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Ecuador

Crisis, Poverty and Social Services

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EXCHANGE RATE
(1999 average)
Sucres 11,786.8 = US\$1.00
S1,000 = US\$0.09

SCHOOL YEAR
Coast: April - January
Inland: October - July

FISCAL YEAR
January 1 – December 31

ACRONYMS AND ABBREVIATIONS

BCE	Banco Central del Ecuador
PUCE	Pontificia Universidad Católica del Ecuador
BMI	Bono Materno Infantil
CAF	Corporación Andina de Fomento
CEM	Centros Educativos Matriz (<i>School Network</i>)
CEPAL	Comisión Económica para Latinoamérica y el Caribe, (<i>Economic Commission for Latin America and the Caribbean</i>)
CEPLAES	Centro de Planificación y Estudios Sociales
CONAMU	Consejo Nacional de la Mujer
COPEFEN	Unidad Coordinadora del Fenómeno El Niño
DDSR	Debt and Debt Service Reduction
DINEIB	Dirección Nacional de Educación Intercultural Bilingüe
DL	Decentralization and Social Participation Law (1997)
EB/PRODEC	Educación Básica – Proyecto de Educación
ECD	Early Childhood Development
ECV	Encuesta Condiciones de Vida (LSMS)
FASBASE	Proyecto de fortalecimiento y Ampliación de Servicios Básicos de Salud en Ecuador, (<i>Basic Primary Health Project</i>)
FGT	Foster – Greer- Thorbecke
FISE	Fondo de Inversión de Emergencia, (<i>Emergency Social Fund</i>)
GDP	Gross Domestic Product
IDB	Inter-American Development Bank, (<i>Banco Interamericano de Desarrollo</i>)
IESS	Instituto Ecuatoriano de Seguridad Social, (<i>Ecuadoran Social Security Institute</i>)
INEC	Instituto Nacional de Estadística y Censo, (<i>National Institute for Statistics and Census</i>)
INECEL	Instituto Ecuatoriano de Electrificación, (<i>Ecuadoran Electricity Company</i>)
INNFA	Instituto Nacional de la Juventud y de la Familia, (<i>National Institute of the Youth and the Family</i>)
JBG	Junta de Beneficiencia de Guayaquil

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LSMS	Living Standard Measurement Survey (ECV)
M & PL	Law of the Modernization of the State, Privatization, and Delivery of Public Services by the Private Sectors (1993)
MEC	Ministerio de Educación y Cultura, (<i>Ministry of Education and Culture</i>)
MHB	Municipal Health Board
MHCN	Municipal Integrated Health Care Networks
MODERSA	Modernización Gestión Hospitalaria y Reforma Sector Salud
MOH/ MSP	Ministerio de Salud Pública, (<i>Ministry of Public Health</i>)
MSB	Ministry of Social Welfare
MTI	Medium Term Improvement
NGO	Non-Governmental Organizations, (<i>Organizaciones No-Gubernamentales</i>)
OECD	Organization for Economic Co-operation and Development
OREALC	Oficina Regional de la Educación para América Latina y el Caribe
ORI	Operación de Rescate Infantil, (<i>Operation Child Rescue</i>)
PACMI	Programa de Alimentación Complementario Materno Infantil
PAHO/WHO	Organización Panamericana de la Salud, (<i>World Health Organization</i>)
PCE	Gasto per Capita, (<i>Per Capita Expenditures</i>)
PDI	Programa Desarrollo Infantil
PPP	Purchasing Power Parity
PRAF	Programa de Asistencia Familiar, (<i>Family Assistant Program</i>)
PROMECEB	Proyecto de Mejoramiento de Calidad y Eficiencia de la Educación Básica, (<i>Project for Improvement of Efficiency and Quality of Basic Education (IDB-Financed)</i>)
PRONEPE	Programa Nacional de Educación Preescolar Alternativa
SEDES	Secretaría de Desarrollo Social
SEGEPLAN	Secretaría General de Planificación, (<i>General Planning Secretariat</i>)
SIMUJER	Sistema de Indicadores sobre la Situación de las Mujeres y de las Diferencias entre Hombres y Mujeres en el País
SIISE	Proyecto de Sistema Integrado de Indicadores Sociales del Ecuador
SISVAN	National System of Nutritional Vigilance
SOLCA	Sociedad de Lucha contra el Cáncer
SSFA	Seguro Social de la Policía, (<i>Police Social Security</i>)
STD	Standard
TIMSS	Third International Mathematics and Science Study
TQM	Total Quality Management
UNDP	Programa de Desarrollo de las Naciones Unidas, (<i>United Nations Development Program</i>)
USAID	United States Agency for International Development
VAT	Value Added Tax, (<i>Impuesto de Valor Agregado</i>)

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Annex 1: Statistical Annex

Table A1. Distribution and Incidence of Poverty in 1998, by Geographic Area

	Population	% National Population	All Poor	% All Poor	Extreme Poor	% Extreme Poor
Costa	6,109,026	55	2,646,758	52	790,170	42
Rural	2,052,163	18	1,334,604	26	473,236	25
Urban	4,056,863	36	1,312,154	26	316,934	17
Sierra	4,708,827	42	2,275,786	45	1,017,881	55
Rural	2,353,073	21	1,687,092	33	874,092	47
Urban	2,355,754	21	588,694	12	143,789	8
Oriente	376,452	3	169,986	3	57,047	3
Rural	302,023	3	151,706	3	54,106	3
Urban	74,429	1	18,280	0	2,941	0
National	11,194,305	100	5,092,530	100	1,865,098	100
Rural	4,707,259	42	3,173,402	62	1,401,434	75
Urban	6,487,046	58	1,919,128	38	463,664	25

Source: LSMS 98.

Table A2. Distribution and Incidence of Poverty in 1998, by Consumption Quintiles. (Percentages)

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Extreme Poor	Poor	Non-poor	Rural	Urban	Costa	Sierra	Oriente	National
Population	20.0	20.0	20.0	20.0	20.0	16.8	45.8	54.2	42.1	57.9	54.6	42.1	3.4	100.0
Extreme Poor	96.4	3.6	0.0	0.0	0.0	100.0	100.0	0.0	75.1	24.9	42.4	54.6	3.1	100.0
Poor	43.7	42.9	13.3	0.1	0.0	36.6	100.0	0.0	62.3	37.7	52.0	44.7	3.3	100.0
Non-poor	0.0	0.6	25.7	36.9	36.9	0.0	0.0	100.0	25.1	74.9	56.7	39.9	3.4	100.0

Source: LSMS 98.

Table A3. Household Characteristics by Consumption Quintiles and Poverty Status

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Extreme Poor	Poor	Non-poor	Rural	Urban	Costa	Sierra	Oriente	National
Family Size	7.40	6.28	5.65	4.84	4.29	7.60	6.70	4.84	6.13	5.34	5.74	5.56	6.00	5.67
Female Headed	16.22	17.89	17.57	18.64	21.32	16.54	17.13	19.56	15.07	21.27	18.23	19.86	14.56	18.81
Average Age	23.08	24.01	25.57	25.90	29.91	22.71	23.70	27.37	26.06	25.49	25.49	26.31	22.50	25.73
Number of Children Less Than 6 Years	1.50	1.11	0.83	0.63	0.46	1.61	1.24	0.62	0.98	0.85	0.94	0.84	1.15	0.90
Number of Elderly People Years Schooling	0.34	0.23	0.26	0.17	0.18	0.34	0.28	0.20	0.30	0.19	0.23	0.25	0.14	0.24
Mothers	3.64	5.21	6.43	8.26	10.90	3.57	4.72	8.79	4.67	8.61	7.41	6.71	6.22	7.08
25 Years Old	6.31	7.10	8.89	10.04	12.43	6.80	6.96	10.74	6.84	10.60	9.37	8.97	8.86	9.19
Household & Spouse	3.37	4.87	6.14	7.96	11.17	3.28	4.38	8.91	4.51	8.95	7.32	7.05	6.34	7.17
Dependance Rate	3.47	2.62	2.28	2.02	1.63	3.53	2.94	1.96	2.84	2.08	2.46	2.27	3.15	2.40
House Has Bad Wall	32.31	25.29	17.86	12.19	2.28	32.46	27.77	9.71	26.43	11.90	29.07	4.93	2.13	18.01
House Has Mud Floor	34.13	14.58	7.54	3.66	1.50	36.02	22.41	3.72	23.71	3.94	4.80	22.75	1.91	12.26
Percent Lacking Piped Water	75.41	58.56	41.00	31.34	12.13	74.27	64.07	26.46	71.71	23.18	51.02	32.42	62.69	43.59
House Without Electricity	22.31	10.27	4.44	1.38	0.61	22.15	15.05	1.07	18.12	0.26	7.18	6.90	28.33	7.77
Overcrowded	0.37	0.51	0.58	0.71	1.09	0.35	0.45	81.95	0.58	0.71	0.63	0.69	0.62	0.66
Rent Home	21.38	27.00	31.06	34.94	33.02	21.61	25.63	32.73	19.99	36.68	26.33	34.23	26.42	29.66

Source: LSMS 98.

Table A4. Mean Total Consumption Expenditures per Capita and per Household

Consumption Quintile	Per Capita [sucres]	Per Household [sucres]
Q1	108,659	782,715
Q2	202,049	1,265,781
Q3	299,545	1,684,742
Q4	455,605	2,200,072
Q5	1,119,321	4,618,036
National	436,723	2,109,000

Source: LSMS 1998.

**Table A5. Age Distribution of Households in Ecuador, 1998
Percent of Household With Children in Both Age Groups**

Quintile	Age Group			
	0-2	3-5	6-15	>=65
Q1				
0-2	100.00	70.03	80.18	18.79
3-5	62.25	100.00	86.41	17.70
6-15	50.14	60.79	100.00	20.84
>=65	41.40	43.87	73.44	100.00
Q5				
0-2	100.00	30.79	52.68	5.71
3-5	26.31	100.00	61.08	8.59
6-15	17.91	24.31	100.00	9.22
>=65	7.27	12.80	34.53	100.00

Note: The numbers in each row state the number of poor households having members of both age groups as a percentage of all households in the age group stated at the left of the row.

Source: LSMS 1998.

Table A6. Population According to Sex, Disease Symptoms and Age Groups by Consumption Quintiles

Urban	Population	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Total
Both							
Disease Symptoms	3,408,693	50.91	50.38	52.83	52.55	53.62	52.49
Age 0 to 5	587,727	65.75	71.83	70.80	72.81	77.05	72.04
Age 6 and Higher	2,820,966	46.76	45.70	50.29	49.65	51.60	49.66
Men							
Disease Symptoms	1,554,118	42.25	50.86	50.18	48.85	48.91	48.92
Age 0 to 5	293,710	48.20	73.99	74.33	68.14	76.42	69.60
Age 6 and Higher	1,260,408	40.68	45.24	46.57	45.82	46.56	45.74
Women							
Disease Symptoms	1,854,575	60.07	49.89	55.32	56.15	57.82	55.89
Age 0 to 5	294,017	82.76	69.01	67.15	78.26	77.61	74.65
Age 6 and Higher	1,560,558	53.35	46.15	53.73	53.31	56.11	53.34
Rural							
Both							
Disease Symptoms	2,558,546	50.03	54.46	57.68	58.23	62.38	54.32
Age 0 to 5	395,687	63.74	69.71	71.00	72.34	73.40	67.66
Age 6 and Higher	2,162,859	47.66	52.28	55.96	56.87	61.52	52.44
Men							
Disease Symptoms	1,249,234	47.88	52.28	54.68	53.90	62.13	51.80
Age 0 to 5	208,204	66.19	67.19	73.35	66.03	79.23	67.89
Age 6 and Higher	1,041,030	44.54	49.95	52.67	52.75	60.68	49.47
Women							
Disease Symptoms	1,309,312	52.33	56.84	60.79	62.42	62.64	56.97
Age 0 to 5	187,483	60.85	72.90	69.21	78.30	66.55	67.41
Age 6 and Higher	1,121,829	50.94	54.76	59.50	60.87	62.36	55.53

Source: LSMS 1998.

Table A7. Type of Health Providers Attending to Individuals with Disease Symptoms by Consumption Quintiles

Urban	Population	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Total
Both	1,590,385	100.00	100.00	100.00	100.00	100.00	100.00
Hospital	259,746	14.22	16.76	14.67	17.44	16.60	16.33
Health Center	120,080	15.55	10.93	7.56	7.66	4.52	7.55
Health Subcenter	69,076	6.93	6.20	5.22	4.18	2.63	4.34
Clinic	639,533	27.11	30.33	37.09	39.20	49.82	40.21
Pharmacy	375,654	32.39	30.67	29.65	24.41	14.44	23.62
Home	69,042	NA	1.89	2.22	3.38	8.34	4.34
Other	57,254	3.80	3.22	3.58	3.73	3.64	3.60
Men	727,473	100.00	100.00	100.00	100.00	100.00	100.00
Hospital	131,849	16.13	19.85	15.23	20.13	17.73	18.12
Health Center	56,577	21.36	13.43	6.68	6.00	3.89	7.78
Health Subcenter	35,130	6.96	6.81	5.73	4.56	2.77	4.83
Clinic	272,443	18.42	26.47	38.15	39.94	45.39	37.45
Pharmacy	176,382	33.98	29.15	28.88	22.68	17.32	24.25
Home	24,543	NA	1.20	1.61	2.61	7.37	3.37
Other	30,549	3.16	3.10	3.72	4.09	5.54	4.20
Women	862,912	100.00	100.00	100.00	100.00	100.00	100.00
Hospital	127,897	12.28	13.05	14.17	15.30	15.81	14.82
Health Center	63,503	9.67	7.94	8.35	9.00	4.97	7.36
Health Subcenter	33,946	6.90	5.47	4.78	3.87	2.53	3.93
Clinic	367,090	35.92	34.95	36.15	38.60	52.92	42.54
Pharmacy	199,272	30.77	32.50	30.33	25.79	12.42	23.09
Home	44,499	NA	2.72	2.77	4.00	9.02	5.16
Other	26,705	4.46	3.38	3.46	3.44	2.32	3.09
Rural							
Both	984,836	100.00	100.00	100.00	100.00	100.00	100.00
Hospital	137,597	15.32	12.68	13.92	12.69	16.44	13.97
Health Center	63,622	6.39	7.78	7.66	6.42	0.54	6.46
Health Subcenter	164,786	22.23	16.02	16.43	14.63	9.59	16.73
Clinic	360,968	30.31	35.20	33.39	44.93	48.70	36.65
Pharmacy	192,748	16.91	21.95	23.88	13.93	20.08	19.57
Home	30,306	4.07	3.17	2.45	2.69	2.48	3.08
Other	34,809	4.77	3.19	2.27	4.71	2.17	3.53
Men	484,605	100.00	100.00	100.00	100.00	100.00	100.00
Hospital	69,529	15.38	12.63	14.60	13.84	16.40	14.35
Health Center	31,174	5.95	8.07	7.84	6.35	0.66	6.43
Health Subcenter	76,945	22.99	14.02	14.98	14.61	6.98	15.88
Clinic	179,147	29.95	37.31	30.43	47.49	50.15	36.97
Pharmacy	99,500	18.64	20.16	27.91	13.91	21.28	20.53
Home	12,833	2.82	3.39	2.51	1.13	3.10	2.65
Other	15,477	4.28	4.42	1.72	2.66	1.44	3.19
Women	500,231	100.00	100.00	100.00	100.00	100.00	100.00
Hospital	68,068	15.27	12.73	13.28	11.65	16.48	13.61
Health Center	32,448	6.86	7.52	7.49	6.49	0.41	6.49
Health Subcenter	87,841	21.42	17.88	17.80	14.64	12.28	17.56
Clinic	181,821	30.70	33.23	36.19	42.62	47.21	36.35
Pharmacy	93,248	15.08	23.62	20.06	13.94	18.84	18.64
Home	17,473	5.39	2.96	2.39	4.09	1.84	3.49
Other	19,332	5.29	2.05	2.80	6.55	2.93	3.86

Source: LSMS 1998.

Table A8. Enrollment of Children Less Than 6 Years Old in Daycare and Preschool

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Extreme Poor	Poor	Non-poor	Rural	Urban	Costa	Sierra	Oriente	National
% Enrolled / Total Population														
0-2	1.96	1.58	0.57	1.33	4.64	1.54	1.41	2.30	1.80	1.92	1.30	2.58	3.38	1.87
3-5	17.37	26.12	29.17	38.41	51.24	16.32	21.93	39.82	22.06	36.35	29.08	31.28	29.99	30.02
% Enrolled in Public Institutions / Total Enrolled														
0-2	85.41	94.97	42.72	67.61	35.70	79.29	90.67	48.77	87.34	56.24	63.12	68.75	95.70	68.36
3-5	85.93	75.64	67.10	64.63	24.64	86.86	77.28	49.78	81.25	51.42	57.61	63.55	80.51	61.13
% Enrolled in Private Institutions / Total Enrolled														
0-2	14.59	5.03	57.28	32.39	64.30	20.71	9.33	50.68	12.66	43.27	36.88	31.25	NA	31.34
3-5	14.07	24.36	32.90	35.37	75.36	13.14	22.72	50.22	18.75	48.58	42.39	36.45	19.49	38.87

Source: LSMS 98.

Table A9. Education Enrollment Rates

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Extreme Poor	Poor	Non-poor	Rural	Urban	Costa	Sierra	Oriente	National
Primary														
Gross Enrollment Rate	1.17	1.14	1.06	1.11	1.07	1.17	1.15	1.08	1.13	1.10	1.15	1.08	1.05	1.12
Net Enrollment Rate	0.88	0.94	0.93	0.97	0.99	0.87	0.91	0.97	0.90	0.96	0.93	0.95	0.94	0.94
Repetition Rate														
first grade	16.98	13.31	4.93	6.84	3.83	18.78	14.18	5.23	15.57	6.50	10.16	9.89	21.02	10.53
second grade	16.12	8.05	7.33	3.38	3.32	18.83	12.76	3.25	11.44	5.81	7.67	9.82	6.39	8.55
% not enrolled 6-11	11.99	5.59	6.62	1.69	0.08	12.36	8.95	2.39	9.13	3.24	6.98	4.54	5.35	5.85
Secondary Low Level														
Gross Enrollment Rate	0.37	0.61	0.96	1.07	1.08	0.34	0.53	1.03	0.57	0.96	0.76	0.77	0.90	0.77
Net Enrollment Rate	0.19	0.31	0.59	0.69	0.80	0.17	0.28	0.70	0.31	0.63	0.44	0.51	0.58	0.48
Repetition Rate														
first grade	6.85	9.15	14.73	12.40	8.38	8.56	9.01	11.75	8.91	11.73	9.64	11.49	13.41	10.65
second grade	5.90	7.07	4.32	13.10	9.65	8.11	7.91	8.37	6.54	9.19	4.80	9.19	28.92	8.21
% not enrolled 12-14	31.88	27.90	14.75	5.81	5.11	31.24	28.10	8.86	29.49	8.73	13.98	24.47	17.86	18.88
Secondary Higher Level														
Gross Enrollment Rate	0.19	0.35	0.53	0.70	0.89	0.17	0.30	0.73	0.30	0.70	0.52	0.53	0.49	0.52
Net Enrollment Rate	0.11	0.20	0.32	0.47	0.62	0.10	0.18	0.49	0.17	0.47	0.32	0.36	0.27	0.34
Repetition Rate														
first grade	0.52	4.82	10.48	11.51	8.75	2.22	3.79	10.57	5.42	9.46	6.50	10.01	23.17	8.44
second grade	23.81	NA	6.97	4.22	5.89	11.84	5.83	5.90	5.53	6.42	6.77	5.59	5.20	6.21
% not enrolled 15-17	63.47	54.50	35.87	19.98	17.42	64.73	55.54	23.28	56.99	24.63	37.74	39.77	47.30	38.91

Source: LSMS 98.

Table A10: Distribution of Education Enrollments by School Type. (Percentages)

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Total
Primary						
Fiscal	89.81	82.96	75.88	65.91	34.61	73.55
Particular	8.34	15.89	20.72	30.08	61.37	23.76
Municipal del Consejo Provincial Fiscomisional, Fiscomilitar, JGB	1.85	1.15	3.40	4.01	4.02	2.69
Total	100.00	100.00	100.00	100.00	100.00	100.00
Secondary						
Fiscal	83.32	83.71	78.44	72.68	40.68	68.44
Particular	10.50	12.64	16.43	24.12	52.66	26.63
Municipal del Consejo Provincial Fiscomisional, Fiscomilitar, JGB	6.18	3.64	5.13	3.20	6.66	4.92
Total	100.00	100.00	100.00	100.00	100.00	100.00

Source: LSMS 1998.

Table A11. Monthly Education Expenditures by Households with Children between 6 and 17 Years Old in Public Schools

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅
Total					
Primary	13,120	20,634	26,781	41,770	74,349
Secondary Low Level	28,983	41,367	49,479	59,405	107,826
Secondary High Level	56,608	57,583	58,195	87,905	159,359
Transport					
Primary	937	2,132	2,405	4,064	6,927
Secondary Low Level	3,510	6,279	8,431	6,912	13,215
Secondary High Level	5,373	7,853	6,880	9,461	12,554
Text and educational material					
Primary	5,011	7,159	9,324	12,956	17,368
Secondary Low Level	10,818	14,720	19,434	21,812	33,693
Secondary High Level	23,376	20,525	21,680	27,864	61,534
Other (enrollments, uniforms...)					
Primary	7,171	11,343	15,052	24,751	50,055
Secondary Low Level	14,656	20,368	21,613	30,682	60,918
Secondary High Level	27,858	29,205	29,634	50,579	85,272
Consumption per capita					
Primary	106,469	199,145	295,651	448,245	815,011
Secondary Low Level	123,722	204,159	301,544	452,088	793,677
Secondary High Level	125,458	209,224	302,588	464,499	838,967
Per student educational expenditure / consumption per					
Primary	12.32	10.36	9.06	9.32	9.12
Secondary Low Level	23.43	20.26	16.41	13.14	13.59
Secondary High Level	45.12	27.52	19.23	18.92	18.99
Total household consumption					
Primary	845,522	1,437,782	1,850,573	2,589,409	4,365,905
Secondary Low Level	1,018,731	1,528,933	1,995,391	2,606,158	4,474,248
Secondary High Level	1,050,260	1,573,821	1,928,427	2,896,528	4,120,318
Per student educational expenditure / total household					
Primary	1.55	1.44	1.45	1.61	1.70
Secondary Low Level	2.85	2.71	2.48	2.28	2.41
Secondary High Level	5.39	3.66	3.02	3.03	3.87

Note: Monthly Education Expenditures = Total expenditure in target level / number of children between 6-17 enrolled in target level.

Source: LSMS 98.

Table A12. Monthly Education Expenditures by Households with Children between 6 and 17 Years Old in Public Schools

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Extreme Poor	Poor	Non-poor	Rural	Urban	Costa	Sierra	Oriente	National
Total														
Primary	13,120	20,634	26,781	41,770	74,349	12,599	17,336	43,777	17,780	38,485	21,004	37,766	24,246	28,559
Secondary Low Level	28,983	41,367	49,479	59,405	107,826	29,320	37,171	68,293	41,810	62,938	39,866	70,273	53,348	54,355
Secondary High Level	56,608	57,583	58,195	87,905	159,359	49,610	56,052	100,743	59,153	95,991	79,869	91,479	86,484	85,276
Transport														
Primary	937	2,132	2,405	4,064	6,927	591	1,495	4,210	1,542	3,649	760	4,901	1,902	2,639
Secondary Low Level	3,510	6,279	8,431	6,912	13,215	2,763	5,091	9,306	5,127	8,975	1,917	13,496	6,473	7,412
Secondary High Level	5,373	7,853	6,880	9,461	12,554	4,368	6,266	10,053	7,258	9,464	2,266	15,835	18,812	8,823
Text and educational material														
Primary	5,011	7,159	9,324	12,956	17,368	5,012	6,334	12,660	6,012	11,804	7,089	11,345	8,454	9,027
Secondary Low Level	10,818	14,720	19,434	21,812	33,693	11,909	13,679	24,081	15,589	22,047	14,740	24,829	16,076	19,423
Secondary High Level	23,376	20,525	21,680	27,864	61,534	19,769	20,911	35,745	19,451	35,140	31,141	29,545	36,860	30,577
Other (enrollments, uniforms...)														
Primary	7,171	11,343	15,052	24,751	50,055	6,995	9,507	26,908	10,226	23,032	13,155	21,520	13,890	16,893
Secondary Low Level	14,656	20,368	21,613	30,682	60,918	14,648	18,401	34,907	21,094	31,917	23,210	31,948	30,799	27,520
Secondary High Level	27,858	29,205	29,634	50,579	85,272	25,473	28,875	54,946	32,443	51,387	46,462	46,099	30,812	45,877
% Primary														
transport	7.14	10.33	8.98	9.73	9.32	4.69	8.62	9.62	8.67	9.48	3.62	12.98	7.85	9.24
text	38.19	34.69	34.82	31.02	23.36	39.78	36.54	28.92	33.81	30.67	33.75	30.04	34.87	31.61
other	54.66	54.97	56.20	59.25	67.32	55.52	54.84	61.47	57.52	59.85	62.63	56.98	57.29	59.15
% SLL														
transport	12.11	15.18	17.04	11.63	12.26	9.42	13.70	13.63	12.26	14.26	4.81	19.21	12.13	13.64
text	37.32	35.58	39.28	36.72	31.25	40.62	36.80	35.26	37.29	35.03	36.97	35.33	30.13	35.73
other	50.57	49.24	43.68	51.65	56.50	49.96	49.51	51.11	50.45	50.71	58.22	45.46	57.73	50.63
% SHL														
transport	9.49	13.64	11.82	10.76	7.88	8.81	11.18	9.98	12.27	9.86	2.84	17.31	21.75	10.35
text	41.30	35.65	37.25	31.70	38.61	39.85	37.31	35.48	32.88	36.61	38.99	32.30	42.62	35.86
other	49.21	50.72	50.92	57.54	53.51	51.35	51.51	54.54	54.85	53.53	58.17	50.39	35.63	53.80

Source: LSMS 1998.

