed. If the *Red* is successful, other targeted interventions could be coordinated under the same umbrella.

The costs of expanding the Red to reach the most marginalized areas of Nicaragua will be high, because both supply (quality and quantity of services) and demand side interventions will be needed. Does this necessarily mean an expansion of social public expenditures? An accurate analysis of the cost-effectiveness of the different social protection programs currently in place, including those that are financed by external sources is needed. An assessment of these programs should lead to the elimination of those that are ineffective and enable resources to be re-directed. A stronger coordination between national and international stakeholders will be required.

The monitoring and impact evaluation procedures designed for the *Red* already constitute a good step towards increasing the efficacy and accountability of interventions. Targeting, monitoring, and evaluation should be applied to innovative social protection programs and become the *modus operandi* of the social protection system.

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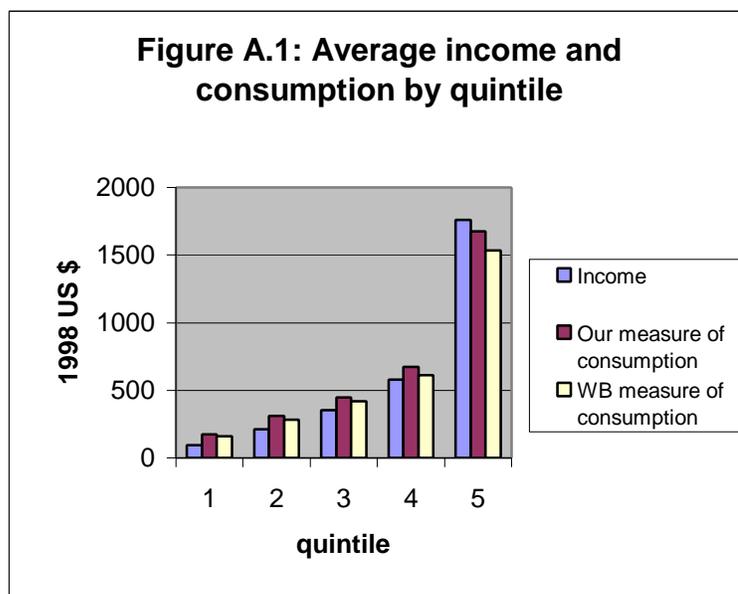
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A. Appendix

This appendix explains why there are differences in the calculation of head counts ratio when individual consumption or income measures are used. We select from the 1998 LSMS the sub-sample of individuals for whom we have observations of individual consumption and income and for whom the World Bank series of individual consumption is also available. Both income and consumption measures include self-consumption and food donations.

Figure A.1 shows that there are small differences in the average individual consumption by quintiles obtained using our series and the series constructed by the World Bank. The difference between average consumption by quintile and average income by quintile is instead remarkable. Consumption is lower than income for the all the quintiles but the top. This difference is proportionally bigger for the lowest quintiles. Since both income and consumption measures include self-consumption and food donations this gap between average income and average consumption is problematic, particularly if we want to use the income distribution for poverty estimates. Income underreporting is probably high at both tails of the distribution, but for poverty estimates we are interested primarily in the left tail

of the distribution. For this reason in the paper we compute poverty estimates using the individual consumption distribution.



Source: INEC/LSMS 1998

B. Appendix

The following table shows the distribution of households' access to a wide set of programs during the 1993-1998 period by consumption quintiles in 1998. Households are classified as beneficiaries if they benefited from the program for at least a year. The source is INEC1998 LSMS survey. The first column ("*Total*") shows the percentage of households that benefited or did not benefit from a certain program over the total number of households. The following five columns (*I, II, ..., V*) show how the total number of beneficiary and non-beneficiary households is distributed across quintiles of the household consumption distribution.

For example: 25.74% of total households benefited from the construction or improvement of schools. Of these beneficiary households, 18.66% were in the first quintile, 20.84% were in the second quintile, 21.99% were in the third quintile, 20.29% were in the fourth quintile and 18.21% were in the top quintile, showing just a mild pro-moderately-poor pattern. As we said in the main text, this simple analysis of programs' incidence across quintiles has some limitations. These limitations are important if households' mobility across quintiles is high, i.e. if a households' probability of moving from one quintile to another in between the period in which it benefited from the program and the period of the

interview is high. While the current data are not suited to provide an answer to this question, it seems very unlikely that in Nicaragua households would easily move from the bottom two quintiles to the top two or the other way round.

Nicaragua 1998

Distribution of households by program access

		Total	I	II	III	IV	V
Construction/Improvement of schools	Recipients	25.74	18.66	20.84	21.99	20.29	18.21
	FISE	11.40	18.43	23.06	19.65	19.82	19.04
	Gov./NoFISE	3.50	19.59	17.50	21.83	21.16	19.92
	NGO/International Organizations	4.65	20.27	18.12	25.47	19.68	16.46
	Private Sector	0.03	49.67	50.33	0.00	0.00	0.00
	Religious Congregation						
	Church	0.25	7.17	11.98	26.68	20.01	34.12
	Community	0.27	8.32	8.53	43.09	13.98	26.04
	Others	1.79	20.09	20.23	23.60	21.84	14.24
	Don' t know	0.13	52.13	18.42	15.55	0.00	13.90
	Nonrecipients	3.71	15.86	22.18	22.76	22.33	16.87
	Total	74.26	13.65	16.18	17.82	22.52	29.84
		100.00					
Construction/Improvement of health centers	Recipients	15.68	15.60	17.75	20.94	22.44	23.28
	FISE	5.33	17.14	21.57	17.84	21.59	21.86
	Gov./NoFISE	3.72	11.99	20.60	18.54	26.22	22.64
	NGO/International Organizations	2.56	11.01	15.27	28.79	18.34	26.60
	Private Sector	0.08	0.00	50.07	50.07	0.00	0.00
	Religious Congregation						
	Church	0.11	0.00	0.00	19.23	67.85	12.92
	Community	0.06	52.94	47.06	0.00	0.00	0.00
	Others	0.52	31.87	11.98	13.37	20.24	22.54
	Don' t know	0.04	50.00	0.00	0.00	0.00	50.00
	Nonrecipients	3.27	18.05	10.55	23.74	22.71	24.94
	Total	84.32	14.81	17.31	18.51	21.85	27.51
		100.00					
Water installation	Recipients	10.57	18.25	16.21	21.02	25.60	18.92
	FISE	0.25	8.34	33.85	26.15	31.62	0.00
	Gov./NoFISE	4.40	15.80	13.93	19.59	29.70	20.99
	NGO/International Organizations	2.67	33.89	22.47	18.01	15.69	9.93
	Private Sector	0.05	53.68	0.00	0.00	46.32	0.00
	Religious Congregation						
	Community	0.07	28.06	44.90	26.87	0.00	0.00
	Others	1.21	5.78	16.21	15.41	42.00	20.61
	Don' t know	0.26	10.47	7.93	13.70	26.38	41.48
	Nonrecipients	1.67	10.04	10.24	34.40	18.22	27.10
	Total	89.43	14.54	17.52	18.64	21.51	27.79
		100.00					
	Sewage facilities	Recipients	1.00	9.23	1.51	10.37	19.59
FISE		0.05	0.00	0.00	0.00	0.00	100.00
Gov./NoFISE		0.59	12.32	0.00	4.14	19.99	63.55
NGO/International Organizations		0.08	0.00	0.00	20.25	17.56	62.18
Community		0.11	0.00	0.00	35.92	46.17	17.91
Others		0.05	0.00	0.00	0.00	0.00	100.00
Don' t know		0.12	15.54	12.13	19.77	11.14	41.33
Nonrecipients		99.00	14.99	17.54	18.98	21.97	26.52
Total		100.00					