Table A13. Monthly Education Expenditures by Households with Children between 6 and 17 Years Old in Private Schools

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Extreme Poor	Poor	Non-poor	Rural	Urban	Costa	Sierra	Oriente	National
Total														
Primary	17,165	26,181	42,225	65,844	243,784	17,724	25,481	155,425	45,942	137,682	62,164	221,819	52,199	120,507
Secondary Low Level	27,307	48,348	56,281	86,773	314,414	26,934	45,832	202,961	99,259	191,407	106,676	259,164	102,826	174,986
Secondary High Level	54,666	69,027	68,109	128,460	366,221	41,282	66,801	280,309	91,108	279,942	178,441	348,025	84,315	256,317
Transport														
Primary	119	1,973	2,946	4,655	25,205	145	1,345	15,202	4,046	13,160	2,494	26,924	3,636	11,454
Secondary Low Level	1,970	4,490	5,604	5,922	32,594	724	4,692	19,944	9,202	18,703	7,733	28,437	7,539	17,010
Secondary High Level	3,987	5,900	9,704	7,921	37,410	10,520	7,192	27,619	4,564	28,304	10,471	42,554	17,081	25,334
Text and educational material														
Primary	6,404	8,682	10,280	14,799	34,878	6,599	7,809	24,755	9,664	22,596	16,081	27,231	17,066	20,175
Secondary Low Level	10,517	13,861	15,497	21,209	38,851	11,751	12,782	29,843	24,711	27,189	21,365	33,367	21,805	26,747
Secondary High Level	20,768	17,868	18,515	26,379	55,547	13,799	18,481	44,991	24,224	44,550	39,136	45,431	31,823	42,007
Other (enrollments, uniforms...)														
Primary	10,642	15,526	29,000	46,390	183,701	10,980	16,327	115,467	32,231	101,925	43,589	167,664	31,498	88,878
Secondary Low Level	14,819	29,997	35,180	59,643	242,969	14,459	28,358	153,175	65,347	145,515	77,577	197,360	73,483	131,228
Secondary High Level	29,912	45,259	39,890	94,159	273,264	16,964	41,129	207,699	62,321	207,088	128,834	260,040	35,410	188,976
% Primary														
transport	0.70	7.54	6.98	7.07	10.34	0.82	5.28	9.78	8.81	9.56	4.01	12.14	6.96	9.50
text	37.31	33.16	24.34	22.48	14.31	37.23	30.65	15.93	21.04	16.41	25.87	12.28	32.69	16.74
other	62.00	59.30	68.68	70.45	75.35	61.95	64.08	74.29	70.16	74.03	70.12	75.59	60.34	73.75
% SLL														
transport	7.22	9.29	9.96	6.82	10.37	2.69	10.24	9.83	9.27	9.77	7.25	10.97	7.33	9.72
text	38.52	28.67	27.54	24.44	12.36	43.63	27.89	14.70	24.90	14.20	20.03	12.87	21.21	15.29
other	54.27	62.04	62.51	68.73	77.28	53.68	61.87	75.47	65.83	76.02	72.72	76.15	71.46	74.99
% SHL														
transport	7.29	8.55	14.25	6.17	10.22	25.48	10.77	9.85	5.01	10.11	5.87	12.23	20.26	9.88
text	37.99	25.89	27.19	20.54	15.17	33.42	27.67	16.05	26.59	15.91	21.93	13.05	37.74	16.39
other	54.72	65.57	58.57	73.30	74.62	41.09	61.57	74.10	68.40	73.98	72.20	74.72	42.00	73.73

Source: LSMS 1998.

Table A14. Monthly Education Expenditures by Households with Children between 6 and 17 Years Old in Public and Private Schools

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Extreme Poor	Poor	Non-poor	Rural	Urban	Costa	Sierra	Oriente	National
Total														
Primary	13,494	21,517	30,091	49,077	176,324	13,070	18,467	85,385	21,122	73,204	33,030	78,557	27,070	52,137
Secondary Low Level	28,816	42,116	50,824	66,658	215,315	29,081	38,247	112,692	49,199	103,755	57,738	116,981	56,308	84,724
Secondary High Level	56,422	59,084	60,174	97,384	286,368	49,103	57,468	170,816	64,529	163,528	111,797	174,978	86,300	139,980
Transport														
Primary	862	2,107	2,521	4,243	17,927	550	1,474	8,306	1,839	6,978	1,267	9,782	2,077	4,899
Secondary Low Level	3,356	6,087	7,872	6,649	23,298	2,558	5,041	12,813	5,651	12,066	3,473	17,191	6,537	9,828
Secondary High Level	5,240	7,596	7,444	9,101	27,815	4,743	6,388	16,908	6,805	16,381	4,923	24,531	18,665	14,104
Text and educational material														
Primary	5,140	7,401	9,529	13,516	27,906	5,158	6,539	17,167	6,446	15,581	9,716	14,865	9,324	11,886
Secondary Low Level	10,788	14,628	18,656	21,652	36,377	11,893	13,567	25,980	16,762	23,681	16,512	26,940	16,418	21,267
Secondary High Level	23,127	20,177	21,048	27,517	57,858	19,406	20,591	39,353	20,254	38,595	33,731	34,716	36,432	34,232
Other (enrollments, uniforms...)														
Primary	7,492	12,009	18,042	31,318	130,490	7,362	10,454	59,911	12,838	50,644	22,047	53,910	15,669	35,352
Secondary Low Level	14,672	21,401	24,297	38,356	155,641	14,629	19,639	73,899	26,785	68,008	37,753	72,850	33,353	53,629
Secondary High Level	28,055	31,311	31,682	60,766	200,695	24,954	30,489	114,555	37,469	108,552	73,142	115,731	31,203	91,644
% Primary														
transport	6.38	9.79	8.38	8.65	10.17	4.21	7.98	9.73	8.71	9.53	3.84	12.45	7.67	9.40
text	38.09	34.40	31.67	27.54	15.83	39.46	35.41	20.11	30.52	21.28	29.42	18.92	34.44	22.80
other	55.53	55.81	59.96	63.81	74.01	56.33	56.61	70.17	60.78	69.18	66.75	68.63	57.88	67.81
% SLL														
transport	11.65	14.45	15.49	9.98	10.82	8.80	13.18	11.37	11.49	11.63	6.01	14.70	11.61	11.60
text	37.44	34.73	36.71	32.48	16.89	40.90	35.47	23.05	34.07	22.82	28.60	23.03	29.16	25.10
other	50.92	50.81	47.81	57.54	72.28	50.31	51.35	65.58	54.44	65.55	65.39	62.28	59.23	63.30
% SHL														
transport	9.29	12.86	12.37	9.35	9.71	9.66	11.12	9.90	10.55	10.02	4.40	14.02	21.63	10.08
text	40.99	34.15	34.98	28.26	20.20	39.52	35.83	23.04	31.39	23.60	30.17	19.84	42.22	24.46
other	49.72	52.99	52.65	62.40	70.08	50.82	53.05	67.06	58.07	66.38	65.42	66.14	36.16	65.47

Source: LSMS 1998.

Table A15. Self Reported Number of Days of School Missed Monthly

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Extreme Poor	Poor	Non-poor	Rural	Urban	Costa	Sierra	Oriente	National
Age 6-11														
Under control of the household	1.0	1.6	2.1	0.9	1.4	1.0	1.4	1.0	0.8	1.8	2.4	0.7	0.6	1.3
Outside the control of the household	2.8	1.6	1.5	1.0	0.9	2.9	2.3	1.2	1.8	1.9	2.2	1.4	1.1	1.8
Other	2.5	1.4	1.2	1.0	1.0	2.4	1.9	1.2	1.9	1.3	1.7	1.5	1.9	1.6
Total	6.3	4.6	4.7	3.0	3.4	6.4	5.6	3.5	4.4	5.0	6.3	3.6	3.5	4.7
Age 12-14														
Under control of the household	1.1	2.1	0.8	1.3	0.8	1.2	1.5	1.2	1.1	2.0	3.0	0.9	0.9	1.5
Outside the control of the household	8.3	2.8	2.7	1.3	0.9	9.6	5.4	1.5	3.2	5.3	5.0	2.6	1.7	4.2
Other	3.4	0.9	3.5	0.8	0.7	2.4	3.5	0.9	1.6	2.1	3.4	1.1	1.8	2.0
Total	12.8	5.8	7.0	3.3	2.4	13.3	10.3	3.6	5.9	9.4	11.4	4.5	4.5	7.6
Age 15-17														
Under control of the household	1.4	1.1	2.1	1.8	0.8	1.5	2.1	1.6	1.7	1.7	2.2	1.1	0.8	1.7
Outside the control of the household	2.1	2.4	1.1	0.8	3.3	2.2	1.9	1.4	2.0	1.3	1.5	1.7	1.3	1.5
Other	0.4	0.6	1.3	0.6	1.7	0.4	0.4	1.2	0.8	1.1	1.6	0.8	0.7	1.0
Total	3.9	4.1	4.4	3.3	5.8	4.1	4.4	4.2	4.6	4.1	5.4	3.6	2.8	4.3

Notes:

Under control of the household includes: domestic labor, cost of schooling, work.

Outside the control of the household includes: illness, strikes, weather.

Other includes: not interested and the lack of teachers, infrastructures and equipment.

Source: LSMS 98.

Table A16. Children's Economic and Educational Activity. Age Group 6-11. (Percentages)

	Total	Work and School	Only Work	Total Working	Only Study	No Work nor School	Total
TOTAL	Girls	6.10	0.49	6.60	89.67	3.73	100.00
	Boys	8.82	0.75	9.56	83.69	6.74	100.00
	Total	7.48	0.62	8.10	86.64	5.26	100.00
RURAL	Girls	9.69	1.12	10.81	83.26	5.93	100.00
	Boys	13.67	1.43	15.11	75.21	9.68	100.00
	Total	11.73	1.28	13.01	79.13	7.86	100.00
URBAN	Girls	3.30	0.00	3.30	94.70	2.01	100.00
	Boys	4.84	0.19	5.03	90.64	4.33	100.00
	Total	4.07	0.09	4.17	92.66	3.17	100.00

	1st Q.	Work and School	Only Work	Total Working	Only Study	No Work nor School	Total
TOTAL	Girls	9.07	1.76	10.83	82.72	6.45	100.00
	Boys	12.04	2.08	14.12	72.54	13.34	100.00
	Total	10.63	1.93	12.56	77.38	10.06	100.00
RURAL	Girls	9.96	2.19	12.15	80.14	7.71	100.00
	Boys	14.67	2.36	17.03	68.87	14.10	100.00
	Total	12.40	2.28	14.68	74.31	11.02	100.00
URBAN	Girls	5.37	0.00	5.37	93.38	1.25	100.00
	Boys	2.59	1.08	3.67	85.73	10.60	100.00
	Total	3.84	0.59	4.43	89.17	6.40	100.00

	2nd Q.	Work and School	Only Work	Total Working	Only Study	No Work nor School	Total
TOTAL	Girls	8.62	0.09	8.71	86.50	4.79	100.00
	Boys	11.16	0.31	11.48	82.51	6.01	100.00
	Total	9.87	0.20	10.07	84.54	5.39	100.00
RURAL	Girls	12.89	0.17	13.06	82.36	4.58	100.00
	Boys	12.42	0.55	12.97	81.70	5.33	100.00
	Total	12.65	0.36	13.01	82.03	4.96	100.00
URBAN	Girls	3.37	0.00	3.37	91.59	5.04	100.00
	Boys	9.45	0.00	9.45	83.62	6.92	100.00
	Total	6.28	0.00	6.28	87.78	5.94	100.00

Source: LSMS 1998.

Table A17. Children's Economic and Educational Activity. Age Group 12-14. (Percentages)

	Total	Work and School	Only Work	Total Working	Only Study	No Work nor School	Total
TOTAL	Girls	20.84	10.41	31.25	59.17	9.57	100.00
	Boys	33.48	14.53	48.01	48.65	3.34	100.00
	Total	27.26	12.51	39.76	53.83	6.41	100.00
RURAL	Girls	24.96	16.36	41.32	44.43	14.25	100.00
	Boys	44.43	25.20	69.62	27.14	3.24	100.00
	Total	34.76	20.81	55.57	35.72	8.71	100.00
URBAN	Girls	16.82	4.62	21.45	73.54	5.01	100.00
	Boys	23.17	4.49	27.66	68.90	3.44	100.00
	Total	20.07	4.56	24.63	71.17	4.20	100.00

	1st Q.	Work and School	Only Work	Total Working	Only Study	No Work nor School	Total
TOTAL	Girls	23.53	20.55	44.08	43.00	12.92	100.00
	Boys	35.27	27.42	62.69	34.12	3.20	100.00
	Total	30.06	24.37	54.43	38.06	7.51	100.00
RURAL	Girls	25.86	24.28	50.15	35.73	14.12	100.00
	Boys	40.78	32.53	73.32	22.96	3.72	100.00
	Total	33.99	28.77	62.76	28.78	8.46	100.00
URBAN	Girls	13.58	4.60	18.18	74.07	7.75	100.00
	Boys	16.55	10.07	26.62	71.96	1.42	100.00
	Total	15.36	7.89	23.25	72.80	3.95	100.00

	2nd Q.	Work and School	Only Work	Total Working	Only Study	No Work nor School	Total
TOTAL	Girls	20.18	13.97	34.16	50.80	15.04	100.00
	Boys	39.15	18.10	57.25	34.11	8.64	100.00
	Total	29.50	16.00	45.51	42.60	11.90	100.00
RURAL	Girls	20.83	15.28	36.11	46.11	17.77	100.00
	Boys	46.00	26.21	72.21	23.87	3.92	100.00
	Total	32.68	20.43	53.11	35.64	11.25	100.00
URBAN	Girls	18.93	11.43	30.36	59.92	9.72	100.00
	Boys	28.52	5.52	34.05	49.98	15.97	100.00
	Total	23.99	8.32	32.31	54.68	13.02	100.00

Source: LSMS 1998.

Table A18. Children's Economic and Educational Activity. Age Group 15-17. (Percentages)

	Total	Work and School	Only Work	Total Working	Only Study	No Work nor School	Total
TOTAL	Girls	18.69	21.76	40.45	42.78	16.78	100.00
	Boys	31.50	32.48	63.98	29.24	6.78	100.00
	Total	25.47	27.44	52.92	35.61	11.48	100.00
RURAL	Girls	16.93	33.85	50.78	25.86	23.35	100.00
	Boys	32.49	50.92	83.41	10.69	5.91	100.00
	Total	24.97	42.67	67.65	18.02	14.34	100.00
URBAN	Girls	20.14	11.71	31.85	56.84	11.30	100.00
	Boys	30.74	18.51	49.25	43.31	7.44	100.00
	Total	25.87	15.38	41.25	49.53	9.22	100.00

	1st Q.	Work and School	Only Work	Total Working	Only Study	No Work nor School	Total
TOTAL	Girls	14.34	41.68	56.03	18.13	25.84	100.00
	Boys	20.07	53.55	73.62	19.99	6.39	100.00
	Total	17.41	48.03	65.44	19.13	15.44	100.00
RURAL	Girls	11.81	44.62	56.43	15.83	27.74	100.00
	Boys	19.37	69.41	88.78	5.61	5.61	100.00
	Total	15.59	57.01	72.59	10.72	16.68	100.00
URBAN	Girls	27.31	26.68	53.98	29.89	16.13	100.00
	Boys	21.93	11.49	33.42	58.12	8.46	100.00
	Total	23.77	16.68	40.45	48.47	11.08	100.00

	2nd Q.	Work and School	Only Work	Total Working	Only Study	No Work nor School	Total
TOTAL	Girls	15.37	26.77	42.14	28.47	29.39	100.00
	Boys	28.42	45.65	74.08	18.31	7.61	100.00
	Total	22.86	37.60	60.46	22.64	16.90	100.00
RURAL	Girls	14.55	36.83	51.37	17.67	30.95	100.00
	Boys	27.25	54.16	81.41	13.21	5.39	100.00
	Total	22.23	47.31	69.54	14.97	15.49	100.00
URBAN	Girls	16.38	14.41	30.80	41.73	27.47	100.00
	Boys	30.40	31.33	61.73	26.90	11.36	100.00
	Total	23.78	23.34	47.13	33.91	18.97	100.00

Source: LSMS 1998.

Table A19. Average Salary per Hour and Monthly by Age Groups

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Extreme Poor	Poor	Non-poor	Rural	Urban	Costa	Sierra	Oriente	National	
In sucres															
All	Average salary per hour 10-11	1,718.78	4,608.36	3,601.36	48,053.34	775.19	1,718.78	2,899.55	32,140.28	1,021.25	14,043.52	14,313.19	3,383.62	13,953.49	10,021.67
	Average salary per hour 12-14	2,780.84	5,563.10	4,139.29	1,775.95	2,747.01	2,939.21	4,149.90	3,121.05	3,215.66	4,218.83	4,767.68	2,814.09	2,500.75	3,745.72
	Average salary per hour 15-17	6,075.44	5,310.90	6,988.57	2,752.05	4,030.08	6,787.55	5,054.73	5,850.34	5,686.49	5,089.35	3,702.11	7,483.94	3,377.88	5,358.68
Not in school	Average salary per hour 10-11	1,489.84	NA	1,162.79	NA	NA	1,489.84	1,489.84	1,162.79	1,489.84	1,162.79	1,750.00	1,299.85	NA	1,427.85
	Average salary per hour 12-14	2,516.84	2,204.18	5,958.86	1,560.69	2,561.14	2,515.63	2,390.44	4,776.14	3,474.76	2,456.57	5,007.41	2,401.03	1,834.48	3,076.54
	Average salary per hour 15-17	7,749.76	5,933.78	9,506.70	2,601.36	2,178.61	8,576.62	6,300.11	6,896.22	6,754.05	6,183.68	2,786.75	9,798.53	4,547.87	6,494.55
In school	Average salary per hour 10-11	1,816.60	4,608.36	3,579.83	48,053.34	775.19	1,816.60	3,042.56	34,361.43	884.75	14,354.55	14,842.31	3,770.87	13,953.49	10,829.92
	Average salary per hour 12-14	3,211.35	7,973.58	2,714.17	1,797.49	2,813.69	3,569.52	5,881.83	2,359.83	2,899.11	5,030.16	4,693.46	3,475.83	3,046.45	4,242.19
	Average salary per hour 15-17	2,208.83	4,172.47	4,046.45	2,855.47	6,090.09	2,204.94	3,054.72	4,683.31	3,150.73	4,068.53	4,584.00	2,293.92	1,184.25	3,774.88
In sucres															
All	Average monthly salary 10-11	30,888.47	68,473.74	111,347.50	345,889.30	5,188.21	29,140.51	58,012.52	180,267.80	10,857.68	290,955.40	179,669.50	32,925.76	2,230.02	91,774.71
	Average monthly salary 12-14	99,285.60	133,828.80	181,466.60	53,582.88	142,618.10	124,743.80	111,327.20	134,731.60	85,574.09	191,779.00	134,471.50	112,729.00	71,313.04	119,261.70
	Average monthly salary 15-17	510,434.60	733,561.10	718,539.80	262,002.00	403,681.30	561,318.40	578,693.50	518,469.50	503,739.10	615,321.70	340,386.00	831,461.30	203,147.10	552,386.90
Not in school	Average monthly salary 10-11	43,700.45	NA	112,816.90	NA	NA	49,599.91	39,977.56	78,786.88	38,227.19	114,428.60	29,655.72	65,417.96	NA	44,951.55
	Average monthly salary 12-14	175,026.50	179,922.50	383,571.40	99,846.52	321,197.00	203,844.30	171,345.70	382,782.80	169,515.80	400,747.70	255,382.70	198,716.40	154,714.00	212,508.70
	Average monthly salary 15-17	624,527.30	1,016,183.00	1,302,209.00	386,188.20	384,693.80	693,583.40	765,566.70	932,147.20	720,594.90	1,015,105.00	308,930.80	1,317,019.00	311,483.80	813,161.70
In school	Average monthly salary 10-11	28,563.42	69,885.47	111,285.30	353,990.60	5,188.21	25,374.71	59,788.00	183,829.50	8,002.74	295,019.40	191,048.00	30,358.95	2,463.27	95,498.58
	Average monthly salary 12-14	37,878.73	108,829.20	109,540.80	50,797.91	106,841.80	63,965.88	72,357.81	83,310.53	35,458.09	144,721.70	101,393.70	56,521.17	41,087.77	76,667.40
	Average monthly salary 15-17	195,613.30	268,620.90	280,289.10	216,275.00	414,732.30	173,738.80	251,449.90	287,688.40	133,607.50	376,552.60	366,530.70	144,196.00	29,804.94	271,379.70
In dollars															
All	Average monthly salary 10-11	5.67	12.57	20.44	63.51	0.95	5.35	10.65	33.10	1.99	53.42	32.99	6.05	0.41	16.85
	Average monthly salary 12-14	18.23	24.57	33.32	9.84	26.18	22.90	20.44	24.74	15.71	35.21	24.69	20.70	13.09	21.90
	Average monthly salary 15-17	93.72	134.68	131.92	48.10	74.12	103.06	106.25	95.19	92.49	112.97	62.50	152.66	37.30	101.42
Not in school	Average monthly salary 10-11	8.02	NA	20.71	NA	NA	9.11	7.34	14.47	7.02	21.01	5.44	12.01	NA	8.25
	Average monthly salary 12-14	32.13	33.03	70.42	18.33	58.97	37.43	31.46	70.28	31.12	73.58	46.89	36.48	28.41	39.02
	Average monthly salary 15-17	114.66	186.57	239.09	70.90	70.63	127.34	140.56	171.14	132.30	186.37	56.72	241.81	57.19	149.30
In school	Average monthly salary 10-11	5.24	12.83	20.43	64.99	0.95	4.66	10.98	33.75	1.47	54.17	35.08	5.57	0.45	17.53
	Average monthly salary 12-14	6.95	19.98	20.11	9.33	19.62	11.74	13.28	15.30	6.51	26.57	18.62	10.38	7.54	14.08
	Average monthly salary 15-17	35.91	49.32	51.46	39.71	76.15	31.90	46.17	52.82	24.53	69.14	67.30	26.47	5.47	49.83

Source: LSMS 98.

Table A20. Average Hours Worked per Week

	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	Extreme Poor	Poor	Non-poor	Rural	Urban	Costa	Sierra	Oriente	National
All workers														
10-11	20.0	23.1	27.3	24.8	25.1	19.2	22.9	22.9	20.3	29.0	26.5	21.2	13.4	22.8
12-14	31.1	29.5	27.2	27.7	32.0	31.2	30.2	28.6	28.7	31.9	29.8	30.1	25.9	29.7
15-17	39.3	37.9	38.0	38.0	41.7	38.7	39.1	38.4	36.7	41.4	39.2	38.5	36.3	38.8
Working and in the school														
10-11	17.8	23.1	25.7	24.3	25.1	17.0	22.1	21.6	19.1	28.4	26.5	19.4	12.9	21.9
12-14	26.1	26.1	23.4	26.6	26.5	25.1	26.0	25.3	24.2	28.5	29.2	23.1	21.3	25.8
15-17	36.1	31.7	32.7	34.4	33.8	34.8	34.9	32.6	30.1	36.2	37.3	28.7	22.2	33.6
Working and not in school														
10-11	31.8	20.1	64.5	50.0	NA	31.1	30.8	60.1	32.5	55.2	26.3	44.0	18.7	34.5
12-14	37.3	35.7	37.8	46.1	59.2	39.0	36.6	44.7	36.2	46.8	31.9	40.8	38.4	38.2
15-17	40.5	41.7	45.0	47.5	55.4	40.1	41.4	48.8	40.5	50.2	41.4	45.4	45.2	43.6
Only who has a salary														
10-11	34.4	31.2	50.6	29.9	24.0	34.4	38.2	32.3	28.5	40.5	41.7	29.4	6.0	36.8
12-14	43.5	38.5	39.3	35.0	48.6	43.4	40.8	40.7	38.5	42.8	39.8	42.2	34.6	40.8
15-17	47.8	44.1	45.9	49.0	54.6	45.9	45.7	49.9	44.7	49.5	46.9	48.2	40.6	47.3
Doesn't have a salary														
10-11	18.3	20.9	18.4	23.6	25.2	17.1	19.6	21.3	19.7	21.2	21.5	20.0	13.5	20.0
12-14	27.0	23.5	21.2	25.1	20.8	26.3	25.7	22.3	26.0	20.1	23.9	25.3	23.5	24.7
15-17	31.4	29.3	24.9	27.3	29.3	32.0	30.3	27.0	30.6	24.4	29.4	27.3	34.3	28.7
Working and school														
With salary														
10-11	30.9	31.2	50.3	29.9	24.0	30.9	37.8	30.7	24.4	40.2	42.3	25.3	6.0	36.0
12-14	37.5	34.2	35.6	33.6	42.9	37.1	36.0	36.4	29.5	40.1	39.0	32.2	20.7	36.2
15-17	46.3	39.7	42.3	46.3	46.6	42.7	42.6	45.4	38.4	46.4	45.6	41.1	26.9	43.8
Without salary														
10-11	16.6	20.9	16.5	22.8	25.2	15.5	18.7	20.1	18.7	20.4	21.1	18.6	12.9	19.1
12-14	23.7	21.6	19.3	24.2	17.5	22.1	22.7	20.9	23.3	19.6	23.7	21.1	21.5	22.2
15-17	23.7	22.2	23.0	26.6	26.3	25.8	23.5	25.2	25.8	23.2	28.3	20.5	20.3	24.6
Working and not in school														
With salary														
10-11	42.6	NA	54.0	NA	NA	42.6	42.6	54.0	42.6	54.0	28.0	51.5	NA	44.8
12-14	47.2	44.6	44.1	48.7	64.5	47.7	45.8	50.0	45.9	48.7	42.5	48.5	51.5	47.0
15-17	48.4	46.6	49.0	52.9	61.8	47.1	47.6	54.0	47.3	52.9	48.2	51.4	48.0	49.8
Without salary														
10-11	29.0	20.1	72.0	50.0	NA	27.7	28.1	62.6	30.4	56.0	26.0	41.1	18.7	31.7
12-14	32.1	27.7	30.1	44.2	50.0	33.4	31.1	35.5	31.6	31.6	24.6	34.8	31.1	31.6
15-17	33.8	34.2	30.9	32.1	40.2	33.9	33.7	34.7	34.2	31.5	31.1	35.1	43.8	33.9

Source: LSMS 98.

Table A21. Summary of Total Central Government Expenditures (Real 1995 Sucres)

	1995	1996	1997	1998	1999*
TOTAL CENTRAL GOVERNMENT EXPENDITURES FOR SOCIAL SECTORS (EXCLUDING BONO SOLIDARIO)	2,106,871.3	2,283,103.1	1,990,249.6	2,114,872.2	1,946,935.4
TOTAL CENTRAL GOVERNMENT EXPENDITURES FOR BONO SOLIDARIO	-	-	-	-	560,925.3
TOTAL CENTRAL GOVERNMENT EXPENDITURES FOR OTHER SOCIAL PROGRAMS (CONAMU/CONSEJOS)	-	-	-	-	11,487.3
TOTAL CENTRAL GOVERNMENT EXPENDITURES	10,838,026.8	10,366,213.5	11,908,251.5	11,568,899.6	13,893,644.1
TOTAL CENTRAL GOVERNMENT EXPENDITURES (EXCLUDING DEBT)	6,229,524.8	6,366,404.3	6,062,110.5	3,027,930.9	6,616,912.9
PAYMENTS ON INTERNAL AND EXTERNAL DEBT + AMORTIZATION	4,608,502.0	3,999,809.2	5,846,140.9	4,270,484.3	7,276,731.2
GROSS DOMESTIC PRODUCT	46,005,438.0	60,726,745.0	79,040,013.0	105,894,895.0	139,606,534.8
TOTAL GOVERNMENT EXPENDITURES AS A PERCENT OF GDP	23.56%	22.09%	24.55%	23.75%	34.67%
TOTAL CENTRAL GOVERNMENT EXPENDITURES (EXCLUDING DEBT) AS A PERCENT OF GDP	13.54%	13.57%	12.50%	6.22%	16.51%
PAYMENTS ON INTERNAL AND EXTERNAL DEBT + AMORTIZATION (AS REFLECTED IN MOF DATABASE) AS A PERCENT OF GDP	10.02%	8.53%	12.05%	8.77%	18.16%

*1999 Expenditure data represents "Codificado" as of July 1999

Calculations: World Bank

Source: Subsecretaría de Presupuestos y Contabilidad, Ministry of Finance

Table A22. Social Sectors as a percentage of GDP

SECTOR	1995	1996	1997	1998	1999*
EDUCATION	3.11%	3.18%	2.85%	3.18%	3.06%
SOCIAL WELFARE	0.37%	0.60%	0.27%	0.19%	0.77%
TRABAJO	0.04%	0.05%	0.05%	0.05%	0.05%
SALUD	1.06%	1.03%	0.93%	0.92%	0.97%
BONO SOLIDARIO	-	-	-	-	1.40%
OTHER SOCIAL PROGRAMS (CONAMU/CONSEJOS)	-	-	-	-	0.03%
TOTAL SOCIAL SECTOR SPENDING AS A PERCENT OF GDP	4.58%	4.87%	4.10%	4.34%	6.29%

*1999 Expenditure data represents "Codificado" as of July 1999

Calculations: World Bank

Source: Subsecretaría de Presupuestos y Contabilidad, Ministry of Finance

Table A23. Central Government Expenditures in Social Sectors and Additional Programs in 1999 (Millions of Real 1995 Sucre)

SECTOR	1995	1996	1997	1998	1999*
EDUCACION	1,429,697	1,494,139	1,384,731	1,550,419	1,228,090
SOCIAL WELFARE	172,346	279,356	130,762	93,292	310,550
TRABAJO	17,907	24,752	23,413	23,970	20,474
SALUD	486,921	484,856	451,343	447,191	387,822
BONO SOLIDARIO (INCLUYE COSTO SERVICIO TRANSACCION)	-	-	-	-	560,925
OTHER**	-	-	-	-	11,487
TOTAL	2,106,871	2,283,103	1,990,250	2,114,872	2,519,348
PIB (MILLIONS OF REAL 1995 SUCRE)	46,005,438	46,916,888	48,502,781	48,701,499	40,075,808
% OF PIB (IN REAL TERMS, 1995)	4.58%	4.87%	4.10%	4.34%	6.29%

*1999 Expenditure data represents "Codificado" as of July 1999

Calculations: World Bank

Source: Subsecretaría de Presupuestos y Contabilidad, Ministry of Finance

Table A24. Central Government Expenditures in Social Sectors - Personnel vs. Other Costs (Real 1995 Sucre)

	1995	1996	1997	1998	1999*
Other Costs	1,189,458,523,943.0	842,692,068,684.4	659,975,538,288.6	631,376,281,956.5	645,096,024,199.8
Personnel	917,412,750,023.0	1,440,410,991,915.9	1,330,274,023,789.5	1,483,495,924,380.9	1,301,839,375,528.5
Total	2,106,871,273,966.0	2,283,103,060,600.2	1,990,249,562,078.0	2,114,872,206,337.4	1,946,935,399,728.3

*1999 Expenditure data represents "Codificado" as of July 1999

Source: Subsecretaría de Presupuestos y Contabilidad, Ministry of Finance. Calculations: World Bank

Table A25. Central Government Expenditures in Social Sectors - Recurrent Costs vs. Capital Investment (Real 1995 Sucre)

	1995	1996	1997	1998	1999*
Recurring Costs	1,844,889,910,802.0	2,025,036,735,256.4	1,913,977,990,385.9	2,021,539,763,557.4	1,722,693,948,538.1
Capital Investment	261,981,363,164.0	258,066,325,343.8	76,271,571,692.2	93,332,442,780.0	224,241,451,190.2
Total	2,106,871,273,966.0	2,283,103,060,600.2	1,990,249,562,078.0	2,114,872,206,337.4	1,946,935,399,728.3

*1999 Expenditure data represents "Codificado" as of July 1999

Source: Subsecretaría de Presupuestos y Contabilidad, Ministry of Finance. Calculations: World Bank

Table A26. Central Government Expenditures in the Health Sector by Institution (Real 1995 Sucres)

INSTITUTION	1995	1996	1997	1998	1999*
MINISTERIO DE SALUD PUBLICA	445,828,309,739	442,565,008,570	427,913,511,810	420,746,550,255	372,304,657,601
SERVICIO NACIONAL DE ERRADICACION DE LA MALARIA Y CONTROL DE VECTORES (SNEM)	15,111,041,800	28,873,417,134	8,029,327,179	12,112,939,457	6,259,038,887
INSTITUTO NACIONAL DE HIGIENE Y MEDICINA TROPICAL LEOPOLDO IZQUIETA PEREZ (INH)	19,303,484,116	10,022,302,508	12,602,102,634	12,671,962,174	7,091,327,741
CENTRO ESTATAL DE MEDICAMENTOS E INSUMOS MEDICOS (CEMEIN)	6,678,386,000	3,395,095,553	2,797,627,797	1,659,104,807	2,166,845,750
TOTAL	486,921,221,655	484,855,823,764	451,342,569,420	447,190,556,693	387,821,869,979

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A27. Central Government Expenditures in Health by Activity (Real 1995 Sucres)

ACTIVITY	1995	1996	1997	1998	1999*
ADMINISTRACION GENERAL	18,717,512,439.0	50,223,591,738.8	16,541,577,244.6	20,765,609,355.9	54,292,189,385.6
ADMINISTRACION PROVINCIAL O REGIONAL	42,067,764,634.0	49,251,140,431.8	57,220,298,568.4	50,890,471,383.7	37,113,208,758.8
COORDINACION SECTORIAL	1,266,247,869.0	3,738,870,356.0	2,996,508,933.3	3,454,787,696.3	3,877,946,397.3
CAPACITACION Y ADIESTRAMIENTO		74,333,489.5	58,588,575.8	67,568,193.7	46,392,179.2
INVESTIGACIONES Y ESTUDIOS	9,439,372,182.0	5,132,652,378.0	5,847,099,085.2	5,783,053,846.8	3,666,122,790.3
CUIDADO MATERNO INFANTIL		172,455,103.0	137,313,657.0	142,817,246.1	4,414,028,853.5
SERVICIOS NORMATIVOS DE SALUD	30,496,751,507.0	16,955,027,079.1	19,024,552,364.6	18,310,349,081.1	11,744,521,613.2
PROGRAMA AMPLIADO DE IMMUNIZACIONES		6,390,239,352.3	624,162,387.4	2,919,893,552.7	4,159,357,836.6
PLANTA PROCESADORA DE ALIMENTOS		426,701,517.1	323,332,245.2	391,341,425.7	271,041,878.8
CONTROL Y VIGILANCIA DEL SIDA		95,087,636.3	71,341,515.9	56,349,518.3	44,730,374.0
CONTROL DEL DENGUE		3,896,077,738.6	2,761,664,669.4	2,129,802,647.6	1,345,809,530.5
MEDICINA PREVENTIVA	12,901,345,366.0	11,549,820,528.5	7,193,716,906.1	7,141,867,149.6	5,625,746,557.1
SERVICIOS GENERALES DE SALUD	359,598,274,958.0	330,685,956,245.2	332,132,628,338.4	329,412,688,776.7	256,913,913,022.0
PRODUCCION Y COMERCIALIZACION DE MEDICINAS E INSUMOS MEDICOS	9,921,765,700.0	4,855,759,316.4	4,336,056,891.0	3,468,781,117.1	3,100,756,147.6
CONTROL DE CALIDAD	2,512,187,000.0	1,408,110,853.7	2,073,728,038.1	2,255,175,701.4	1,206,104,654.4
TOTAL	486,921,221,655.0	484,855,823,764.3	451,342,569,420.1	447,190,556,692.7	387,821,869,978.8

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A28. Central Government Expenditures in the Health Sector by Personnel and Other Costs (Real 1995 Sucres)

	1995	1996	1997	1998	1999*
Other	127,590,142,562	126,131,200,682	108,313,097,237	134,590,550,539	148,735,540,501
Personnel	359,331,079,093	358,724,623,082	343,029,472,183	312,600,006,153	239,086,329,478
Total	486,921,221,655	484,855,823,764	451,342,569,420	447,190,556,693	387,821,869,979

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A29. Central Government Expenditures in the Health Sector by Personnel and Other Costs (Percentage Sharing of Total Health Expenditures)

	1995	1996	1997	1998	1999*
Other	26.20%	26.01%	24.00%	30.10%	38.35%
Personnel	73.80%	73.99%	76.00%	69.90%	61.65%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A30. Central Government Expenditures in the Health Sector by Recurrent and Capital Costs (Real 1995 Sucres)

	1995	1996	1997	1998	1999*
Recurring Costs	419,570,694,760	439,119,258,116	436,596,317,187	412,099,719,616	323,015,736,935
Capital Investment	67,350,526,895	45,736,565,648	14,746,252,233	35,090,837,076	64,806,133,043
Total	486,921,221,655	484,855,823,764	451,342,569,420	447,190,556,693	387,821,869,979

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A31. Central Government Expenditures in the Health Sector by Recurrent and Capital Costs (Percentage Sharing of Total Health Expenditures)

	1995	1996	1997	1998	1999*
Recurring Costs	86.17%	90.57%	96.73%	92.15%	83.29%
Capital Investment	13.83%	9.43%	3.27%	7.85%	16.71%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A32. Central Government Expenditures in the Health Sector by Province (Real 1995 Sucres)

PROVINCE	1995	1996	1997	1998	1999*
Azuay	20,648,780,237	19,571,607,553	20,418,552,898	19,308,899,739	15,300,747,434
Bolívar	7,937,752,762	7,438,102,803	7,202,868,534	6,798,923,459	5,403,283,882
Canar	8,927,140,558	8,600,986,025	9,434,741,538	8,056,047,741	6,550,613,470
Carchi	6,307,293,000	6,290,507,761	6,280,819,570	6,008,492,836	4,675,701,609
Cotopaxi	10,283,081,000	9,900,041,302	10,489,833,630	10,460,573,565	8,148,729,643
Chimborazo	14,570,157,000	14,586,140,444	15,084,703,975	14,213,187,864	12,412,585,841
El Oro	17,621,089,458	19,159,993,271	18,756,355,559	18,606,130,118	13,727,333,585
Esmeraldas	11,405,084,777	11,194,757,782	12,957,096,512	12,327,662,666	9,152,306,105
Guayas	110,217,536,594	114,262,780,803	99,285,592,223	98,380,938,132	71,173,707,245
Imbabura	13,389,686,236	13,043,266,547	12,980,636,056	13,297,859,399	10,184,988,109
Loja	18,241,979,303	18,792,072,422	19,382,144,816	18,447,767,277	14,584,748,606
Los Rios	12,324,957,471	10,959,695,085	11,668,378,696	11,205,084,965	8,717,629,117
Manabi	34,812,885,387	34,743,320,711	34,027,061,134	36,744,851,375	27,787,532,785
Morona Santiago	6,469,420,000	6,718,770,780	7,436,014,919	7,209,970,108	5,671,028,911
Napo	6,710,923,000	6,828,434,579	6,175,003,647	6,505,563,124	4,859,194,936
Pastaza	3,175,283,713	3,133,812,629	2,907,763,964	3,140,725,690	2,405,858,234
Pichincha	103,553,256,239	96,554,187,223	99,002,261,792	95,911,478,440	74,698,051,065
Tungurahua	11,658,867,061	12,052,527,009	13,175,586,839	12,578,537,286	10,505,004,349
Zamora Chinchipe	5,116,308,252	5,210,103,773	4,614,432,526	5,041,179,926	3,783,485,720
Galapagos	2,032,736,000	2,186,682,975	2,155,955,996	2,231,844,334	1,767,829,722
Sucumbios	2,287,701,329	2,584,575,532	3,527,693,076	2,720,893,040	2,158,101,301
Not province specific	59,229,302,278	61,043,456,756	34,379,071,519	37,993,945,610	74,153,408,310
TOTAL	486,921,221,655	484,855,823,764	451,342,569,420	447,190,556,693	387,821,869,979

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A33. Central Government Expenditures in the Health Sector by Province (Percentage Sharing of Total Health Spending)

PROVINCE	1995	1996	1997	1998	1999*
Azuay	4.83%	4.62%	4.90%	4.72%	4.88%
Bolívar	1.86%	1.76%	1.73%	1.66%	1.72%
Canar	2.09%	2.03%	2.26%	1.97%	2.09%
Carchi	1.47%	1.48%	1.51%	1.47%	1.49%
Cotopaxi	2.40%	2.34%	2.52%	2.56%	2.60%
Chimborazo	3.41%	3.44%	3.62%	3.47%	3.96%
El Oro	4.12%	4.52%	4.50%	4.55%	4.38%
Esmeraldas	2.67%	2.64%	3.11%	3.01%	2.92%
Guayas	25.77%	26.96%	23.81%	24.04%	22.69%
Imbabura	3.13%	3.08%	3.11%	3.25%	3.25%
Loja	4.27%	4.43%	4.65%	4.51%	4.65%
Los Rios	2.88%	2.59%	2.80%	2.74%	2.78%
Manabi	8.14%	8.20%	8.16%	8.98%	8.86%
Morona Santiago	1.51%	1.59%	1.78%	1.76%	1.81%
Napo	1.57%	1.61%	1.48%	1.59%	1.55%
Pastaza	0.74%	0.74%	0.70%	0.77%	0.77%
Pichincha	24.21%	22.78%	23.74%	23.44%	23.81%
Tungurahua	2.73%	2.84%	3.16%	3.07%	3.35%
Zamora Chinchipe	1.20%	1.23%	1.11%	1.23%	1.21%
Galapagos	0.48%	0.52%	0.52%	0.55%	0.56%
Sucumbios	0.53%	0.61%	0.85%	0.66%	0.69%
TOTAL	100.00%	100.00%	100.00%	100.00%	100.00%

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A34. Central Government Expenditures in Education by Institution (Real 1995 Sucres)

INSTITUTION	1995	1996	1997	1998	1999*
MINISTERIO DE EDUCACION Y CULTURA	1,380,721,836,594	1,467,465,273,653	1,359,256,297,870	1,521,773,561,188	1,185,713,636,735
INSTITUTO NACIONAL DE PATRIMONIO CULTURAL	3,060,143,450	1,630,162,285	3,896,692,409	3,134,629,759	2,100,357,862
MUSEO ECUATORIANO DE CIENCIAS NATURALES	230,492,722	265,434,108	198,986,106	166,786,166	112,405,084
CONJUNTO NACIONAL DE DANZA	156,998,867	179,196,541	156,938,866	134,639,356	93,832,137
SISTEMA NACIONAL DE ARCHIVOS Y ARCHIVO NACIONAL	164,891,013	207,458,097	176,301,924	182,702,969	139,080,659
SISTEMA NACIONAL DE BIBLIOTECAS	117,994,962	78,508,086	84,851,357	99,994,154	45,578,357
CONSEJO NACIONAL DE CULTURA	467,617,688	499,310,118	494,364,614	335,303,564	250,346,639
CONSEJO NACIONAL DE DEPORTES	1,389,571,012	2,362,952,641	2,441,980,036	1,577,511,555	288,775,742
DIRECCION NACIONAL DE CONSTRUCCIONES ESCOLARES (DINACE)	24,330,611,329	11,875,565,929	10,360,932,297	10,958,979,447	24,750,832,765
DIRECCION NACIONAL DE DEPORTES Y RECREACION (DINADER)	19,057,118,507	9,575,105,804	7,664,027,901	12,055,181,247	2,133,186,517
SECRETARIA NACIONAL DE CIENCIA Y TECNOLOGIA (SENACYT)	-	-	-	-	12,461,637,313
TOTAL	1,429,697,276,144	1,494,138,967,261	1,384,731,373,381	1,550,419,289,405	1,228,089,669,809

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A35. Central Government Expenditures in Education by Personnel and Other Costs (Real 1995 Sucres)

EXPENSE	1995	1996	1997	1998	1999*
Other Costs	902,598,603,562	450,854,444,108	433,852,423,740	416,086,271,493	194,951,410,400
Personnel	527,098,672,582	1,043,284,523,154	950,878,949,641	1,134,333,017,912	1,033,138,259,409
Total	1,429,697,276,144	1,494,138,967,261	1,384,731,373,381	1,550,419,289,405	1,228,089,669,809

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A36. Non-personnel Expenditures as a Percentage of Total Education Expenditures

EXPENSE	1995	1996	1997	1998	1999*
NON-PERSONNEL EXPENDITURES	**	450,854,444,108	433,852,423,740	416,086,271,493	194,951,410,400
TOTAL EDUCATION EXPENDITURES	**	1,494,138,967,261	1,384,731,373,381	1,550,419,289,405	1,228,089,669,809
NON-PERSONNEL EXPENDITURES AS A PERCENTAGE OF TOTAL EDUCATION EXPENDITURES		30.17%	31.33%	26.84%	15.87%

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A37. Central Government Expenditures in Education by Personnel and Other Costs as a Percentage of Total Education Expenditures

EXPENSE	1995	1996	1997	1998	1999*
Other Costs	63.1%	30.2%	31.3%	26.8%	15.9%
Personnel	36.9%	69.8%	68.7%	73.2%	84.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A38. Central Government Expenditures in Education by Recurrent and Capital Investment (Real 1995 Sucres)

	1995	1996	1997	1998	1999*
Recurring Costs	1,316,837,933,988	1,378,987,727,403	1,342,149,092,222	1,500,322,936,372	1,153,343,346,571
Capital Investment	112,859,342,156	115,151,239,859	42,582,281,159	50,096,353,032	74,746,323,238
Total	1,429,697,276,144	1,494,138,967,261	1,384,731,373,381	1,550,419,289,405	1,228,089,669,809

Note: In 1995, Personnel expenses are significantly lower than in the following years. This is because prior to 1996, the Ministry of Finance made transfers directly to colleges and other educational institutions which included payments for salaries in such institutions. Therefore, in 1995, total Personnel expenses in the Ministry of Education appear to be lower than those in subsequent years.

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A39. Central Government Expenditures in Education by Recurrent and Capital Investment (Percentage Sharing).

	1995	1996	1997	1998	1999*
Recurring Costs	92.11%	92.29%	96.92%	96.77%	93.91%
Capital Investment	7.89%	7.71%	3.08%	3.23%	6.09%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

Note: In 1995, Personnel expenses are significantly lower than in the following years. This is because prior to 1996, the Ministry of Finance made transfers directly to colleges and other educational institutions which included payments for salaries in such institutions. Therefore, in 1995, total Personnel expenses in the Ministry of Education appear to be lower than those in subsequent years.