Nicaragua 1998

Distribution of households by program access

		Total	I	II	III	IV	V	
Electricity installation	Recipients	7.40	7.52	13.95	17.76	29.24	31.53	
	FISE	0.15	34.72	6.54	48.25	0.00	10.48	
	Gov./NoFISE	5.23	6.88	11.46	17.56	29.02	35.08	
	NGO/International Organizations	0.75	8.15	13.91	7.87	31.94	38.15	
	Private Sector	0.22	11.57	0.00	11.57	11.57	65.30	
	Religious Congregation							
	Church	0.03	0.00	100.00	0.00	0.00	0.00	
	Community	0.02	0.00	100.00	0.00	0.00	0.00	
	Others	0.45	9.08	19.26	24.07	42.79	4.81	
	Don' t know	0.25	0.00	35.70	42.87	21.43	0.00	
	Nonrecipients	0.28	5.63	30.89	6.90	46.37	10.22	
	Total	92.60	15.53	17.65	18.98	21.36	26.47	
			100.00					
Latrines constructions	Recipients	8.16	22.81	25.29	16.43	22.05	13.42	
	FISE	2.00	21.23	26.37	14.44	20.04	17.92	
	Gov./NoFISE	1.38	16.62	27.88	21.23	24.71	9.55	
	NGO/International Organizations	3.11	29.10	22.34	19.22	18.96	10.39	
	Private Sector	0.06	27.80	72.40	0.00	0.00	0.00	
	Religious Congregation							
	Church	0.07	53.88	22.98	0.00	0.00	23.14	
	Community	0.09	0.00	16.09	71.63	0.00	12.28	
	Others	0.40	15.97	28.20	6.24	33.97	15.61	
	Don' t know	0.29	11.04	37.49	13.14	33.09	5.20	
	Nonrecipients	0.76	20.38	21.42	3.97	30.91	23.33	
	Total	91.84	14.23	16.68	19.11	21.93	28.04	
			100.00					
Road construction	Recipients	6.76	15.89	14.14	16.92	22.45	30.59	
	FISE	0.78	7.19	12.94	30.42	22.85	26.60	
	Gov./NoFISE	3.66	16.05	12.02	14.34	23.95	33.64	
	NGO/International Organizations	0.94	18.31	22.46	17.08	11.21	30.94	
	Private Sector	0.12	25.22	0.00	0.00	0.00	74.78	
	Community	0.49	18.94	9.48	22.01	38.06	11.51	
	Others	0.03	29.71	0.00	0.00	69.93	0.00	
	Don' t know	0.74	17.10	21.23	15.22	20.07	26.40	
	Nonrecipients	93.24	14.87	17.61	19.04	21.91	26.58	
	Total	100.00						
	Food aid	Recipients	3.05	30.30	18.74	14.63	18.97	17.36
		FISE	0.03	100.00	0.00	0.00	0.00	0.00
		Gov./NoFISE	0.87	20.37	26.96	20.56	7.41	24.70
NGO/International Organizations		1.56	30.14	16.06	14.29	29.37	10.14	
Religious Congregation								
Church		0.10	19.53	25.76	33.06	0.00	21.53	
Community		0.10	0.00	19.20	13.28	0.00	67.52	
Others		0.01	0.00	0.00	0.00	100.00	0.00	
Don' t know		0.09	71.74	0.00	0.00	0.00	28.26	
Nonrecipients		0.30	56.83	14.49	0.00	14.00	14.68	
Total		96.95	14.45	17.34	19.03	22.04	27.15	
			100.00					