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A40. Central Government Expenditures in Education by Activity (Real 1995 Sucres)

LEVEL	ACTIVITY	1995	1996	1997	1998	1999*
ADMINISTRATION AND PLANNING		65860039018	58,060,675,417	47,463,691,407	47,491,268,141	31,732,404,070
	GENERAL ADMINISTRATION	45678145495	41,546,241,967	38,256,409,359	40,987,290,168	27,924,775,655
	SECTORIAL COORDINATION	19907264736	16,257,171,787	8,921,604,766	6,276,784,262	3,618,346,832
	PROGRAMMING AND PLANNING	274628787	257,261,663	285,677,281	227,193,711	189,281,584
PRIMARY EDUCATION		504,773,187,817	539,123,741,936	481,825,613,808	595,930,681,876	532,039,176,587
	BASIC HISPANIC EDUCATION	484,837,714,934	515,871,058,505	459,166,443,399	566,330,464,217	505,007,545,562
	BASIC BILINGUAL EDUCATION	19,856,007,883	23,252,683,430	22,659,170,409	29,600,217,659	27,031,631,026
	DIDACTIC MATERIAL PRODUCTION	79,465,000	-	-	-	-
SECONDARY EDUCATION	493,273,503,004	567,085,625,909	477,637,000,140	544,309,826,355	522,242,217,480	
TOTAL PRIMARY AND SECONDARY EDUCATION	998,046,690,821	1,106,209,367,845	959,462,613,947	1,140,240,508,231	1,054,281,394,067	
POST SECONDARY EDUCATION	IPED (Instituto Pedagógico)	-	-	-	-	-
	ITS (Instituto Tecnico Superior)	-	-	-	-	-
OTHER		29,369,614,742	14,964,562,853	14,266,747,919	13,865,709,948	43,516,877,875
	ILLITERATE CAMPAIGNS	8,113,374,742	7,205,019,735	8,107,792,069	6,412,722,593	21,604,474,851
	EDUCATION INFRASTRUCTURE	21,256,240,000	7,759,543,118	6,158,955,850	7,452,987,355	21,912,403,025
HIGHER EDUCATION		319,613,969,382	304,131,660,755	347,589,658,987	327,972,788,621	78,063,569,847
	HIGHER EDUCATION	319,613,969,382	304,131,660,755	347,589,658,987	327,972,788,621	78,063,569,847
BENEFITS ALL		16,806,962,181	10,772,700,392	15,948,661,121	20,849,014,464	20,495,423,949
	SCIENTIFIC AND TECHNOLOGICAL DEVELOP	-	-	-	-	12,461,637,313
	LIBRARY	-	-	-	-	39,958,820
	ARTISTIC AND CULTURAL ACTIVITIES DEVE	3,542,206,130	3,827,341,925	3,555,853,057	3,042,335,332	3,187,549,475
	CONSERVATION OF CULTURAL HERITAGE	3,094,143,450	1,630,162,285	3,896,692,409	3,134,629,759	2,100,357,862
	MUSEUMS ADMINISTRATION	230,492,722	265,434,108	198,986,106	166,786,166	112,405,084
	CULTURAL DIFFUSION AND DEVELOPMENT	3,694,906,274	3,569,468,938	3,182,773,984	4,342,733,350	1,956,223,036
	SPORTS DIFFUSION AND DEVELOPMENT	6,045,213,605	1,480,293,136	5,114,355,565	10,162,529,858	637,292,359
	URBAN ADEQUACY	200,000,000	-	-	-	-
	TOTAL	1,429,697,276,144	1,494,138,967,261	1,384,731,373,381	1,550,419,289,405	1,228,089,669,809

* Expenditure data for 1999 reflects "Código" budget as of July 6, 1999

Source: Ministry of Finance

Table A41. Central Government Expenditures in Education as a Percent of GDP (Real 1995 Sucres)

LEVEL	1995	1996	1997	1998	1999*
CENTRAL GOVERNMENT EXPENDITURES IN EDUCATION	1,429,697,276,144	1,494,138,967,261	1,384,731,373,381	1,550,419,289,405	1,228,089,669,809
GDP (REAL 1995 SUCRE)	46,005,438,000,000	46,916,887,879,195	48,502,780,722,272	48,701,498,614,263	40,075,808,268,649
REAL SPENDING IN EDUCATION AS A PERCENT OF GDP	3.11%	3.18%	2.85%	3.18%	3.06%

Table A42. Central Government Expenditures in Education as a percent of Non-Debt Spending (Real 1995 Sucres)

LEVEL	1995	1996	1997	1998	1999*
CENTRAL GOVERNMENT EXPENDITURES IN EDUCATION	1,429,697,276,144	1,494,138,967,261	1,384,731,373,381	1,550,419,289,405	1,228,089,669,809
TOTAL GOVERNMENT NON-DEBT SPENDING (REAL 1995 SUCRE)	6,229,524,817,479	6,366,404,348,175	6,062,110,537,232	7,298,415,253,747	6,616,912,854,028
REAL SPENDING IN EDUCATION AS A PERCENT OF GDP	22.95%	23.47%	22.84%	21.24%	18.56%

Table A43. Per Student Spending (Real 1995 Sucres)

	1995	1996	1997	1998
Pre-Primary and Primary	263,801	275,328	235,618	291,990
Secondary	626,546	703,496	533,249	597,111

Table A44. Per Student Spending (Real Terms at Average 1995 Exchange Rate**)

	1995	1996	1997	1998
Pre-Primary and Primary	102.867	107.362	91.877	113.859
Secondary	244.316	274.322	207.936	232.838

* Expenditure data for 1999 reflects "Código" budget as of July 6, 1999

**AVERAGE 1995 EXCHANGE RATE SUCRE/SUS 2,364.49

Source: Ministry of Finance

Table A45. Central Government Expenditures in Education by Province (Real 1995 Sucres)

PROVINCE	1995	1996	1997	1998	1999*
Azuay	79,945,274,406	79,244,648,488	80,882,833,286	97,752,699,061	63,722,928,372
Bolivar	35,535,189,861	33,505,951,641	32,823,352,466	38,068,109,763	29,462,505,225
Canar	25,650,489,476	26,525,062,511	24,506,156,938	28,263,333,023	26,482,476,097
Carchi	22,548,216,635	22,602,248,889	21,093,362,977	24,619,489,961	21,959,294,323
Cotopaxi	36,547,651,567	37,068,648,847	36,511,414,966	43,664,761,296	37,057,699,894
Chimborazo	65,593,030,847	68,949,593,536	68,349,111,216	77,743,217,488	60,396,888,757
El Oro	70,684,336,823	69,393,622,281	66,908,345,611	75,605,136,651	59,335,346,921
Esmeraldas	61,921,457,530	65,049,864,507	60,291,881,704	67,332,233,463	52,966,188,055
Guayas	250,633,675,494	262,008,056,945	242,838,506,356	261,318,827,063	184,094,655,141
Imbabura	46,832,369,705	47,169,899,471	46,552,287,282	51,938,464,718	40,207,503,283
Loja	86,921,263,766	86,252,851,429	83,658,854,844	94,828,861,862	74,314,119,926
Los Rios	66,338,160,140	66,567,065,087	64,548,652,518	74,677,431,771	55,516,769,221
Manabi	124,146,177,060	129,102,366,763	123,873,489,176	137,334,503,092	107,304,407,907
Morona Santiago	16,390,909,062	17,905,541,346	16,349,679,786	19,477,413,102	18,524,609,495
Napo	21,360,700,702	19,087,570,304	18,531,004,978	21,215,181,004	20,336,526,887
Pastaza	12,243,870,999	11,591,290,903	10,650,142,751	12,526,476,302	11,786,309,182
Pichincha	243,445,252,953	245,739,038,948	245,727,223,646	264,638,813,213	179,168,622,159
Tungurahua	52,863,510,877	55,442,725,145	53,446,524,210	60,516,989,891	45,763,248,605
Zamora Chinchipe	14,154,364,586	13,566,254,009	12,889,650,444	15,224,959,110	14,542,802,513
Galapagos	3,492,515,396	5,136,380,517	4,368,064,449	6,252,533,509	7,814,190,325
Sucumbios	9,920,106,759	11,575,907,908	9,730,562,247	11,584,030,544	11,539,036,473
NOT PROVINCE SPEC	82,528,751,500	120,654,377,784	60,200,271,529	65,835,823,516	105,793,541,048
Total	1,429,697,276,144	1,494,138,967,261	1,384,731,373,381	1,550,419,289,405	1,228,089,669,809

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A46. Allocation of Central Government Expenditures in Education by Province (Percentage Sharing)

PROVINCE	1995	1996	1997	1998	1999*
Azuay	5.93%	5.77%	6.11%	6.58%	5.68%
Bolivar	2.64%	2.44%	2.48%	2.56%	2.63%
Canar	1.90%	1.93%	1.85%	1.90%	2.36%
Carchi	1.67%	1.65%	1.59%	1.66%	1.96%
Cotopaxi	2.71%	2.70%	2.76%	2.94%	3.30%
Chimborazo	4.87%	5.02%	5.16%	5.24%	5.38%
El Oro	5.25%	5.05%	5.05%	5.09%	5.29%
Esmeraldas	4.60%	4.74%	4.55%	4.54%	4.72%
Guayas	18.60%	19.08%	18.33%	17.60%	16.40%
Imbabura	3.48%	3.43%	3.51%	3.50%	3.58%
Loja	6.45%	6.28%	6.32%	6.39%	6.62%
Los Rios	4.92%	4.85%	4.87%	5.03%	4.95%
Manabi	9.22%	9.40%	9.35%	9.25%	9.56%
Morona Santiago	1.22%	1.30%	1.23%	1.31%	1.65%
Napo	1.59%	1.39%	1.40%	1.43%	1.81%
Pastaza	0.91%	0.84%	0.80%	0.84%	1.05%
Pichincha	18.07%	17.89%	18.55%	17.83%	15.96%
Tungurahua	3.92%	4.04%	4.04%	4.08%	4.08%
Zamora Chinchipe	1.05%	0.99%	0.97%	1.03%	1.30%
Galapagos	0.26%	0.37%	0.33%	0.42%	0.70%
Sucumbios	0.74%	0.84%	0.73%	0.78%	1.03%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A47. Central Government Expenditures in the Labor Sector by Institution (Real 1995 Sucres)

INSTITUTION	1995	1996	1997	1998	1999*
MINISTERIO DE TRABAJO Y RECURSOS HUMANOS	8,067,292,813	9,241,069,874	7,870,592,646	8,819,644,799	7,518,387,068
SERVICIO ECUATORIANO DE CAPACITACION PROFESIONAL (SECAP)	9,076,809,900	14,887,565,658	15,016,931,842	14,672,124,787	12,840,432,379
INSTITUTO NACIONAL DE EMPLEO (INEM)	730,647,400	623,138,975	525,770,238	478,263,438	115,496,826
UNIDAD EJECUTORA DEL PROGRAMA DE MICROEMPRESAS (UNEPROM)	31,947,000	-	-	-	-
TOTAL	17,906,697,113	24,751,774,507	23,413,294,725	23,970,033,024	20,474,316,273

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A48. Central Government Expenditures in the Labor Sector by Activity (Real 1995 Sucres)

ACTIVITY	1995	1996	1997	1998	1999*
ADMINISTRACION GENERAL	5,001,043,590	6,013,419,078	6,651,393,953	8,628,925,847	8,051,554,870
COORDINACION SECTORIAL	129,950,000	257,581,572	152,568,344	285,054,553	323,381,707
APOYO A LOS GOBIERNOS SECCIONALES		1,545,180,394	-	-	-
PROMOCION DEL EMPLEO Y DESARROLLO LABORAL	2,135,178,551	1,960,824,966	1,870,993,540	1,955,872,147	1,489,801,903
ADMINISTRACION Y MEDIACION LABORAL	2,288,772,214	2,295,438,373	2,255,942,131	2,366,856,594	1,871,156,172
FOMENTO A LA MICROEMPRESA	613,615,258	551,072,409	156,633,453	172,596,268	154,093,474
FORMACION PROFESIONAL	7,738,137,500	12,128,257,714	12,325,763,304	10,560,727,615	8,584,328,147
TOTAL	17,906,697,113	24,751,774,507	23,413,294,725	23,970,033,024	20,474,316,273

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A49. Central Government Expenditures in the Labor Sector by Personnel and Other Costs (Real 1995 Sucres)

	1995	1996	1997	1998	1999*
Other Costs	7,536,785,361	9,235,975,347	8,938,537,246	10,890,334,778	9,328,781,079
Personnel	10,369,911,752	15,515,799,159	14,474,757,479	13,079,698,245	11,145,535,194
Total	17,906,697,113	24,751,774,507	23,413,294,725	23,970,033,024	20,474,316,273

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A50. Central Government Expenditures in the Labor Sector by Personnel and Other Costs (Percentage Sharing)

	1995	1996	1997	1998	1999*
Other Costs	42.09%	37.31%	38.18%	45.43%	45.56%
Personnel	57.91%	62.69%	61.82%	54.57%	54.44%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A51. Central Government Expenditures in the labor Sector by Recurrent and Capital Investment (Real 1995 Sucres)

	1995	1996	1997	1998	1999*
RECURRENT	12,494,804,620	23,218,017,900	22,706,985,370	22,393,016,878	20,235,365,404
CAPITAL INVESTMENT	5,411,892,493	1,533,756,606	706,309,355	1,577,016,145	238,950,869
Total	17,906,697,113	24,751,774,507	23,413,294,725	23,970,033,024	20,474,316,273

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A52. Central Government Expenditures in the Labor Sector by Recurrent and Capital Investment (Percentage Sharing)

	1995	1996	1997	1998	1999*
RECURRENT	69.78%	93.80%	96.98%	93.42%	98.83%
CAPITAL INVESTMENT	30.22%	6.20%	3.02%	6.58%	1.17%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A53. Central Government Expenditures in Social Welfare by Institution (Real 1995 Sucres)

INSTITUTION	1995	1996	1997	1998	1999*
MINISTERIO DE BIENESTAR SOCIAL	171,311,088,874	279,356,495,068	130,762,324,553	93,292,327,216	300,282,564,402
CORPORACION NACIONAL DE APOYO A LAS UNIDADES POPULARES ECONOMICAS (CONAUPE)	1,034,990,180	0	0	0	0
CONSEJO NACIONAL DE LAS NACIONALIDADES Y PUEBLOS INDIGENAS DEL ECUADOR	0	0	0	0	9,406,919,451
CONCEJO NACIONAL DE DISCAPACIDADES	0	0	0	0	860,059,815
Total	172,346,079,054	279,356,495,068	130,762,324,553	93,292,327,216	310,549,543,668

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A54. Central Government Expenditures in Social Welfare by Personnel and Other Costs (Real 1995 Sucre)

	1995	1996	1997	1998	1999*
OTHER COSTS	151,732,992,458	256,470,448,548	108,871,480,066	69,809,125,146	292,080,292,220
PERSONNEL	20,613,086,596	22,886,046,520	21,890,844,487	23,483,202,071	18,469,251,448
Total	172,346,079,054	279,356,495,068	130,762,324,553	93,292,327,216	310,549,543,668

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A55. Central Government Expenditures in Social Welfare by Personnel and Other Costs (Percentage Distribution)

	1995	1996	1997	1998	1999*
OTHER COSTS	88.04%	91.81%	83.26%	74.83%	94.05%
PERSONNEL	11.96%	8.19%	16.74%	25.17%	5.95%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A56. Central Government Expenditures in Social Welfare by Personnel and Other Costs (Real 1995 Sucres)

	1995	1996	1997	1998	1999*
Recurrent	95,986,477,434	183,711,731,837	112,525,595,607	86,724,090,690	226,099,499,628
Capital Investment	76,359,601,620	95,644,763,231	18,236,728,945	6,568,236,526	84,450,044,040
Total	172,346,079,054	279,356,495,068	130,762,324,553	93,292,327,216	310,549,543,668

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A57. Central Government Expenditures in Social Welfare by Personnel and Other Costs (Percentage Sharing)

	1995	1996	1997	1998	1999*
Recurrent	55.69%	65.76%	86.05%	92.96%	72.81%
Capital Investment	44.31%	34.24%	13.95%	7.04%	27.19%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Table A58. Central Government Expenditures in Social Welfare by Province (Real 1995 Sucres)

PROVINCE	1995	1996	1997	1998	1999*
National	166,276,091,940	277,160,990,231	127,948,220,907	90,649,401,991	302,484,089,730
Azuay	176,210,000	80,333,413	77,434,967	57,819,606	35,157,746
Bolivar	7,034,000	5,982,938	5,465,153	4,095,906	2,556,005
Canar	575,115,963	396,487,688	861,808,485	475,784,840	3,009,952,818
Carchi	31,886,000	27,110,190	24,763,169	248,511,031	11,584,122
Cotopaxi	182,539,000	10,657,109	9,734,919	7,295,919	4,553,960
Chimborazo	76,341,000	66,894,722	61,103,430	64,190,658	385,634,666
El Oro	213,533,000	51,690,147	26,043,853	19,518,791	12,183,222
Esmeraldas	352,382,000	31,685,084	29,021,889	88,310,329	55,121,464
Guayas	508,564,637	194,308,972	288,173,094	304,324,153	231,673,259
Imbabura	163,262,167	108,105,969	175,807,159	196,094,379	202,201,408
Loja	686,616,167	414,403,242	404,300,607	576,912,238	3,745,227,016
Los Rios	111,772,000	105,347,568	89,708,652	81,480,485	47,219,493
Manabi	203,700,000	101,288,893	91,004,064	119,087,573	74,326,236
Morona Santiago	49,450,000	39,077,872	31,639,253	20,565,838	14,168,259
Napo	520,994,000	12,438,702	8,539,532	6,400,026	3,994,762
Pastaza	44,674,000	3,973,431	6,243,873	4,679,524	2,920,861
Pichincha	1,841,716,180	496,868,790	584,269,545	338,593,448	207,719,037
Tungurahua	240,485,000	37,887,051	29,027,872	21,755,305	14,575,027
Zamora Chinchipe	12,297,000	5,354,050	4,890,778	3,665,436	2,287,889
Sucumbios	71,415,000	5,609,005	5,123,351	3,839,740	2,396,685
Grand Total	172,346,079,054	279,356,495,068	130,762,324,553	93,292,327,216	310,549,543,668

* Expenditure data for 1999 reflects "Codificado" budget as of July 6, 1999

Source: Ministry of Finance

Annex 2: Methodology Used for Deriving Estimates of Poverty

Suhas A. Parandekar and Wladimir Brborich
November, 1999

This annex describes the methodology used to derive the poverty estimates presented in the main text. Poverty is estimated on the basis of a consumption aggregate for the household. A “food poverty line” was defined as the amount of expenditures needed to buy a food basket which would yield 2,300 kilocalories per person per day. The poverty line is derived from the food poverty line, based on the proportion of non-food expenditures reported by households on the margin of the food poverty line.

The LSMS questionnaire for 1998 was not identical to the LSMS questionnaire for 1995 – specifically, a number of extra items were added on to the food part of the questionnaire for 1998, and some changes were also made in relation to non-food expenditures. The strategy adopted for estimating poverty was to derive a food consumption basket on the basis of the 1998 questionnaire. This basket, priced in 1998 prices derived from the LSMS 1998 questionnaire provided the food poverty line for 1998. The same basket, priced in 1995 prices derived from the LSMS 1995 questionnaire provided the food poverty line for 1995. The computation of a poverty line for 1998 based on the food poverty line for 1998, was performed using the empirically determined Engel coefficient – a value of 54.3% of expenses on food. The corresponding coefficient for 1995 was 59.0% of expenses on food.

The following is a step-by-step account of the key steps in estimation of poverty:

Steps in Estimation of Poverty.

1. The first step was the creation of an aggregate for food consumption. Food items were selected from the 1998 questionnaire which were common with the food items in the 1995 questionnaire. Information was recorded about the fortnightly consumption of each food item in grams and the nominal expenditure in Sucres.
2. Information about consumption in grams was converted to calorific consumption based on calorific values provided by SIISE (Sistema Integrado de Indicadores del Sector Social) from Quito, Ecuador.
3. Consumption on non-food items was also recorded for each household in a manner which matched the non-food expenditures available from the 1995 LSMS data-set. Non-food consumption expenditure included the following items – a) educational expenditures, b) flow of services from ownership of durables, c) expenditure on electricity, energy for cooking and illumination, and trash removal d) imputed expenditures for water, d) imputed or actual household rent and f) miscellaneous non-food expenditures.
4. Nonfood expenditures were added to food expenditures to arrive at the consumption aggregate. The household per capita consumption aggregate was used as a variable to rank households from lowest consumption to highest consumption. Households belonging to the second and third quintiles were selected in order to define a representative basket which would yield 2,236 calories per person per day. The representative basket was

chosen by scaling down the actual basket of the second and third quintiles, which yielded 2,320 calories on average. Table 1 presents the calculation of the representative basket.

5. The representative basket presented as Table 1 was then priced for the six Region-Area combinations (Regions of Costa, Sierra and Oriente, Area of Urban and Rural). This resulted in a list of six food poverty lines, one for each Region-Area combination.
6. The six different food poverty lines were combined together to arrive at a national food poverty line, using Region-Area populations as weights. The consumption aggregate was then deflated for geographical price differences, using as an index the ratio of the Region-Area poverty lines to the National Poverty Line. Poverty estimates are based on this geographically deflated price aggregate. Geographic price differences in non-food items were not accounted for, and the sub-aggregate for imputed water expenditures was not deflated at all.
7. The ratio of food expenditures to non-food expenditures was calculated for a particular group of households. These household were those who spent on food expenditures the equivalent of the food poverty line. Since the food poverty line is one number, a band of + and - 25 % was taken around the marginal household. The logic of this approach is that households who are at this margin are only making essential non-food expenditures, and the value of non-food expenditures should be included in a poverty basket of goods. The Engel coefficient was 0.54 in 1998 and 0.59 in 1995. The higher Engel coefficient for 1998 can be explained on the basis of higher inflation for non-food items as compared to food items – a fact confirmed by an examination of price series data from INEC.
8. The food poverty line for 1998 was Sucres 67,152 per fortnight, and the poverty line was Sucres 126,535 per fortnight. In 1995, the food poverty line was Sucres 35,052 per fortnight, and the poverty line was Sucres 59,170 per fortnight.
9. The analysis carried out for 1998 was repeated as closely as possible for 1995, with the exception that instead of calculating a new food basket for 1995, the same food basket as the one used for 1998 was priced in the 6 Region-Area price combinations for 1995. Care was taken that differences in poverty measures did not come about due to differences in the components of aggregates used for the 2 survey years. However, as some components were imputed estimates of consumption, what was replicated was the methodology used for imputation rather than the regression specification themselves – these imputations were for rental of dwelling and imputation of water expenditures.
10. Future refinements of the poverty estimates need to measure the sensitivity of the conclusions to the assumptions which have been mentioned in this annex.

Table 1. Calculation of Representative Food Basket

FOODCO	NAME	GM RAW	CAL RAW	GM SCAL	CAL SCAL
301	acelga	3.22	0.60	3.10	0.58
302	ajo	4.96	6.55	4.78	6.31
303	alverja seca	5.82	18.08	5.61	17.42
304	alverja tierna	6.92	2.77	6.67	2.67
305	apio	1.87	27.00	1.80	0.26
306	cebolla blanca	14.07	5.24	13.56	5.05
307	cebolla paitena	27.39	16.88	26.39	16.27
308	chochos	1.62	2.21	1.56	2.13
309	choclos	21.72	12.21	20.93	11.77
310	col	20.19	3.22	19.46	3.10
311	coliflor	4.47	69.00	4.31	0.66
312	culantro y perejil	5.91	1.77	5.70	1.71
313	frejol seco	7.44	24.78	7.17	23.88
314	frejol tierno	7.95	3.68	7.66	3.55
315	haba seca	2.44	6.64	2.35	6.40
316	haba tierna	6.81	2.35	6.56	2.26
317	lechuga	9.26	0.85	8.92	0.82
318	lenteja	9.47	29.49	9.13	28.42
319	melloco	5.79	2.78	5.58	2.68
320	mote	3.43	4.12	3.31	3.97
321	papas	89.64	57.85	86.38	55.75
322	pepinillo	8.85	0.90	8.53	0.87
323	pimientos	2.53	0.56	2.44	0.54
324	rabano	1.43	0.24	1.38	0.23
325	remolacha	8.20	2.67	7.90	2.57
326	tomate rinon	24.61	5.27	23.72	5.08
327	vainita	1.03	0.31	0.99	0.30
328	yuca	40.73	39.16	39.25	37.74
329	zanahoria	18.99	7.21	18.30	6.95
330	aguacate	7.91	4.77	7.62	4.60
331	banano	67.73	43.89	65.27	42.30
332	limon	20.71	4.05	19.96	3.90
333	mandarina	1.84	0.56	1.77	0.54
334	manzana	9.67	4.73	9.32	4.56
335	maracuya	8.83	0.86	8.51	0.83
336	melon	1.55	0.24	1.49	0.23
337	mora	2.76	1.31	2.66	1.26
338	naranja	14.03	5.03	13.52	4.85
339	nanajilla	8.08	2.68	7.79	2.58
340	papaya	30.59	7.47	29.48	7.20
341	piña	12.88	4.25	12.41	4.10
342	platano maduro	61.46	45.99	59.23	44.32
343	platano verde	94.57	99.34	91.13	95.73
344	tomate de arbol	10.45	4.47	10.07	4.31
345	arroz	154.60	557.88	148.98	537.61
346	arroz de cebada	5.91	20.67	5.70	19.92
347	avena	9.03	35.01	8.70	33.74
348	fideos	20.96	74.37	20.20	71.67
349	galletas	2.20	9.50	2.12	9.15
350	harina	16.66	59.61	16.05	57.44
351	machica	5.04	18.66	4.86	17.89
352	maiz, morocho, cangui	7.89	7.31	7.60	7.04
353	pan	52.56	159.81	50.65	154.00
354	quinua	0.82	2.79	0.79	2.69
355	carne suave de res	15.91	21.28	15.33	20.51
357	otras carnes	5.28	8.48	5.09	8.17
358	visceras	0.81	1.21	0.78	1.17
359	embutidos	2.14	5.36	2.06	5.17
360	pollo entero o presas	25.06	37.60	24.15	36.23
361	memudencias de pollo	2.74	3.40	2.64	3.28
362	aceite vegetal	23.18	204.83	22.34	197.39
363	manteca vegetal	12.98	114.69	12.51	110.52
364	manteca de cerdo	2.20	18.83	2.12	18.15
365	leche liquida	91.63	51.58	88.30	49.71
366	leche en polvo	1.30	5.01	1.25	4.83
367	queso	13.47	42.64	12.98	41.09
368	margarina o mantequilla	2.39	16.42	2.30	15.82
369	huevos	21.39	29.13	20.61	28.07
370	pescado fresco	16.41	13.53	15.81	13.04
371	atun y sardinas	50.40	6.08	4.86	5.86
379	Sal	20.25	0.00	19.51	0.00
			2320.32		2236.00
	Scaling Factor	1.04			

Annex 3: Protecting the Poor in Ecuador: Priorities and Options for the Bono Solidario

Suhas D. Parandekar
November 15, 1999

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1. Introduction

1.1 Program Outline and Spending

The Government of Ecuador introduced an income transfer program for the poor in September 1998 called the *Bono de Solidaridad* (or *Bono Solidario* in brief). The program provides an approximate amount of 150,000 sucres per month to mothers from poor families and about 75,000 sucres per month to poor old aged people.¹ The amount provided to individual households is small – at the time of the inception of the program, it cost about 150,000 sucres just to meet the minimum calorific needs of one person for a month. Notwithstanding the small unit benefit amount, the *Bono Solidario* program is the flagship program in Ecuador for Social Protection. With approximately 1.3 million beneficiaries and a projected annual expenditure of US\$180 million, the program represents nearly 8% of Central Government non-debt spending and about 1.3% of Ecuador's GDP. The magnitude of the *Bono* can be gauged from the fact that all Central Government Health expenditures form only 5.9% of total non-debt spending.²

1.2 Political Economy

The *Bono* program is important not only in terms of magnitude, but also in the context of the political economy in Ecuador over the past couple of years. In the September of 1998, the Government of Ecuador abolished general subsidies for cooking gas and electricity. The energy subsidies of approximately US\$400 million per year constituted a big fiscal drain, and a number of studies had indicated the regressive nature of these subsidies in terms of the income distribution in Ecuador.³ The general subsidies had been in existence for a long time, and even though the rich benefited more from the subsidies because of the higher energy consumption of the rich, the subsidies provided relief to the lower income groups as well, and the move to abolish the subsidies was met with significant public protest. The *Bono* program was presented as the effort of the Government to protect the poor from the hardship associated with the increase in energy prices as well as general economic hardship. At the same time as the Government reduced politically popular expenditures on subsidies (from US\$400 million of general subsidies to US\$200 million of targeted subsidies), it granted politically popular cash transfers to more than one million Ecuadorians.

¹ The program also supports handicapped individuals, but the main focus is on poor mothers and the old aged. At the current exchange rate of 11,500 sucres to the U.S. Dollar, the Bono provides roughly \$13 per month for mothers, and \$6.50 per month for the aged.

² Source: Table 1: Social Sector Expenditures in Ecuador, 1999, in "*Ecuador Social Sector Review: Summary of Preliminary Findings*", dated August 9, prepared by the World Bank in collaboration with the Government of Ecuador.

³ See "*Ecuador: Energy Pricing, Poverty and Social Mitigation*", Report No. 12831-EC, UNDP and the World Bank, 1994; "*Ecuador Poverty Report*", The World Bank, 1996; "*Las Desigualdades de los subsidios: El Gas y La Electricidad en El Ecuador*", Documentos de Trabajo No. 2, SIISE, Gobierno del Ecuador, 1998.

1.3 Eligibility Criteria for Beneficiaries

The eligibility criteria for the *Bono* are fairly straightforward. The program is meant to be targeted to the poor, and amongst the poor, it seeks to reach the most disadvantaged – women without a steady income who need to take care of young children, as well as old aged persons who have no access to any income source. The Executive Decree Number 129 of the Government of Ecuador established the following eligibility criteria for receiving the *Bono*.

A. Mothers

- Need to have at least one child 18 years of age
- Family income of not more than Sucre 1 million
- Do not have fixed salary income, nor does spouse have such fixed salary income

B. Old Aged

- Persons older than 65 years of age
- Family Income of not more than Sucre 1 million
- Do not have fixed salary income

C. Disabled

- Persons between 18 and 65 years of age
- Disability of at least 70 %

Potential Recipients are self-selected into the program based on the approval of their application form (see Appendix 1). At the inception of the program, there was no use of any external validation of data on the application form, other than the fact that the local church handled applications. However, given evidence of widespread leakage to non-eligible persons, the government has recently experimented with various instruments for validation. These instruments include criteria such as a high amount of electrical energy consumed, the ownership of a car, or possession of a bank account as evidence to disqualify recipients. It is important to note that the income eligibility is based on self-reported income, and that eligibility does not have a reference to the family size or the number of children of the mother – in other words, a beneficiary with 7 children below the age threshold would receive the same amount of 150,000 Sucre per month as a mother with only one child.

1.4 Sources of Data for Analysis of the Bono Solidario

The analysis presented in this document is based primarily on the *Encuesta Condiciones de Vida – Cuarta Ronda (ECV-IV)*, conducted by the *Instituto Nacional de Estadísticas y Censos (INEC)*, the statistical agency of the Government of Ecuador. The *ECV-IV* data used for the analysis is a high quality Household Survey data which forms part of the worldwide World Bank supported Living Standard Measurement Surveys (LSMS). Data analyzed here is from the Second Trimester of the *ECV-IV*, carried out between the months of January and April 1999. The analysis of the *ECV-IV* data has been carried out by the World Bank in collaboration with INEC,

the *Consejo Nacional de Modernización del Estado* (CONAM), and *Sistema Integrado de Indicadores Sociales del Ecuador* (SIISE).

2. Targeting and Coverage

2.1 Methodology of Analysis

Sampling: The effective sample size used in the analysis is 2466 individuals (1973 mothers and 493 old aged persons) who belonged to 2054 households. Amongst the 2466 individuals, 846 were recipients of the *Bono*. The probability proportional sampling approach utilized by the *Bono* allows us to use expansion factors which link the sample to the Population Census of Ecuador. Utilization of the expansion factor enables us to extrapolate the sample numbers to population totals – the total estimated number of 1,283,940 recipients closely matches the actual number of recipients according to the database compiled by BANRED, S.A. the Bank which is entrusted with the actual payment of the *Bono* throughout Ecuador.

Assumptions: The *ECV-IV* collected data about the employment and income status of individuals, and it also determined whether or not individuals were beneficiaries of the *Bono Solidario*. The two main objects of the analysis are, therefore: a) Whether an individual was eligible to receive the *Bono* according to the conditions of eligibility laid out by the Government; b) Whether an individual was a recipient of the *Bono*. Also, the analysis presented here examines eligibility and receipt of the *Bono* according to the poverty status of the individual, and the assumptions underlying poverty status are outlined below.

Assumptions regarding Eligibility: The demographic conditions for eligibility laid out in the official decree are straightforward to implement in the statistical analysis of the *ECV-IV* data, as is the condition about family labor income. However, the requirement that mothers and their spouses do not have a fixed income source is somewhat difficult to apply. One option, to use membership in the official social security system was not possible to use due to the presence of a number of individuals who are not covered by the social security system due to tax evasion on the part of employers, as well as the absence of an explicit question in the household survey which asks about membership in the social security system. Given the data constraints and the ambiguity of the term “fixed income”, eligibility for purpose of analysis was determined on the basis of the occupation of the individuals. The table in Appendix 2 denotes the occupations selected as qualifying occupations on the basis of the occupations not being sources of “fixed income”.

Assumptions regarding Poverty Lines: Detailed calculations were performed for calculating poverty lines utilizing the 1998 round of the LSMS data, the *ECV-III*. Due to significant price differences across geographic regions in Ecuador, an adjustment was made for such spatial price differentials. Also, given a high rate of inflation in the 1998-99 period, the inflation series provided by INEC was used to adjust for inflation. The poverty line calculations for 1998 were performed on the basis of a detailed consumption aggregate.⁴ As the consumption

⁴ The poverty lines and indigent lines are defined on a per capita basis. However, it is of interest to note that 36% of the population falls below the indigent line, a cut-off which corresponds to a total family income of 960,000 sucres, very nearly 1 million Sucres, the eligibility cut-off for the *Bono*.

aggregate was not available for the *ECV-IV* for 1999, the consumption aggregate was substituted by an aggregate which represents total monetary income of the household. Annex 3 provides a) a table of the poverty lines used in the analysis b) Income quartile cut-offs, based on total income of the family and c) Income quartile cut-offs, based on per capita income of the family.

2.2 Problems of Targeting and Coverage

The analysis suggests that approximately 1.45 million mothers and old aged persons were eligible to receive the *Bono*, with about 1.28 million actually receiving it. Just on the basis of these two numbers, one could derive a coverage rate of 88%. However, a more detailed analysis suggests that many who receive the *Bono* would not meet the eligibility criteria laid down by the Government, and that many eligible individuals do not receive the *Bono*.

Table 2.1 Targeting and Coverage: Absolute Numbers

	Eligible	Not Eligible	Total
Bono Recipients	590,955	692,985	1,283,940
Bono Non-Recipients	856,442	1,417,795	2,274,237
Total	1,447,397	2,110,780	3,558,177

The absolute numbers are best understood in terms of the percentage of error due to undercoverage (i.e., how many of the eligible population is not covered, sometimes called a Type I Error, after the statistical error of rejecting a true null hypothesis), and the error of leakage (i.e., how many of ineligible individuals receive the *Bono*, also called a Type II Error, after the statistical error of accepting a false null hypothesis).

Table 2.2 Targeting and Coverage: The Two Errors

	Eligible	Not Eligible	Total
Bono Recipients		Type II Error 53.97%	100.00%
Bono Non-Recipients	Type I Error 59.17%		
TOTAL	100.00%		

The program has different benefits and eligibility conditions for mothers and old aged people (see Section 1.3 above), and it is useful to examine the two groups separately to examine cost implications of the errors.⁵ If it were possible to clean up the system completely, eliminating all leakages, only an extra \$2 million would be needed to cover all the eligible persons. Of

⁵ The figures presented in Table 2.3 below do not take account of administrative costs of the program, and the dollar amounts are calculated with an exchange rate of 10,000 Sucres to the U.S. Dollar.

course, it would neither be feasible nor desirable to meet such a zero-error scenario. The numbers in Table 2.3 do, however, provide an upper bound regarding the gains which are possible by improving the accuracy in targeting and coverage.

Table 2.3 Targeting and Coverage: Cost Implications

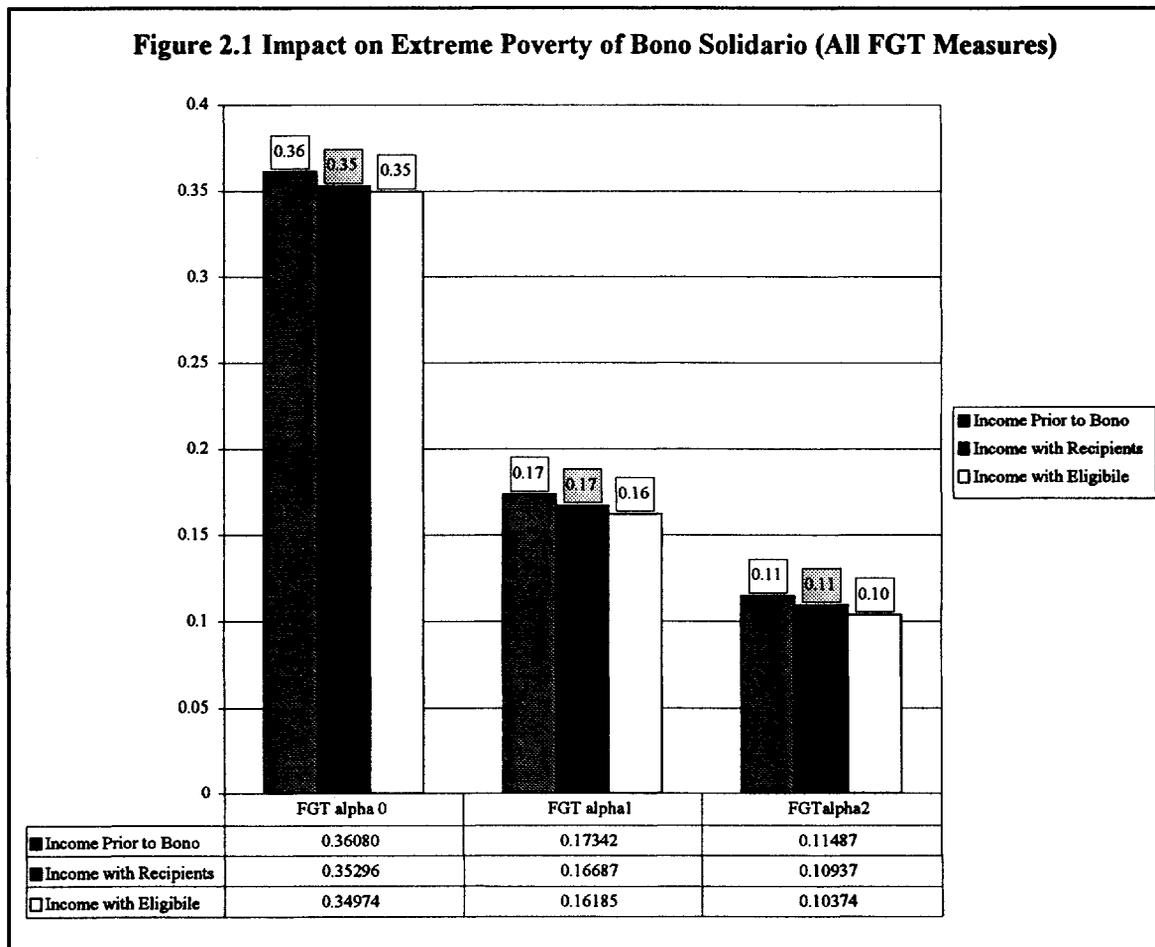
Options	Beneficiary Group	Total Population of Mothers and Old People	Number Receiving the Bono	Number Eligible	Type II Error (Non Eligible Covered)	Type I Error (Eligible Not Covered)
Current Program	Mothers	2,798,650	1,071,410	931,444	33.81%	52.76%
	Old Aged	759,527	212,530	515,953	25.27%	70.74%
	Total	3,558,177	1,283,940	1,447,397	32.83%	59.17%
	Beneficiary Group	Unit Amount of Benefit	Total Cost (not including administrative costs) US\$ Million	Cost of Type II Error US\$ Million	Cost of Type I Error US\$ Million	Net Cost of Errors (Leakage – Extra Needed)
	Mothers	150,000 Suces/month	192.85	113.66	88.46	25.19
	Old Aged	75,000 Suces/month	19.13	5.54	32.85	-27.31
	Total	-	211.98	119.20	121.31	-2.11

Source : Author's calculations using data from the *Encuesta Condiciones de Vida - Cuarta Ronda*

2.3 Impact on Poverty

The task of reducing the twin problems of improper targeting and low coverage would be extremely difficult, especially as individuals who have been receiving the *Bono* for almost one year now would probably like to hold on to their eligibility, and amplifying coverage has its own attendant problems of increasing the fiscal burden and introducing new leakages. In view of the difficulty in bringing about an improvement, it would be useful to determine the value added to the program due to the improvements.

Figure 2.1 below shows the value added of the program on poverty measures for the mothers and old aged individuals who make up the population of potential beneficiaries for the Bono.



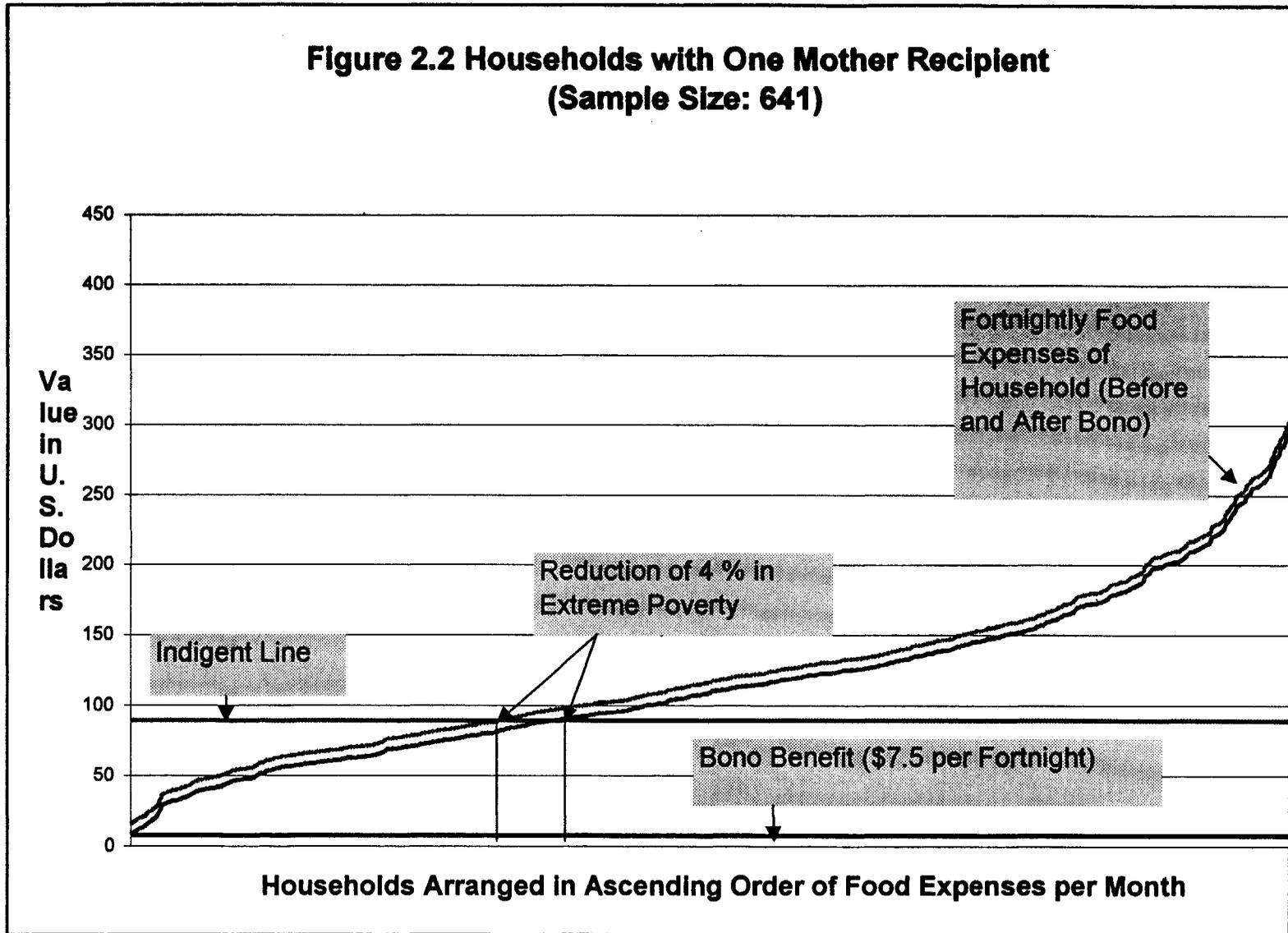
Three sets of Foster-Greer-Thorbecke measures are used here, with FGT ($\alpha=0$) corresponding to the Headcount Index, FGT ($\alpha=1$) being the simple measure of the Extreme Poverty Gap, and FGT ($\alpha=2$) being the most appropriate measure here because this measure is

most sensitive to the tail of the income distribution.⁶ Each poverty measure is computed separately for three cases- a) With Income Distribution as it is prior to the *Bono*, b) With the Income distribution being what it would be after the *Bono* is distributed according to the current program, with Type I and Type II Errors unchanged, and c) With the Income Distribution being what it would be if all eligible individuals received the *Bono* and there were no leakage problems.

The primary reason for the *Bono* not having a major impact on poverty is the fact that the program is spread too thinly across the population. However, there do exist some extremely poor households for whom the *Bono* transfer is a significant amount. Figures 2.2 shows the food expenses of households with a mother receiving the *Bono* in comparison with the amount of benefit of the *Bono*, and an 'extreme poverty line', or the amount of food expenses required for an average family to meet the minimum calorific requirements. The graph shows that the *Bono* is a very small portion of an average recipient family's food budget. However, if the full amount of the *Bono* were used for food expenses, the proportion of households with food expenses below the 'extreme poverty line' would go down by 4 percentage points. The *Bono* clearly has incentive related advantages as well. Eligibility for the *Bono* does not require an individual to be unemployed, and the small benefit implies negligible work disincentive effects.

⁶ See Appendix 4 for further details about the use of FGT measures for Poverty. FGT measures used here are for extreme poverty, defined as the expenditures required to meet basic minimum calorific energy requirements.

**Figure 2.2 Households with One Mother Recipient
(Sample Size: 641)**



3. Improving Coverage

3.1 Costs of improving coverage of existing program.

In sheer numbers, the problem of undercoverage seems immense - nearly 857,000 eligible non-recipients, of whom 491,000 are mothers and 365,000 are old aged individuals. The 57% - 43% break-up between eligible uncovered mothers and old aged individuals is in contrasts with the 64% - 36% break-up between eligible mothers and old-aged individuals. The evidence suggests that the problem of undercoverage is higher for the old-aged as compared to mothers. Table 3.1 below details the distribution of the uncovered across urban and rural areas and across income groups. The table shows that 59% of the eligible uncovered are in rural areas, as opposed to 56% of all eligible individuals, and 43% of actual recipients who live in rural areas. Clearly, the problem of undercoverage is more acute in rural areas, though a significant number of urban eligibles remain uncovered. The table also indicates that most of the uncovered eligible are the indigent poor. Amongst the nearly 1.1 million indigent eligibles, 58.54% or nearly 630,000 individuals do not receive the *Bono*. The table also indicates that at current benefit rates, it would cost about US\$90 million to cover all the indigent individuals presently not being covered. The amount of US\$90 million is approximately an increment of 42% to the existing spending of US\$212 million (see Table 2.3 above). Large amounts of resources are needed to cover only the indigent among the uncovered because of the high rate of indigence - nearly 3/4ths of the eligible uncovered are indigent, as shown in Table 3.1.

3.2 Benefits of improving coverage of existing program.

An insight into the link between poverty and the eligibility conditions is provided by econometric modeling using a probit regression with a poverty index on the LHS and the set of eligibility conditions on the RHS. If the eligibility conditions are important correlates of poverty, increasing the unit amount of the benefit within the existing program may be a useful approach to meet poverty reduction objectives. On the other hand, if the eligibility conditions are poor correlates of poverty, improving coverage may not yield the desired benefits even with significant increases in the per unit benefit.

Table 3.2 presents results from the probit regressions - the dependent variable is the probability of being a member of the group of "Indigent Poor" or those who lack sufficient income to meet the minimum calorific requirements. Results are presented separately for four groups made up of subsamples by urban and rural and old aged individuals and mothers. Note that indigent poverty is defined here with careful attention to per capita income and the size of the family whereas the eligibility conditions for income just concern total family labor income, without regard to family size.

Table 3.1 Improving Coverage

Beneficiary Group	Number of Eligible not Covered	Eligible Uncovered Indigent	Eligible Uncovered Non-indigent Poor	Eligible Uncovered Non-poor	Eligible Uncovered Rural	Eligible Uncovered Urban
Mothers	491,454	361,427	104,512	25,515	296,177	195,277
Old Aged	364,988	268,005	62,529	34,454	212,533	152,455
Total	856,442	629,432	167,041	59,969	508,710	347,732
Beneficiary Group	Cost of Reaching ALL uncovered (US\$ Million)	Cost of Reaching Uncovered Indigent (US\$ Million)	Cost of Reaching Uncovered Non-indigent Poor (US\$ Million)	Cost of Reaching Uncovered Non-poor (US\$ Million)	Cost of Reaching Uncovered Rural (US\$ Million)	Cost of Reaching Uncovered Urban (US\$ Million)
Mothers	88.46	65.06	18.81	4.59	53.31	35.15
Old Aged	32.85	24.12	5.63	3.10	19.13	13.72
Total	121.31	89.18	24.44	7.69	72.44	48.87

Table 3.2 Probit Regression Results: Eligibility and Indigent Poverty

	MOTHERS		OLD AGED	
Eligibility Criteria	Rural	Urban	Rural	Urban
	Dependent Variable : Probability of being an Indigent Poor Marginal Effects (Evaluated at Mean)			
Family income below 1,000,000 sucres	67.40%	50.39%	63.54%	65.91%
Does not have fixed employment	22.75%	8.77%	5.38%	16.94%
Has child below 18 years of age	22.48%	5.53%	-	-
Spouse does not have fixed employment	14.67%	12.98%	-	-

The results from Table 3.2 show that the eligibility conditions bear a strong relationship to the status of being indigent. Family Income would clearly be expected to have a strong impact, and is not a perfect predictor merely because indigent status is defined according to per capita income rather than family income. Interestingly, employment eligibility for mothers has a much stronger impact in the rural areas, as does the presence of a child below the age of 18 years of age. The probit regression results reported in Table 3.2 are preliminary, but do serve to indicate the usefulness of improving coverage of the existing program with a focus on the indigent poor.

4. Improving Targeting

The task of improving targeting is a very delicate task, even though significant cost savings may be gained from improved targeting. Public opinion has a strong role in the formulation and implementation of public policy in Ecuador. The government often has had to amend previously declared policy due to general strikes and blockages, organized by groups which are not necessarily poor. Table 4.1 below presents an evaluation of the range across which targeting has proved to be feasible in Ecuador. The table shows that the Type II error rates vary from a low of 22.26% (Urban Old-Aged) to a high of 42.84% (Mothers Rural). The table shows that significant cost savings are possible if rural error rates are brought down to the rates for urban areas. The finding regarding greater targeting problems in rural areas matches the earlier finding that the problem of low coverage is more acute in rural areas. Lower coverage rates in rural areas can be explained by problems of higher transactions costs of supply as well as demand in rural areas. Higher targeting errors in rural areas can likewise be explained by a greater information asymmetry problem in rural areas, which has a potentially important policy implication.