Nicaragua 1998

Distribution of households by program access

		Total	I	II	III	IV	V	
Health campaigns	Recipients	42.19	15.90	17.33	19.92	21.16	25.70	
	FISE	0.31	8.26	37.70	14.08	19.27	20.69	
	Gov./NoFISE	40.07	15.65	17.66	20.24	20.89	25.55	
	NGO/International Organizations	0.37	9.97	6.92	20.54	44.67	17.90	
	Private Sector	0.07	0.00	0.00	0.00	0.00	100.00	
	Religious Congregation	0.06	19.13	13.41	0.00	67.46	0.00	
	Church	0.04	43.91	0.00	0.00	0.00	56.09	
	Community	0.25	29.45	0.00	0.00	20.62	49.93	
	Others	0.27	27.05	5.63	28.76	38.56	0.00	
	Don't know	0.74	26.02	9.46	13.21	17.92	33.39	
	Nonrecipients	57.81	14.23	17.42	18.14	22.52	27.69	
	Total	100.00						
	Alphabetization	Recipients	2.82	11.51	19.77	28.01	31.03	9.69
		FISE	0.02	0.00	0.00	0.00	0.00	100.00
Gov./NoFISE		1.31	6.33	24.20	34.36	24.43	10.66	
NGO/International Organizations		0.55	15.83	18.05	29.63	29.77	6.74	
Private Sector		0.03	100.00	0.00	0.00	0.00	0.00	
Religious Congregation		0.14	45.97	0.00	18.42	35.62	0.00	
Church		0.16	8.80	61.80	12.37	8.51	8.51	
Community		0.28	11.51	8.30	16.76	63.43	0.00	
Others		0.12	15.41	0.00	48.84	22.93	12.81	
Don't know		0.22	0.00	9.70	12.21	56.23	21.86	
Nonrecipients		97.18	15.03	17.31	18.63	21.68	27.35	
Total		100.00						
Productive activities		Recipients	0.83	30.90	22.93	6.98	30.60	8.58
		FISE	0.03	50.00	50.00	0.00	0.00	0.00
	Gov./NoFISE	0.28	34.17	15.10	6.98	43.80	0.00	
	NGO/International Organizations	0.33	30.76	35.02	11.46	22.75	0.00	
	Private Sector	0.03	0.00	26.95	0.00	73.05	0.00	
	Others	0.04	48.02	15.81	0.00	0.00	36.17	
	Don't know	0.11	20.38	0.00	0.00	27.81	51.71	
	Nonrecipients	99.17	14.80	17.33	18.99	21.87	27.00	
	Total	100.00						
	Sport activities	Recipients	1.14	4.93	7.27	24.53	45.59	17.68
Gov./NoFISE		0.16	25.54	0.00	26.37	38.13	9.97	
NGO/International Organizations		0.12	0.00	18.43	40.88	0.00	40.69	
Private Sector		0.11	0.00	36.31	63.69	0.00	0.00	
Community		0.45	1.29	4.57	25.98	64.10	4.05	
Others		0.06	0.00	0.00	0.00	100.00	0.00	
Don't know		0.23	3.92	0.00	0.00	45.27	50.81	
Nonrecipients		98.86	15.05	17.50	18.83	21.67	26.95	
Total		100.00						

Nicaragua 1998

Distribution of households by program access

		Total	I	II	III	IV	V
Legal Assistance	Recipients	0.29	19.72	0.00	19.41	0.00	60.86
	Gov./NoFISE	0.06	0.00	50.00	0.00	50.00	0.00
	NGO/International Organizations	0.05	16.22	0.00	33.78	50.00	0.00
	Others	0.18	11.14	0.00	38.83	50.03	0.00
	Nonrecipients	99.85	14.93	17.41	18.89	21.98	26.80
	Total	100.15					
Employment Programs	Recipients	0.62	17.58	28.25	25.28	0.00	28.86
	FISE	0.13	16.85	0.00	23.42	9.77	49.96
	Gov./NoFISE	0.17	0.00	41.34	8.66	0.00	50.00
	NGO/International Organizations	0.05	0.00	0.00	0.00	50.00	50.00
	Private Sector	0.19	16.51	7.88	0.00	25.60	50.00
	Don' t know	0.06	0.00	0.00	50.00	0.00	50.00
	Nonrecipients	99.69	14.93	17.35	18.87	22.01	26.84
	Total	100.31					
Others	Recipients	0.57	8.69	8.91	18.86	42.86	20.68
	Gov./NoFISE	0.08	0.00	0.00	0.00	78.18	21.82
	NGO/International Organizations	0.23	15.81	6.03	40.46	0.00	37.70
	Private Sector	0.02	0.00	100.00	0.00	0.00	0.00
	Religious Congregation						
	Others	0.02	0.00	0.00	100.00	0.00	0.00
	Don' t know	0.13	0.00	0.00	0.00	88.92	11.08
	Nonrecipients	0.10	13.88	22.07	0.00	64.05	0.00
Total	99.43	14.97	17.43	18.89	21.82	26.88	
	Total	100.00		17.38			

Source: Author's calculation from INEC 1998 LSMS.