The original design of the *Bono* involved local community organizations such as the Church and Non-governmental Organizations (NGOs) in the application process for the *Bono*. While involving the community must definitely have been one of the factors leading to public support of the *Bono*, local community involvement can potentially play a much bigger role in cleaning up the rolls. Given the information asymmetry problem of determining the eligibility of households, local community organizations can play a gatekeeping role in determining eligibility for the *Bono*. Such organizations would be very useful if they are given a particular cap on the number of *Bonos* to be made available for the community. In such a scheme, communities would be faced with a distinct trade-off between the *Bono* being received by a non-poor and a poor household, as every *Bono* to a non-poor household would mean one *Bono* less for a poor household.

The Government of Ecuador is currently considering various alternatives to help improve targeting. Some of these methods, such as disqualifying individuals who own cars or consume very high amounts of electricity, are straightforward, and would help to eliminate the most egregious errors of mis-targeting. The disparity between urban and rural targeting mistakes shown in Table 4.1 indicates the possibility that a strategy which works in the urban area may not work in rural areas. The table also indicates that about 25% of leakages to non-eligible individuals may be a floor on the improvement efforts, and would need to be considered as such in budgeting for improvements in targeting.

Table 4.1 Improving Targeting

Beneficiary Group	Number of Non-Eligible	Number of Non-Eligible Covered	Number of Non-Eligible Covered in Urban Areas	Type II Error Urban	Number of Non-Eligible Covered in Rural Areas	Type II Error Rural
Mothers	1,867,206	631,420	400,567	30.15%	230,853	42.84%
Old Aged	243,574	61,565	38,548	22.26%	23,017	32.68%
Total	2,110,780	692,985	439,115	29.24%	253,870	41.67%
Beneficiary Group	Cost of Leakage (US\$ Million)		Cost Savings if All Leakage Rates reduced to Rate for Urban Old Aged (22.26%) (US\$ Million)	Cost Savings if All Leakage Rates reduced to Rate for Urban (29.24%) (US\$ Million)	Cost of Program with Eligible Indigent Covered and Leakage Rate of 22.26% (US\$ Million)	Cost of Program with Eligible Indigent Covered and Leakage Rate of 29.24% (US\$ Million)
Mothers	72.10	-	38.82	15.37	219.09	242.54
Old Aged	3.47	-	0.66	0.22	42.59	43.03
Total	75.57	-	39.49	15.58	261.68	285.57

\$ 49.7 Million Additional as compared to Existing Program

\$73.59 Million Additional as compared to Existing Program

5. Increasing Transfers to the Extremely Poor

The last option considered in this paper is the option of refocusing the *Bono* entirely on the extremely poor. As the indigence rate (households with incomes below that necessary for minimum calorific intake) is as high as 36%, a focused approach would need to go beyond the indigent line. For purpose of this analysis, a cut-off of 500,000 sucres per month, or half the indigent line of 1 million sucres per month was used. This would bring the number of beneficiaries down from the current 1.3 million to about 645,000 beneficiaries. Maintaining the same relationship between the amount per beneficiary for old aged and mothers (1:2), and maintaining the total expenditure constant for the *Bono* program at US\$212 million, the per unit benefits could be raised from US\$15 to US\$36 for mothers, and from US\$7.50 to US\$18 for the old aged. If it would not be politically expedient to eliminate those who are receiving the *Bono* but are not extremely poor, one option would be maintain the existing rolls at the current rate of benefits - the cost implications are indicated in the table. Even with a major increase in the amount of transfers to the extreme poor, there would not be a sizable impact on poverty measures (FGT-2 would go down to 0.097). Preliminary analysis indicates that the reduction in poverty would not be sharpened much even if a per capita transfer scheme were used within the same budget envelope, so that larger families would receive more benefits. In conclusion, the results indicate that some restructuring of the *Bono* may be needed to make it more effective as a transfer mechanism for the poorest families.

Table 5.1 Increasing the Amount for the Sub-Indigent

Options	Beneficiary Group	Total Population of Mothers and Old People	Number of Eligible Sub-indigent* Beneficiaries	Number of Existing Non Sub-Indigent Beneficiaries	1/3 rd Reduction in Leakage to Non Sub-Indigent Beneficiaries		
Current Program	Mothers	2,798,650	338,210	860,902	573,935		
	Old Aged	759,527	306,787	113,147	75,431		
	Total	3,558,177	644,997	974,049	649,366		
	Beneficiary Group	Unit Amount of Benefit	Cost (not including administrative costs) US\$ Million (A)	Cost (not including administrative costs) US\$ Million (B)	Cost (not including administrative costs) US\$ Million (C)	Total Cost A+B	Total Cost A+C
		US\$36 per month for sub-indigent					
		US\$15 per month for others as before					
	Mothers	US\$36 per month for sub-indigent US\$15 per month for others as before	146.11	154.96	103.31	301.07	249.42
	Old Aged	US\$18 per month for sub-indigent	66.27	10.18	6.79	76.45	73.05
	Total	US\$7.50 per month for others as before	212.37	165.15	110.10	377.52	322.47

* The Sub-Indigent line is taken to be a total family income of 500,000 sures, the point which is roughly half of the Indigent line.

6. Economic Analysis of a Beca Escolar

Another option for the Bono is to introduce a complementary *Beca Escolar* for families with children aged 6 to 15 in primary school. This section provides an economic analysis of a *Beca Escolar* program. It is made of three main components: (i) A description of the methodology used to derive the unit benefit amount, based on a computation of direct and indirect costs. (ii) An analysis of the potential impact of the *Beca Escolar* on poverty. (iii) A cost-benefit analysis, with the measured economic benefit being the increase in future earnings of children who will benefit from the *Beca Escolar*.

6.1 Valuation of the Beca Escolar. The unit cash transfer amount per beneficiary would need to provide an adequate financial incentive – if the amount is set too low, incentives needed to bring about the desired behavior may not be forthcoming. On the other hand, if the value of the cash transfers were set too high, it would constitute a needless financial burden on the government which could employ the additional resources in other priority areas.

A *Beca Escolar* would provide a stipend to mothers of primary school going children, conditional on the children attending at least 90% of classes. The *Beca* would be expected to improve the attendance of children already enrolled, and protect the continued enrollment of children who might otherwise drop out due to heightened financial stress on the family. The calculation of the value of a *Beca Escolar* is based on empirical estimates of the direct and indirect costs of primary schooling for the lowest quintile of the population.

Table 6.1 Direct Costs of Public Primary Schooling

Category	Monthly Expenditure
Transportation	937 sucres
Texts and Materials	5,011 sucres
Other	3,171 sucres
TOTAL	13, 120 sucres
Total in US Dollars	\$2.41

Source: Calculations from the *Encuesta Condiciones de Vida*, 1998

Table 6.2 Estimation of Indirect Costs of Schooling (US Dollar Equivalent)

Category	Decile D1		Decile D2	
		Sample Size		Sample Size
Median Hourly Wages in Ecuador				
Prime Age Adult Men (Ages 21 – 45)	0.24	96	0.38	137
Prime Age Adult Women (Ages 21 – 45)	0.23	92	0.34	76
Children				
Age 6 – 10	n.a.			
Age 11	n.a.		0.4	22
Age 12	0.1	66	7	31
Age 13	0.5	68	0.17	30
Age 14	0.7	70	0.9	30
Age 15	0.10	59	0.12	26
Age 12-15 (Only Working)	0.3	60	0.9	102
Age 12-15 (Working and In School)	0.9	28	0.16	40
Work/School Status of Girls		580		292
Working and In School	8 %		5 %	
Working and Not in School	7 %		5 %	
Not Working and In School	71 %		75 %	
Not Working and Not in School	14 %		15 %	
Work/School Status of Boys		597		312
Working and In School	16 %		18 %	
Working and Not in School	12 %		9 %	
Not Working and In School	62 %		63 %	
Not Working and Not in School	10 %		10 %	
Travel Time to School in minutes	19	357	14	161

Source: Calculations from the *Encuesta Condiciones de Vida*, 1998

In order to compute the indirect costs of schooling, we use the following assumptions:-

- Opportunity cost per hour = 6 to 7 cents
- Hours per day (school, travel and study) = 6 hours daily
- Effective attendance days required = 15 days per month

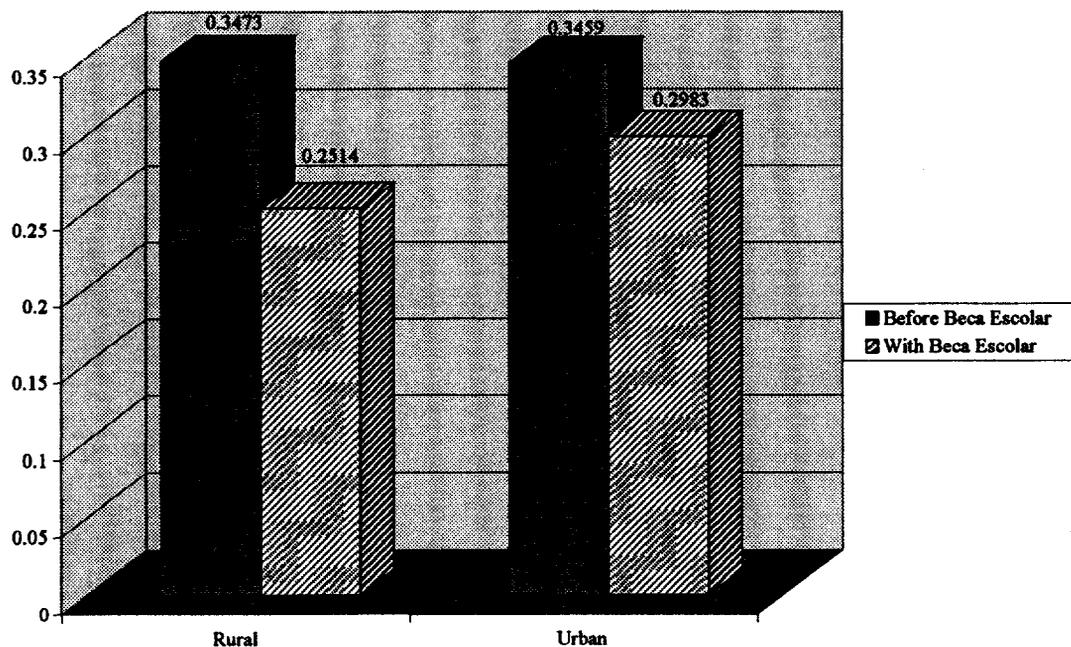
The opportunity cost assumption of 6 to 7 cents per hour is based on the difference in wages between children only working and children working while continuing schooling. The rationale is that the opportunity cost of children who gave up schooling in order to be able to work represents an estimate of the marginal value of the time spent at school. Other information presented in Table 6.2 provides contextual labor market data – for instance, the wage rates for adults show that the opportunity costs being used here for children’s time is about a fifth to a fourth of the adult wage rate. The monthly costs of schooling, including both direct and indirect costs, would thus be in the range from \$7.81 to \$8.71 per month.

6.2 Poverty Impact of a Beca Escolar. The primary objective of the *Beca* would be to protect the erosion of investment in human capital, with the ultimate impact on poverty coming through a higher level of educational attainment of beneficiaries. However, as an emergency

response targeted to the poorest households, the cash transfers would lead to an immediate increase in household income. While the unit benefit amount of \$5 per student is not large, the targeted nature of the subsidy should lead to some positive impact on the income situation of indigent households benefiting from the *Beca*.

The calculation of the immediate poverty impact of the *Beca* is based on the calculation of income of beneficiary households before and after the *Beca*.⁷ A poverty gap measure was calculated for pre-*Beca* income, which is based on the difference of per capita income of each household with the 20th percentile cut-off income, which in this case was \$34.25 per month. The post-*Beca* income includes the incremental value of the cash transfers, which varies on the basis of the number of children in beneficiary households. The poverty gap measures are presented in the graph below, which show a reduction in the rural areas from 0.35 to 0.25, and for the urban areas from 0.35 to 0.30 (See figure 6.1).

Figure 6.1. Impact of the Beca on Poverty Gap Amongst Beneficiaries



⁷ In comparing the before and after program income of beneficiary households, the loss of income due to program participation is ignored. Such loss of income would result from the loss of income from child labor of children who would cut back on their labor force activities due to increased school attendance. Given the low levels of child wages and the high proportion of working children who continue attending school, the omission of such foregone income would not lead to a drastic change in the conclusions.

6.3 Modeling the Impact of a Beca Escolar. Beneficiaries of the *Beca* would be expected to get to a higher level of grade attainment. As a result of higher educational attainment, beneficiaries would experience increased earnings through their lifetime. Linking the future of an 8-year child to the earnings increment which she would be able to capture after 20 years, as a result of a \$5 per month scholarship today, is fraught with great uncertainty. Estimation is based on the premise that the parameters of the model are random variables with distributions based on empirically available data as well as plausible conjectures. The explicit accounting of assumptions in this manner makes it tractable to model the complex interactions of interventions to the ultimate future benefits.

The modeling strategy has essentially two elements. The first element consists of a set of variables, which are postulated to take on a specified probability distribution. Information about program intervention (such as the impact the program would have on the attendance rate) is said to be a set of “assumption variables” modeled as random variables. These assumption variables are then used to arrive at a final “forecast variable”, which in the present case is the Net Present Value of introducing the *Beca* for a three year period. The second element of the model is a computer simulation which randomly samples different values for each of the assumption variables to arrive at a value for the forecast variable. The random sampling is repeated for a large number of trials, thus giving a chance for a great number of possible parameter values to be used, leading to a simulated distribution of the forecast variable. In this case, the sample size of trials was 10,000. The model has five inter-linked parts in a series which begins from immediate interventions to the ultimate flow of benefits.

Part A: The Immediate Intervention Variables

The following assumptions are made regarding the impact of the *Beca*⁸:

- The attendance rate in primary school, currently at 80%, would go up by a number which is a uniformly distributed random variable, centered on an increase of 10 percentage points.
- The primary school enrollment rate among children age 6-15 in first income quintile, currently at 76% would go up by a number which is a uniformly distributed random variable, centered on an increase of 2 percentage points.
- The average age at first time enrollment in first grade, currently at 7.15 years, would go down by a number which is a uniformly distributed random variable, centered on a mean decrease of 0.37 years.

Part B: Intermediate Variables

The following assumptions are made regarding intermediate variables:

- The repetition rate in primary school, currently at 16.5 %, would go down by a number which is based on a response variable of repetition to improved attendance. Computation is

⁸ Empirical estimates are based on data from the *Encuesta de Condiciones de Vida*, 1998, using data from the first quintile defined by per capita income.

based on the conjecture that an average increase in attendance of 10% would lead to a reduction in repetition by a uniformly distributed random variable, centered on a reduction of 5 percentage points.

- The drop-out rate in the first quintile is currently 11.39% - the drop-out is expected to fall by another uniformly distributed random variable, with an average expected reduction in the drop-out rate to 6.34 %, which is currently the drop-out rate for the second quintile.

Part C: Response Variables

The immediate interventions of the *Beca* (Increase in Enrollment and Attendance and Reduction in Age at First Enrollment), acting directly as well as indirectly through the intermediate variables (Reduction in Repetition and Drop-Out) have an effect on the grade attainment of beneficiary students. The responsiveness of grade attainment to each of the intervention variables is modeled as a series of random variables. Values of the response variables are based on plausible conjectures, using a wide distribution to account for many possible values. The plausible conjectures were built using a set of thought experiments. For instance, if more children attend class more regularly, they would be expected to repeat classes less often and face a lower drop-out probability. If, in a class of 40 students, instead of eight students who never showed up in class for a single day in the school year, four showed up for all days of class, thus increasing attendance by 10 percentage points, it would seem plausible that two of the eight erstwhile absentee students would actually be promoted to the next grade rather than 0 in the case of the absence of a policy intervention to increase attendance.

Part D: Final Variables

The grade attainment is expected to increase by a level which turns out, through the model interactions, to have a mean value of 0.16 grades (roughly 1/6th of a grade) for each year that the *Beca Escolar* program is active. With 6 grades constituting primary school, this estimated increment is intuitively reasonable as well, so that a *Beca* program which would last through all the six years of primary school would result only in a year's average increase in the grade attainment level.

Part E: Calculation of Net Present Value

The Net Present Value (NPV) of one extra year of primary schooling was computed using data about the increment in earnings due to primary schooling. The increment in the total earnings stream through the working lifetime was discounted to the present value. The present value of the direct and indirect costs of schooling were then netted out to give a total value of approximately \$800 of lifetime increase in earnings for every additional grade of primary school attained. The simulation model itself uses a Weibull distribution for the expected increment in earnings, centered on a mean of \$844.39.

The Net Present Value of one extra grade of attainment for one person is then multiplied by the increment in grade attainment due to the program of each beneficiary, in turn multiplied by (i) the number of beneficiaries and (ii) the number of program years (3) to get at the value of the

Present Value of Benefits. The amount of U.S.\$95 million is then deducted from the value of Benefits to get to the Net Present Value of the *Beca*.⁹

The following table presents the static view of the mean values used in the model :

Table 6.3. Static View of Computer Simulation Model for Cost-Benefit Analysis

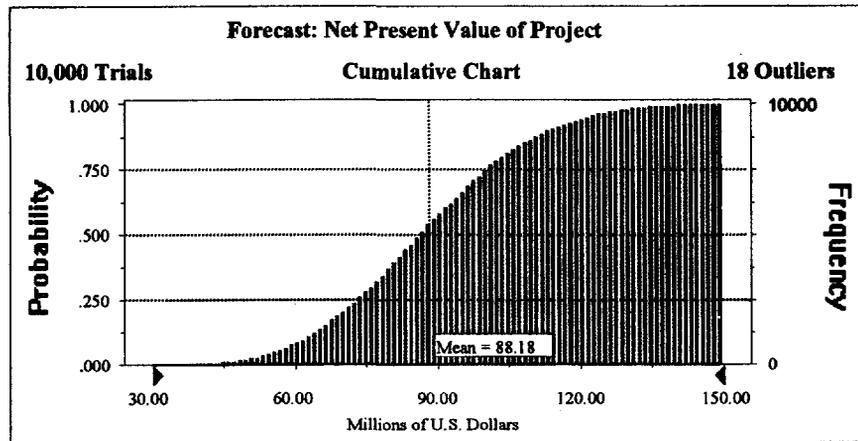
Domago SSIC Cost-Benefit Analysis				
PART A: Immediate Intervention Variables		Part C: Response Variables		
		Response: Repetition to Attendance	0.3	
	Education Conditions	Response: Attainment to Attendance	0.17	
		Response: Attainment to Repetition	0.5	
1	Attendance Rate	Response: Attainment to Enrollment	0.1	
	Old Attendance Rate	80%	Response: Attainment to Age at Enrollment	0.2
	New Attendance Rate	90%	Response: Attainment to Dropout	0.5
	Change in Attendance Rate	0.10		
		PART D: Final Variables		
2	Enrollment Rate	Grade Attainment of Primary Schooling		
	Old Enrollment Rate	76%	Current Grade Attainment	4.93
	New Enrollment Rate	78%	Effect of Improved Attendance	0.017
	Change in Enrollment Rate	0.02	Effect of Improved Enrollment	0.002
			Effect of Reduced Repetition	0.025
3	Age at Enrollment		Effect of Reduced Drop-Out	0.02525
	Old Average Age at Enrollment	7.15	Effect of Reduced Age at 1st Enrollment	0.074
	New Average Age at Enrollment	6.78	New Average Duration	5.07325
	Reduction in Age at Enrollment	0.37		
		PART E: Calculation of Net Present Value		
			NPV of 1 Extra Year of Schooling	810.69
PART B: Intermediate Variables				
		Number of Children Covered per Year	502,904	
5	Repetition	Number of Program Years	3	
	Old Repetition Rate	16.50%	Total Increase in Flow of Earnings	175.21
	New Repetition Rate	11.50%	(Millions of Dollars)	
	Reduction in Repetition Rate	0.05	Costs of Program (millions of Dollars per year)	95
The Net Present Value of US\$80 million is only one of the outcomes of the 10,000				
6	Drop-out			
	Old Drop-Out Rate (Q1 Rate)	11.39%		
	New Dropout Rate	6.34%	Net Present Value of Program	80.21
	Reduction in Dropout Rate	0.05	(In Millions of US Dollars)	

The Net Present Value of US\$80 million is only one of the outcomes of the 10,000 trials in the simulation. A key output of the model is the range of Net Present Values, which is best seen in the form of a cumulative probability distribution. Figure 6.2 presents this distribution,

⁹ The cost of the second year of the program is not discounted to the first year, so the Net Present Value is an approximation. Secondly, the Net Present Value of an extra year of schooling is calculated for those leaving school, and the same figure is used as an approximation of the Net Present value of the extra year of schooling of children now in school. Note also that the NPV of one extra year of schooling for one person is modeled as a random variable.

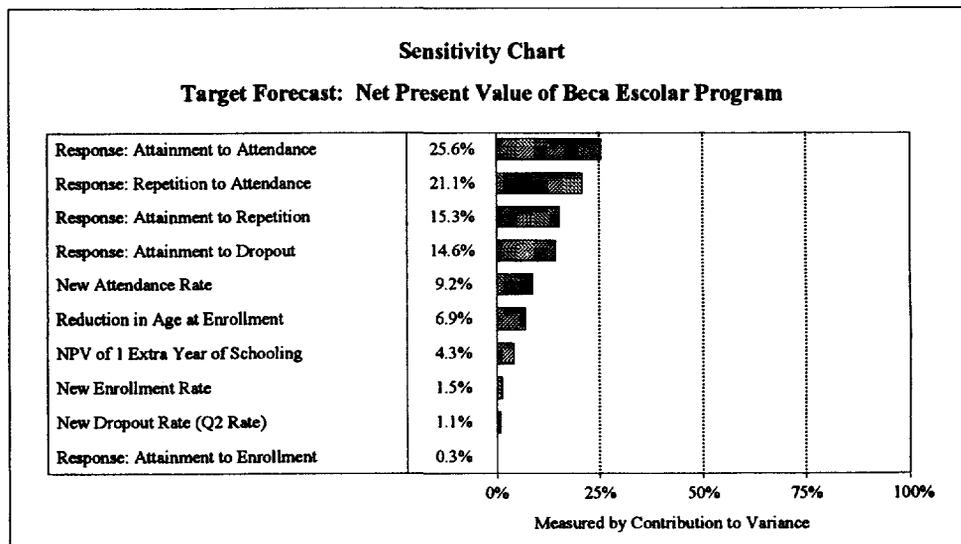
and shows that even with the most pessimistic combination of scenarios, the program would have a Net Present Value of US\$28 million - with best possible outcomes, the Net Present Value would be as high as U\$164 million.

Figure 6.2 Model Forecast about Program



Another useful output of the model is a “Sensitivity Chart” which shows the contribution to the variance of the Net Present Value made by the various “assumption” variables (See figure 6.3). To the extent that assumption variables can be directly influenced by policy interventions, information from the sensitivity chart can serve as a useful input in the implementation of a *Beca Escolar*.

Figure 6.3 Sensitivity Chart of Assumptions



APPLICATION FORM : SUBSIDY TO COUNTER POVERTY

1. Type of Subsidy

- Subsidy for Mother
- Subsidy for Old Aged



2. Personal Data of Mother / Beneficiary

□□□□□□□□ Number on Identification Card

Names: _____

Surname: _____

Place of Birth: _____ Date of Birth: Day □□ Month □□ Year □□

Number of Children: □□ Date of Birth of Youngest Child: Day □□ Month □□ Year □□

Number of Children Attending a Public School: □□

Marital Status: Single Married Widowed Divorced Common Law Union

3. Personal Data of Spouse (if applicable)

Names: _____

Surname: _____

Place of Birth: _____ Date of Birth: Day □□ Month □□ Year □□

4. Place of Residence

Province: _____ Canton: _____ Parroquia: _____ Urban Rural

Address: _____

Ownership Status of Dwelling Material of Construction Whether Household Posseses

- | | | |
|---|--|--|
| <input type="checkbox"/> Own | <input type="checkbox"/> Cane or Adobe | <input type="checkbox"/> Electricity <input type="checkbox"/> Water <input type="checkbox"/> Phone |
| <input type="checkbox"/> Rented | <input type="checkbox"/> Wood | |
| <input type="checkbox"/> Owned by Friends / Parents | <input type="checkbox"/> Cement | <u>Fuel used for Cooking</u> |
| <input type="checkbox"/> Is same as place of work | <input type="checkbox"/> Mixed | |

Other _____ Other _____ Gas Kerex Coal Electr.

5. Labor Market Data

MOTHER/BENEFICIARY

SPOUSE

Current Work Status

- | | |
|--|--|
| <input type="checkbox"/> Employed | <input type="checkbox"/> Employed |
| <input type="checkbox"/> Unemployed | <input type="checkbox"/> Unemployed |
| <input type="checkbox"/> Domestic Work | <input type="checkbox"/> Domestic Work |

Type of Work

- | | |
|---|---|
| <input type="checkbox"/> Domestic Worker | <input type="checkbox"/> Construction Worker |
| <input type="checkbox"/> Factory Worker | <input type="checkbox"/> Farmer / Cattle Worker |
| <input type="checkbox"/> Farmer / Cattle Worker | <input type="checkbox"/> Business / Retail Vendor |
| <input type="checkbox"/> Business / Retail Vendor | <input type="checkbox"/> Artisan |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ |

Term of Employment

- | | |
|------------------------------------|------------------------------------|
| <input type="checkbox"/> Permanent | <input type="checkbox"/> Permanent |
| <input type="checkbox"/> Temporary | <input type="checkbox"/> Temporary |

Monthly Income

Sucres: _____ Sucres: _____

6. Declaration of Veracity

I declare, under oath, that the information on this application are true, and the same can be verified at any conveniently agreed time. In case that the data are found to be inaccurate, I would lose my eligibility for the Subsidy Program.

Date of Application:

Day Month Year _____ Signature or Thumb-imprint of Applicant _____ Signature of Witness _____

7. Data of Church where Application Filed

Name of Church: _____ Address: _____
 Parroquia: _____ Canton: _____ Province: _____

8. Official Use Only (Codification)

Date: _____ Name of Codifier: _____ Signature: _____ Place : _____
 Observations: _____

Table: Eligibility Criteria for the Bono Solidario as determined from the ECV-IV¹⁰

	OCCUPATION	Classified as Eligible
	NON-AGRICULTURAL	
1	Employee / Worker in the Public Sector	No
2	Employee / Worker in the Private Sector	No
3	Daily Wage Worker or Peon	Yes
4	Patron	No
5	Self-owned Informal Enterprise (" <i>Cuenta Propia</i> ")	Yes
6	Household Worker without Pay	Yes
7	Non-Household Worker without Pay	Yes
	AGRICULTURAL	
8	Salaried Agricultural Worker	No
9	Daily Wage Agricultural Worker or Peon	Yes
10	Patron of a Farm	No
11	Agricultural Worker for own Small Farm	Yes
12	Household Farmhand without Pay	Yes
13	Non-Household Farmhand without Pay	Yes
14	Domestic Servant	Yes

¹⁰ The occupational options presented in this table correspond directly to Question 20 about the main job in the past week, Section 6, Part B of the *ECV-IV*.

Table A: Per Person Indigent and Poverty Lines (in Nominal Suces)

Region	Indigent Line	Poverty Line
Urban Coast	148,709	292,792
Rural Coast	133,643	210,130
Urban Mountains	147,573	362,943
Rural Mountains	130,411	225,937

Table B: Total Family Monetary Income Quartile Cut-Offs (in Nominal Suces)

Region	Q1(Poorest)	Q2	Q3	Q4(Richest)
Urban Coast	823,470	1,405,800	2,199,900	3,674,500
Rural Coast	460,000	800,000	1,274,933	2,114,165
Urban Mountains	860,000	1,468,355	2,388,065	3,990,685
Rural Mountains	240,000	601,610	1,029,155	1,860,000

Table C: Per Capita Family Monetary Income Quartile Cut-Offs (in Nominal Suces)

Region	Q1(Poorest)	Q2	Q3	Q4(Richest)
Urban Coast	155,737	265,111	412,503	712,500
Rural Coast	84,907	144,736	216,584	334,440
Urban Mountains	180,000	300,000	511,728	952,400
Rural Mountains	48,018	111,363	186,238	319,430

Foster-Greer-Thorbecke Poverty Measures

The formula for the FGT poverty index is:

$$P_{\alpha} = \frac{1}{n} \sum_{i=1}^q \left(\frac{Z - y_i}{Z} \right)^{\alpha}$$

where

- Z = poverty line
- y_i = income of the i th person
- q = the number of poor
- n = the total population

The n people in the population are ranked by welfare from poorest to richest: $i = (1, 2... q... n)$. The parameter α represents the sensitivity to the income distribution among the poor. When $\alpha = 0$, the FGT measure collapses to the Headcount ratio or the percentage of the population that is below the poverty line. This measure can give estimates of how many of the poor should be served by poverty programs, but is insensitive to differences in the depth of poverty. Suppose the poverty line is \$100. There are ten people in the economy and two are poor. The Headcount index will give the same result ($P_0 = .2$) if there are two people with incomes of \$95 as it would with two incomes of \$5, yet clearly, in the latter case poverty is more severe.

When $\alpha = 1$, the FGT index becomes the Poverty Gap, a measure of the depth of poverty. This measures the total income shortfall as a percentage of the poverty line. Thus, in the case of the two poor people with incomes of \$95, $P_1 = 0.01$. With two poor people earning \$5, P_1 would be 0.19.

The drawback to the Poverty Gap measure is that it will estimate the poverty to be the same when one poor person has an income of \$90 and the other an income of \$10 as it would when both have an income of \$50. Yet most people would agree that the suffering of the extremely poor person with only \$10 is worse than that of the poor person with \$50 or \$90. This is overcome for $\alpha > 1$. Let us use $\alpha = 2$. Then the first case gives $P_2 = 0.082$ and the second gives 0.025. The drawback to using $\alpha = 2$ is that the measure is hard to interpret.

Source: from "Administering Targeted Social Programs in Latin America: From Platitudes to Practice", by Margaret E. Grosh, The World Bank, 1994, Box 3.1, p. 25

Annex 4: An Emerging Education Strategy for Ecuador

David Harding and Xiaoyan Liang

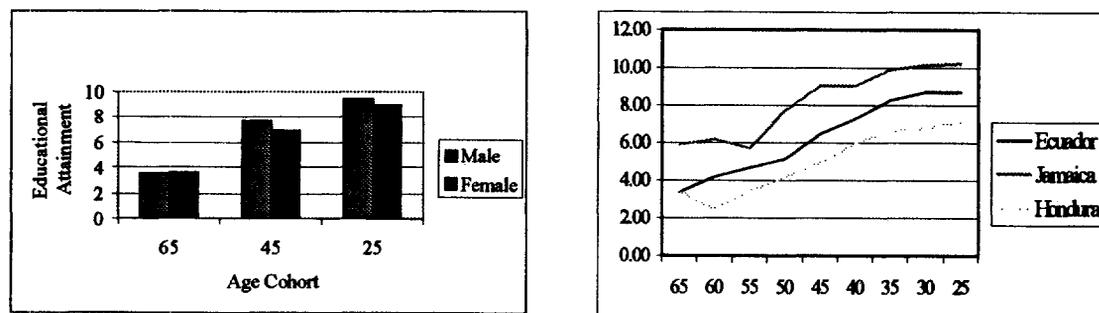
This paper attempts to review basic indicators of attainment, coverage and quality, as well as education expenditures and finance in the education system in Ecuador, in the wake of the macro-economic crisis natural disasters which occurred over the last two years. It identifies the key problems facing the Ecuadorian education system and suggest possible strategies to guide educational policies and direct future World Bank support.

The paper uses the most recent data available on the education system in Ecuador including the 1998 Living Condition Survey (*Encuesta Condiciones de Vida*). It also collates findings and observations from available studies both within and outside the World Bank.

I. Educational Attainment

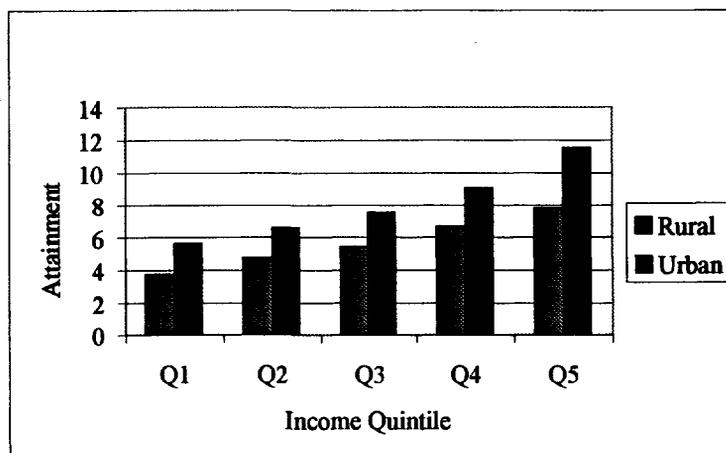
Ecuador's educational attainment as measured by years of education has steadily increased over the past few decades. By 1998, the average attainment of 25 year olds reached 9 years with no significant difference between men and women (Figure 1). This level of average attainment places Ecuador relatively high on the list of countries in Latin America. Figure 2 shows that Ecuador's educational attainment over the last 40 years has been between Jamaica and Honduras. In fact, UNDP's education index (composite of adult literacy and educational attainment) categorized Ecuador as one of the medium education development countries.

Figure 1 and 2. Educational Attainment



However, there is considerable disparity in educational attainment across income groups and between rural and urban populations. For example, the extreme poor (consumption quintile 1) in rural areas have less than 4 years of education whereas the rich (quintile 5) in urban areas have attained on average almost 12 years of education, three times that of the extreme poor in rural areas (Figure 3).

**Figure 3. Educational Attainment by Rural and Urban Areas
(Age over 15 and have already left School)**



Source LSMS 1998

II. Coverage and Quality

Coverage

Overall coverage at primary level is relatively high at about 95% with only about 10% difference between the poorest and the richest income groups.

At the lower secondary level, the overall coverage is about 44%. However, this figure disguises the huge disparity across income groups at this level. The lowest income group has a net enrollment rate of only 19% whereas the highest income group has 80%, four times more than that of the lowest income group (Table 1). This enrollment gap first appears at around age 11 when children enter lower secondary education and the gap widens thereafter (Figure 4).

At the upper secondary level, the overall coverage is about 34%. Again, there is big disparity across income groups. Only 11% of the age cohort from the lowest income group are enrolled at the upper secondary level, compared to 62% of the high income group. Furthermore, gross enrollment rates for secondary education have slightly worsened over the last twenty years (Figure 5).

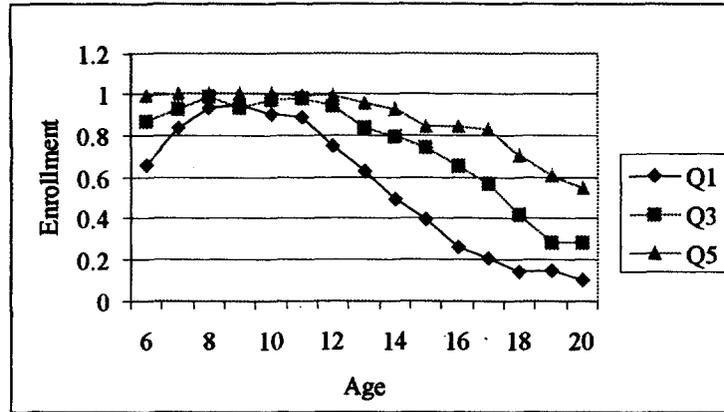
Coverage at the preschool level is very low averaging about 18%, the high income group having a net enrollment of 30%, about 3 times higher than that of the low income group. Enrollment at higher education is even less equitable. Only 2% of the age cohort from the poorest quintile have access to that level of education, compared to 33% for the richest income quintile (Table 1).

Table 1. Net Enrollment Rates by Level of Education and by Consumption Quintile

Level of Education	Consumption Quintile				
	Q1	Q2	Q3	Q4	Q5
Preschool	0.10	0.13	0.16	0.19	0.30
Primary	0.88	0.94	0.93	0.97	0.99
Lower Secondary	0.19	0.31	0.59	0.69	0.80
Upper Secondary	0.11	0.20	0.32	0.47	0.62
Higher Education	0.02	0.04	0.06	0.16	0.33

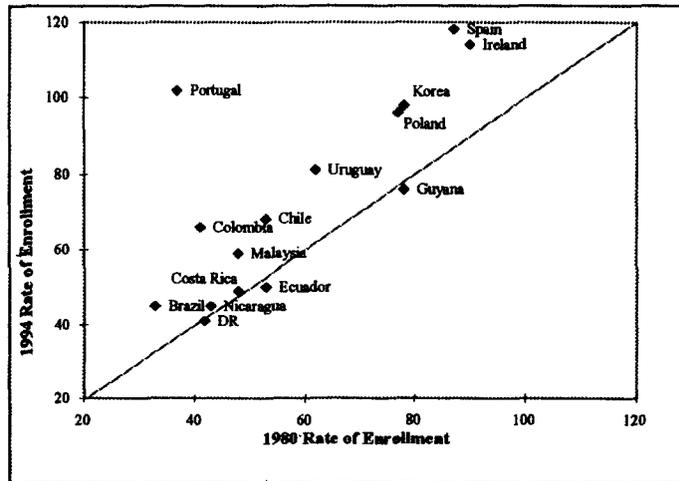
Source LSMS 1998

Figure 4. Age-Specific Enrollment by Income Quintile



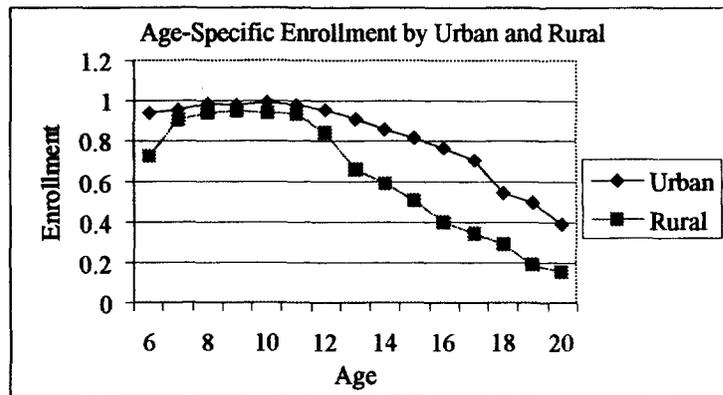
Source LSMS 1998

Figure 5. Secondary Education Gross Enrollment 1980, 1994



At the primary level, there is no significant difference in coverage between rural and urban groups. However, a significant gap emerges at the lower secondary level at the age of 11 and continues through to the high education level (Figure 6).

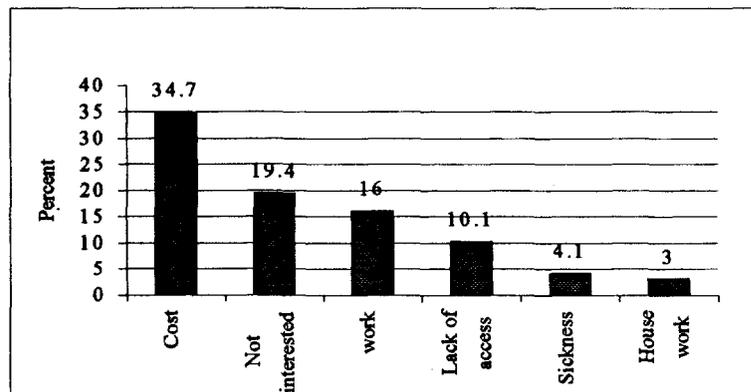
Figure 6. Age-Specific Enrollment by Urban and Rural Areas



Source LSMS 1998

Why is attendance at lower secondary so low especially for the poor? To answer this question, we use two methods. First, we look at the responses given to the question “why are you not enrolled in school”? Among children 11 to 15 years old, main reasons listed for not attending school include cost (34%), not interested (19%), having to work (16%), lack of access to schools or teachers (10%), sickness (4%) and house work (3%).

Figure 7. Reasons for not Attending School (Ages 11-15)



Source LSMS 1998

Second, we employ multivariate logistic regression method to investigate how factors such as poverty, mother’s education, location, and children’s work status affect their probability of enrolling in a school. We found that the probability of enrollment at the lower secondary schools among children 11 to 15 is significantly associated with being extreme poor, living in rural areas, mother’s education, and whether or not the child is working.

With everything else the same, the probability of enrollment for a child from an extreme poor household is only 70% of a non-extreme-poor child; the enrollment probability of a working child is only 33% of a non-working child. On the contrary, with every additional year of mother's education, the probability of enrollment increases by 1.24 times; living in an urban area also increases the probability of enrolment by 1.74 (Table 2).

Table 2. Predicting the Probability of Enrollment in Lower Secondary schools

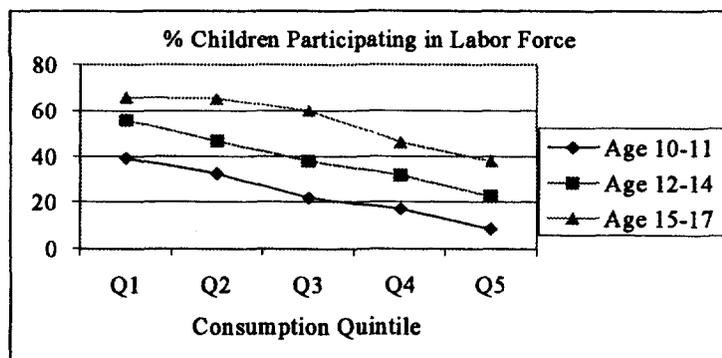
Variables	B (S.E.)	Exp (B)
Mother's education	0.21 (0.02)***	1.24
Extreme poor	-0.34 (0.13)**	0.71
Female-headed households	-0.23 (0.17)	0.80
Indigenous	1.23 (0.25)***	3.43
Urban	0.56 (0.15)***	1.74
Costa region	0.22 (0.13)	1.25
Sierra region	0.28 (0.21)	1.32
Work	-1.12 (0.13)***	0.33
Constant	0.62 (0.17)***	

Note: *** P<=0.001 ** P<=0.01 * P<=0.05
Source LSMS 1998

In other words, combining the findings from the two methods, we find that children do not attend lower secondary school mostly because of poverty and low maternal education hence lack of demand and stimulation at home. Lack of access in rural areas is also a contributing factor.

Due to poverty many poor children have to work. Data show that substantial proportion of children between the ages of 10 to 17 are already participating in the labor force. Figure 8 below shows that children from the lowest income group are much more likely to be working than those from the high income group at all ages, contributing perhaps to why enrollment at secondary level of education is so low especially for the poor.

Figure 8. Percentage of Children Participating in the Labor Force



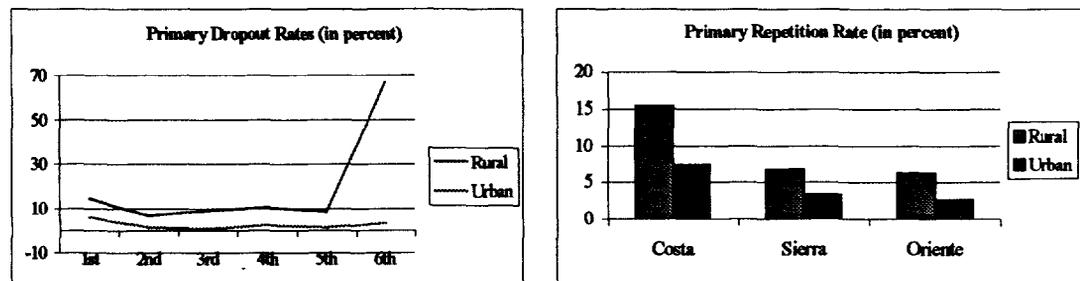
Source LSMS 1998

Strategies have to be found to drastically increase access to lower secondary education particularly for the rural poor while, at the same, addressing the considerable inequities existing at the primary level which contribute to the widening gap at subsequent levels of education. Such strategies for increasing access to rural education may include demand-side financing programs to compensate families for both direct and indirect costs of schooling, programs aiming at improving home education environment and raising awareness of the importance of education, and increasing access to lower-secondary schools in rural areas such as EDUCO in El Salvador, CONAFEI in Mexico, *Escuela Nueva*. The use of distance education modalities such as Mexico's *Telesecundaria* (see Boxes 3 -4) may also need to be explored.

Internal Efficiency and Quality

Repetition and dropout rates are frequently used as measures of internal efficiency of the education system. Repetition and dropout are costly in terms of the resources required to produce a successful graduate of the system. Sometimes, when measures of quality are lacking, they are also used as quality indicators. Figure 9 and 10 present dropout and repetition rates at primary schools. Children in rural areas are twice more likely to dropout than those in urban areas. The amazing disparity appears at the 6th grade when two thirds of the 6th graders in rural areas drop out of the system. Repetition is also more severe in rural schools than in urban ones, in Costa region than in Sierra and Oriente regions. On average, 15% of children in rural Costa primary schools repeat at least once.

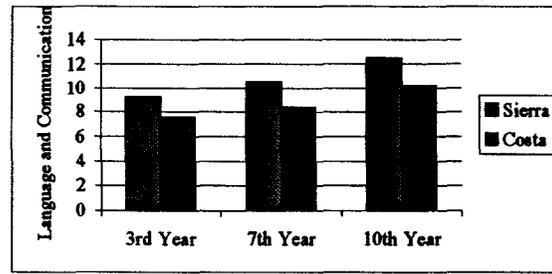
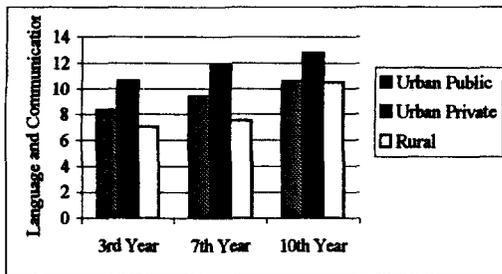
Figure 9 and 10. Primary Dropout and Repetition Rates



Source: SIISE

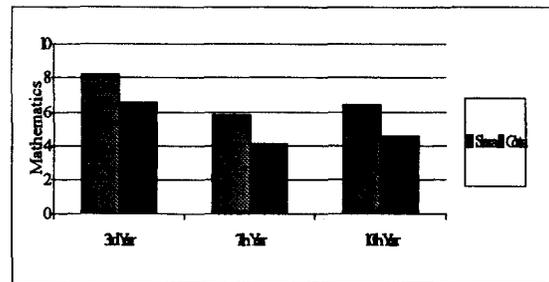
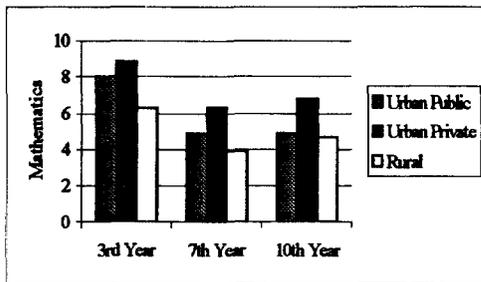
Comparison with other countries in terms of education achievement can not be made because Ecuador has not participated in any of the international standardized testing such as TIMMS and UNESCO education achievement study. However, data from the 1997 National Achievement Test in language and mathematics shows that within Ecuador, there is great disparity in education achievement between private and public, rural and urban, and across regions. Urban private students out-perform urban public and rural students in both language and mathematics for the 3rd, 7th, and 10th years. Students from rural schools performed worst. Students from Sierra region achieved better scores than those from the Costa region in both language and mathematics for the 3rd, 7th, and 10th years (Figures 12-15).

Figures 12 and 13. Achievement in Language and Communication



Source: National Achievement Test, 1997

Figure 14 and 15. Achievement in Mathematics



Source: National Achievement Test, 1997

At the tertiary level, there are also indications of low quality and efficiency. Combination of counting pre-university students as enrollees in higher education and the long duration of study mean that the actual number of persons having received higher education in Ecuador is much lower than the gross enrollment of 18 % (see Wu et al, June 1999). Internal efficiency is low: on averages it takes 13.4 years to produce a high education graduate. Graduation rate in public universities rarely exceeds 10-15 % of a cohort. Further, cost is incredibly high: the unit cost of \$22,460 is actually higher than annual tuition fee of an US Ivy League University. As an indicator of the quality of the higher education system in Ecuador, the number of papers published in international journals averaged only 0.02 per researcher per annum. This number is below Brazil (0.04), Argentina (0.12), Mexico (0.05), Chile (0.15) and Colombia (0.11) (Wu, 1999).

Teachers

A critical factor affecting inefficiency and low quality is in the recruitment and retention of quality teachers particularly in rural areas. There is evidence that there is a high incidence of absenteeism among teachers in rural areas, due to lack of motivation. A good incentive structure may serve to counteract this. Teachers in Ecuador do not fare as well as their colleagues in other countries. Liang (1999) found that even after controlling for hours worked per week and levels of education, teachers in urban Ecuador are paid 27% less than their counterparts in the labor force (Table 3).

Table 3. Hourly Wage Premium for Being a Teacher in 12 Samples (Not Taking into Account Teachers' Three-month Vacation)

Countries	Hourly wage "premium" of being a teacher
Bolivia	NS
Brazil	-0.07 (0.03)*
Chile	NS
Colombia	0.20 (0.02)***
Costa Rica	0.15 (0.04)***
Ecuador (urban)	-0.27 (0.04)***
El Salvador	0.09 (0.03)**
Honduras	0.29 (0.04)***
Panama	0.12 (0.03)***
Paraguay	NS
Uruguay (urban)	0.10 (0.03)***
Venezuela	0.08 (0.04)~

p<=0.10 * p<=0.05 ** p<=0.01 ***p<=0.001

Source: Liang, 1999. *Teacher Pay in Latin America*

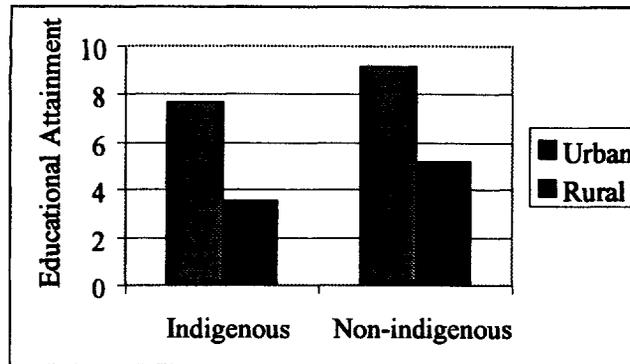
In summary, inefficiency and low quality permeates the education system and the impact is especially severe on the poor and the rural. Mechanisms will have to be found for improving the internal efficiency of the entire education system as well as enhancing the quality and equity at all levels.

III. The Indigenous Populations

In Ecuador, the indigenous population is estimated at 12 million, distributed among 22 provinces although different data sources show marked discrepancies in the number of indigenous people; these discrepancies are attributed to difficulties relating to the definition of "indigenous" and problems of self-reporting. 25 % of the total population identifies itself as Indigenous or Afro-Ecuadorian and it is calculated that 80% of this population lives in the rural areas.

Indigenous population in Ecuador are more likely to be poor than the non-indigenous. While 47% of the indigenous population are classified as extremely poor – in the bottom 20% consumption quintile, only 17% of the non-indigenous are considered extremely poor. Also, indigenous people have on average lower literacy rate and lower educational attainment. Figure 16 shows that almost half of the rural indigenous women are illiterate. Additionally, rural indigenous population on average attain less than 4 years of education (Figure 17).

Figure 17. Educational Attainment by Ethnicity



Source: LSMS 1998

When looking at the enrollment rates in lower secondary schools, we found that holding everything else constant, being indigenous means *greater* probability of enrolling in a lower secondary school than non-indigenous, more than 3 times greater. However, this does not mean that indigenous children on average have higher enrollment at this level. Using indigenous as the only explanatory variable for enrollment, we found a significantly lower enrollment among indigenous population than non-indigenous. The disparity only disappears when we hold mother's education and poverty constant. This finding indicates that the enrollment disparity between the indigenous and non-indigenous can be explained away by disparities in mother's education and poverty. Usually poor rural indigenous families have considerable financial difficulties in paying school fees, materials and for transportation, thus contributing to the low participation in schools. Also, indigenous parents tend to have little or no formal education themselves and the lack of stimulation and support at home is cited as a reason for low participation and poor performance of their children at school (Ivarsdotter,1999). In fact, with the same level of mother's education and poverty, the indigenous children (at least among those who are sampled) are 3.4 times more likely to enroll in a lower secondary school.

Such findings imply that policies aiming at improving the living standards of indigenous population will help boost their children's enrollment. However, since a large portion of the disparity can be attributed to inter-generational effect, it may take a few generations before disparity will completely disappear, though programs aiming at improving home educational environment such as community-based early child educational programs may help alleviate the disparity.

There is evidence of labor market discrimination against the indigenous population. The household survey data show that the return to an additional year of education for the indigenous population is only 8%, as compared to 12% for the non-indigenous population. Reasons for this “discrimination” are less clear. It could be that the quality of education received by indigenous and non-indigenous groups differ, favoring the non-indigenous. Or it could be as simple as a language factor since the indigenous group either don’t speak Spanish or don’t speak it as well as the non-indigenous people.

Bilingual Education

A recent study commissioned by the IDB has suggested that one major priority for the indigenous and Afro-ecuadorean populations is access to bilingual education (Encalada et al., IDB, 1999). Over the last ten years, a strategy of intercultural and bilingual education has been implemented. The National Directorate of Bilingual and Intercultural Education has made a major effort to develop a system of bilingual and intercultural education with an appropriate pedagogy and administration.

Despite many achievements neither the internal and external efficiency of the program is known, nor its impact on improving the student learning in indigenous communities, the relationship between bilingual education and productive work, and the perception of the communities concerning the curriculum, teacher development, and the designation of educational authorities and their role in the development of the communities). These programs need to be evaluated before large-scale implementation

Employing mother tongue instruction in the early years of schooling in other countries in the region, has been shown to increase school effectiveness through higher learning achievement thereby increasing the internal efficiency of the educational system by producing lower dropout and repetition rates. While bilingual education is undoubtedly more expensive than traditional Spanish-only schooling, learning outcomes are often greater; greater learning outcomes are often reflected in lower repetition rates which, in turn, reduce the cost of schooling. Studies such as those of the bilingual

Box 1. Guatemala: Bilingual Education

One possible strategy for bilingual education is to develop the two languages to adequate proficiency level during primary schooling through simultaneous or parallel bilingual education programs. However, there are very few developing countries except Guatemala, where the simultaneous bilingual education model is used. The experiment in Guatemala shows promising results not only because of the increase in students’ enrolment and completion but also the achievements in both language and academic subjects. The six-year bilingual school students out-performed Spanish-only medium students significantly in Mathematics and Social Studies, and at the same time they do not fall behind in Spanish language despite spending less time in the language (Dutcher, 1995). Despite these positive signs, many countries might be reluctant to adopt this model. One major concern is the cost of this type of bilingual education. Many experimental programs show the cost higher than a normal program...However, the effectiveness of bilingual education programs should be explored further. The initial study on the cost effectiveness of bilingual education in Guatemala shows very positive indications in terms of cost-savings (Patrinos & Velez, 1996). Availability of competent bilingual teachers, affordability for development and production of bilingual learning materials, and acceptance and strong support for the program from the minority communities are fundamental factors for their success.

Source: Win Aung (1999)

education program in Guatemala demonstrate that higher learning outcomes and improved efficiency can more than offset the cost differential involved in bilingual education. (see Box 1).

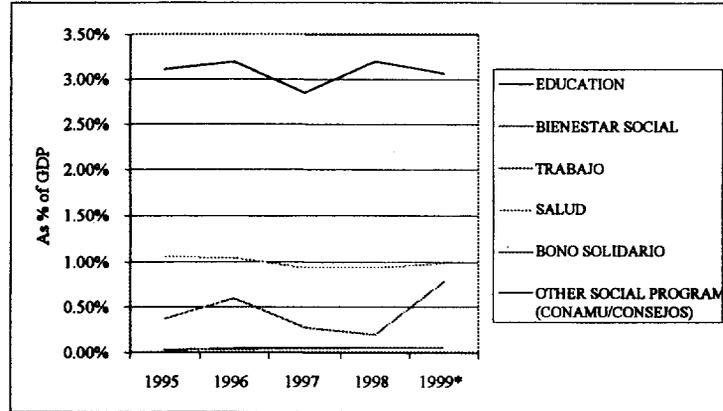
IV. Expenditure and Finance

Central Government Expenditure

Public financing for education in Ecuador comes almost exclusively from the central government. Public spending on education as a percentage of GDP has remained relatively steady (3.1%) over the last 5 years and has remained a priority within the social sector (Figure 18). In 1995, the distribution of education spending is 35% for primary, 35% for secondary, 23% for higher education, and another 7% for administration, literacy campaign and infrastructure. This composition of the education spending can be translated into relatively high unit cost at the high education level (*US\$1300*) and low unit cost at the primary level (less than US\$200) (Figure 19). The unit costs also have remained rather steady over the last few years.

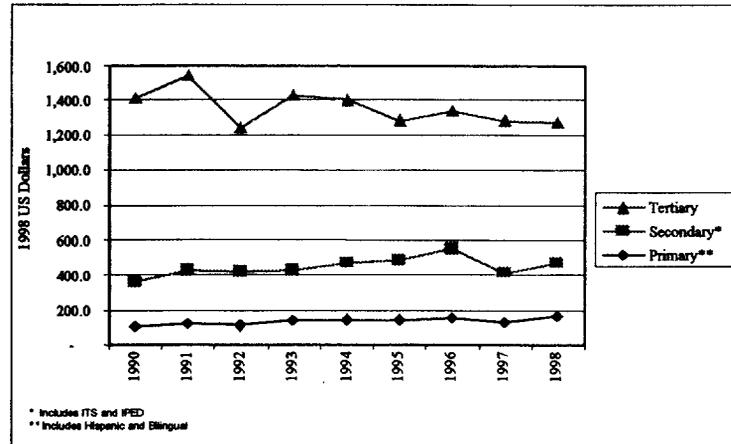
More than 99% of the education budget is allocated for recurrent costs. In both primary and secondary education, more than 99% of the recurrent budget is spent on teachers and other personnel, leaving less than 1% for non-salary expenditures on instructional materials and other learning aids (Figure 20).

Figure 18. Social Sector Expenditure as a % of GDP



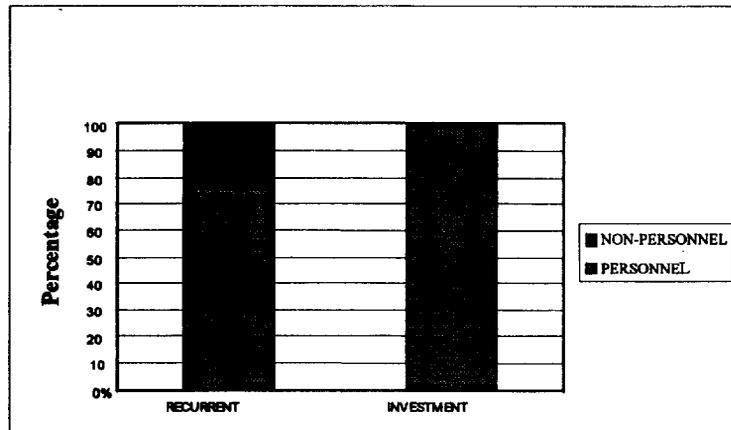
Source: Ministry of Finance

Figure 19. Unit Costs by Education Level



Source: SINEC, MOF, World Bank Calculations

Figure 20. Central Government Expenditure in Education by recurrent and investment spending - 1998



Household Expenditure

Private financing of education is substantial in Ecuador. In 1998, private financing of education at all levels amounted to 3% of GDP, very similar to the level of government financing which is 3.1% of GDP. This level of private financing is substantially higher than for example in OECD countries where on average the government spends 4.7% in education and private financing is 1.2%. This finding may indicate the need to be cautious in devising cost recovery policies to mobilize more resources for education.

Distribution of Education Expenditures

The distribution of public expenditure on education can be examined in several ways. First, we will look at the distribution across geographical areas to see whether poor areas receive more than its share of population; Second, we will use benefit incidence analysis to examine the share of public expenditure received by the extreme poor, regardless of location.

By canton

The SEDES organization grouped all the cantons in Ecuador into 5 categories, according to its average poverty status: priority 1, 2, 3, 4, and 5 areas. The priority 1 and 2 cantons are where the percentage of population who are poor exceeds 80%. To examine how public expenditures in primary and secondary education are distributed across the cantons, we use the personnel cost as a proxy for total expenditure, since we learned that more than 99% of primary and secondary expenditure is on personnel. Table 4 shows that there is much room for improvement in targeting the poor priority 1 cantons. So far, the share of public primary and secondary education budget received by these cantons roughly correspond to their population share (15%). A more progressive public expenditure scheme would have devoted a much higher percent of public money (in relation to the population share) to poor areas and a much lower percent to rich areas.

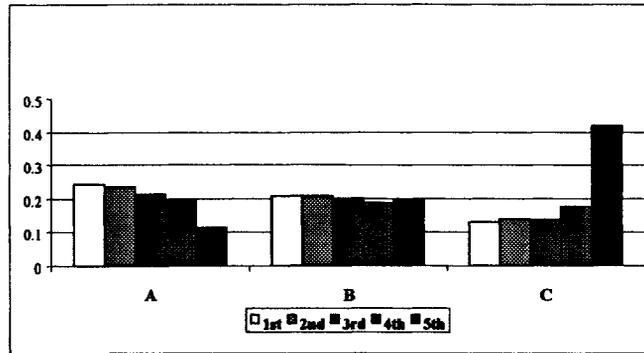
Table 4. Share of Primary and Secondary Public Expenditure by Canton

	Priority 1	Priority 2	Priority 3	Priority 4	Priority 5
Population share	0.15	0.12	0.10	0.26	0.38
Primary expenditure share	0.15	0.21	0.11	0.09	0.45
Secondary expenditure share	0.16	0.26	0.11	0.09	0.38

By poverty

Benefit incidence analysis shows that public spending on primary education is progressive when mapping to consumption quintiles. The bottom 20% of the population enjoys 24% of total public subsidy in primary education whereas the top 20% of the population receives about 11% (Figure 21.A).

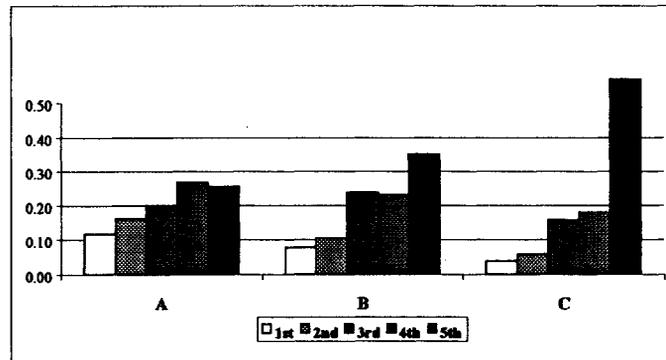
**Figure 21: Distribution of Government and Private Spending on Primary Education
(By Consumption Quintiles)**



Source: LSMS 1998.

However, public spending on all levels of education (including secondary and high education expenditures) is not distributed equitably. While the top 20% of the population get 25% of public subsidy in all levels of education, the bottom 20% only gets 12% (Figure 22.A).

**Figure 22. Distribution of Government and Private Spending on Education
(By Consumption Quintiles)**



Source: LSMS 1998.

Compared to Peru, Argentina, and Dominican Republic where the bottom 20% of the population receive respectively 21%, 26%, and 23% of public subsidies in all levels of education, Ecuador's public financing across all levels of education is much less progressive (Table 5).

**Table 5. Public Expenditure in Education Received by the Bottom Quintile
(Expressed as Percent of Total Expenditures)**

Education Level	Ecuador	Peru*	Argentina**	Dominican Republic***
Primary Education	24	28	33	29
All levels	12	21	26	23

*Wu, Kin Bing. 1999. "Sector Study on Education Finance and Rural Education in Peru." The World Bank. Washington, DC. February.

**The World Bank. 1999. "Argentina Poverty Report: Poor People in a Rich Country." The World Bank. Washington, DC. June.

***The World Bank. 1999. "Dominican Republic: Social and Structural Policy Review." The World Bank. Washington, DC. July.

Source: World Development Indicators, 1999

The inequitable distribution of education financing in Ecuador is mainly due to the lower levels of enrollment of the poor at higher levels of education (lower secondary and beyond) where per pupil subsidy is higher. Strategies to reverse this trend must be considered either through increasing enrollment of low income groups and/or through reducing the public subsidy at these levels.

Another source of inequity comes from private expenditure on education. The richer spends substantially higher amounts of private money on their children's education than the poor. Benefit incidence analysis of total expenditure in education (both public and private) shows that even at primary level, the inequity is substantial: the bottom 20% receive about 12% whereas the top 20% receives more than 40% (Figure 21.C). This is clearly a contributing factor to the disparities in learning achievement between the poor and the rich.

V. Benefits of Education

About 30% of those who are between 15 to 65 years old and who have already left school are working in the formal wage sector. Returns to education are estimated using the age earnings function method (Table 6). Job experience, years of education, and hours worked per week are employed as predictors for monthly wage not including other forms of compensation (in its natural log form). We find that each additional year of education is associated with 11% of premium in monthly wage – private rate of return to education. When looking at men and women separately, we find that private return is higher for females than males: for every additional year of education, females enjoy almost 15% of monthly wage premium, as compared to less than 11% for males. These figures are consistent with the findings from "*Ecuador: Is society getting What It Needs from Public Spending on Education*", using the 1994 LSMS data.

Table 6. Private Rates of Return to Education

	All	Male	Female
Constant	9.99 (0.12)***	10.4 (0.14)***	9.58 (0.19)***
Years of education	0.114 (0.00)***	0.107 (0.00)***	0.148 (0.01)***
Experience	0.04 (0.00)***	0.04 (0.00)***	0.04 (0.01)***
Experience squared	-0.0005 (0.00)***	-0.0004 (0.00)***	-0.0005 (0.00)***
Hours/wk (log)	0.48 (0.03)***	0.43 (0.00)***	0.42 (0.05)***

Source: LSMS 98.

When looking at the wage premium associated with different levels of education, we find that from 1994 to 1998, there is a decline in the rate to primary (from 40% to 33%) and secondary education (from 54% to 48%). However there is a significant increase in the return to higher education (from 48% to 73%) (Table 7). These changes may have contributed to the increasing inequity of the Ecuadorian society as the poor are not benefiting as much from the higher education.

Table 7. Earnings Premium Associated with Levels of Education

Education Level	1994	1998
Primary (vs. no education)	40	33
Secondary (vs. primary)	54	48
Higher (vs. secondary)	48	73

Source LSMS 1998

VI. Institutional Issues

The analysis above suggest that there are substantial problems in the Ecuadorian education system related to equity of access at all levels, but particularly in the lower secondary and above. The low income groups, the rural, and the indigenous have significantly lower access, attainment, and achievement. In order to rectify the situation, the Ministry will have to develop a clearly strategic framework in which these issues of equity are prioritized and vulnerable groups are targeted. An examination of the organization of the Ministry reveals that there are weaknesses in this regard; there remain fundamental institutional weakness that need to be addressed before progress can be made in the education sector.

Lack of Comprehensive Strategic Framework for Reform

The Ministry of Education has been engaged in a process of reforming the education system; proposals having been submitted to Congress but approvals are still pending. Although there is some degree of consensus on the need for major organizational reforms and a number of principles have been articulated on developing a strategic plan, the government is lacking a comprehensive strategic framework for these reforms giving a clearer focus on reducing inequities and internal inefficiencies in the system with specific strategies and implementation plans for addressing these

deficiencies. In line with the strategic framework, the capacity of MEC needs to be strengthened for national level policy making, setting policies for the equitable and efficient resource distribution.

Lack of Accountability and Transparency

The education system is beset with problems that inhibit a rational allocation and utilization of public expenditures. The examples of budgeting and accounting, and the supply and remuneration of teachers demonstrate the problems of the lack of accountability and transparency in the sector and the need for substantial reforms in this area.

Budgeting and Accounting

The current budgeting and accounting system, in particular, leads to a lack of accountability and transparency. The problem is that no single entity is responsible for the sector as a whole nor is there any entity that reviews the combined effect of the various subsectoral budget proposals or their intrasectoral distribution. Investment proposals are vetted by the Planning Secretariat (SEGEPLAN) and then submitted to the MOF. Too many budgetary units exist with each secondary school have a line item in the national budget. However, MOF is the only sector which has access to all the information necessary to make an analysis of intrasectoral allocations (although such an analysis is not considered to be within the responsibilities of the MOF).

As a result, allocations tend to be the result of influence rather than sectoral policy and the complete information on budgetary allocations only emerges after the budget has been sent to Congress for approval. The allocation of funds is made purely on the basis of previously budgeted levels (with allowances for salary increases, estimates of growth and inflation).

According to the system of decentralized responsibility, expenditure for primary education is authorized and disbursed at the provincial level of the MEC. However, the effect of this is that, instead of bringing the decision-making closer to the level of the school and its needs, an additional level of bureaucracy is added to the process, resulting in cumbersome and inefficient processes. The needs of the schools are not met and no school can make decisions related to key decisions (such as the selection of teachers) since all are taken by the Provincial Directorate.

MEC is never in possession of full information on education expenditure. Data from each secondary school and CEM is unprocessed at provincial or national level and forwarded to MOF. Therefore MEC is unable to compute, for example, a total public wage bill for education.

Teacher Remuneration and Supply

The remuneration system for teachers is overly complex, non-transparent, and unrelated to teacher performance. The system consists of extra salaries, bonuses, and allowances which, in their complexity makes the system conducive to manipulation and

corruption. Teachers are classified into 16 categories which have little relevance to responsibilities, function, or performance, but only to length of service. This results in considerable confusion concerning salaries, with individual teachers not being aware of how their salaries are computed or what their monthly salary should be.

Again, teachers are hired by the provincial directorate through a very lengthy and cumbersome process and, since the selection is made far from the schools, teacher skills are often not related to the needs of the schools. The bureaucratic nature of the system is compounded by the fact that there neither a central registry of qualified teachers nor clear selection criteria for recruitment.

V. Strategies for Reform

The following five main strategies are suggested for addressing the problems identified in the situation analysis of the education sector made in this paper:

(i) Developing a clear strategic framework:

At the outset, there is an urgent need to clarify reform goals and strategies and to achieve a consensus through a participatory process within the country. These goals and strategies need to take into consideration the considerable inequities which exist in the education system, particularly with regard to the access, attainment and learning achievement of the rural poor and indigenous population.

(ii) Institutional reform: re-organizing the Ministry of Education

The challenge facing Ecuador is to define the responsibilities of the central and sub-national governments in line with the principles of decentralization which it has adopted. The role of the central ministry would therefore become one of *selecting what it can do best* and in promoting the development of new decision-making processes by clearly redefining and articulating the roles and responsibilities of local and central governments. The legislative process towards decentralization has to be accompanied by a real process of devolving power closer to the local and school level in order to serve the needs of the school; this could be done by increasing school autonomy, the role of the private sector, and community participation.

Related to this, there is the need to streamline the budgeting and accounting mechanisms to improve accountability and transparency. One entity (preferable the MEC) needs to have an oversight of the budget and expenditures in order to ensure that it is in line with sector strategy and to facilitate the desired intersectoral distribution.

Finally, a new system of teacher supply, remuneration and incentives need to be designed and implemented in the interest of accountability and transparency. A management information system, including teacher management, needs to be set up to improve the flow of information and to facilitate decision making.

(iii) Reducing the inequity in access to and quality of basic education, particularly for the rural poor.

According to the analysis made above, the following four interventions are suggested for increasing the access and learning outcomes among the rural poor:

Early Childhood Education

Investments in early childhood care and education targeted on the rural poor and indigenous, in conjunction with parenting and caregiving programs, can be a way to compensate for the deficits in the experience, nutrition and health of the children from these households and prepare them for formal schooling. Approaches such as community-based forms of day care, supporting and educating parents will need to be based on a thorough analysis of how children are supported and cared for in the local cultural context and an identification of the gaps which exist in such support and care.

Bilingual Programs for Indigenous Education:

There is an urgent need to assess the impact of the *System of Nacional Educación Intercultural Bilingue*. Since the inception of the bilingual education system in 1988, there has been no evaluation

of the achievements and problems to allow for the introduction of corrective action in the future. Such an evaluation needs to be independent of DINEIB and the Ministry of Education to guarantee objectivity and to recognize the opinion of primary stakeholders such as the children, teachers, directors, parents, community leaders, technical experts, and Ministry officials. Strategies of bilingual education may serve to increase learning outcomes among the indigenous groups (see Box 1).

**Box 2. Colombia's Escuela Nueva:
A Strategy for Reaching the Rural Poor**

Based on its 1978 study detailing major weaknesses in the provision of rural basic education, the Government of Colombia gave top priority to rural education and produced a ten-year rural education program which built heavily on the Escuela Nueva program. Escuela Nueva was created in 1976 after a decade of experimentation and was supported at various times by UNICEF, USAID, IDB and the World Bank. By 1978 more than 500 schools were involved and this gradually expanded under World Bank financing to 17,948 schools by 1989, serving 800,000 students. Major characteristics of Escuela Nueva include: One or two teachers offering all five years of primary education in one or two multi-grade classrooms; flexible promotion, special instructional materials for individual and group work and teachers' guides, curriculum relevant to rural community, school government to ensure participation of students, parents, and community; study corners and class libraries; self-monitoring mechanisms for students. Rojas and Castillo (1988), Psacharopoulos, Rojas, and Velez (1992), and McEwan (1995) have found that ES schools had significantly improved student outcomes, reduced dropout rates among the rural poor, as well as student and community participation as measured by activities such as adult education, agricultural extension, athletic competitions, health campaigns and community celebrations. Social self-esteem and civic behavior higher than in traditional schools. Moreover, EN schools have statistically significant effects on Spanish and mathematics achievement in third and Spanish in fifth grade. High benefits relative to cost (parent volunteerism reduces monetary outlays for building and construction and contributes to gains in student achievement).

Demand-side financing

Box 3. El Salvador: EDUCO

A new vision of shared responsibility for meeting educational needs has had a profound impact on education in El Salvador in the 1990s, resulting in significantly expanded coverage at the preschool and basic levels. Facing the daunting task of educational sector reform, the Salvadoran Ministry of Education sought an innovative and effective approach to expanding coverage in rural and marginalized areas. EDUCO ("Education with the Participation of the Community") provided a model for that approach, creating a framework and processes for responsibility to be shared among government authorities, community NGOs, and parent associations. Originally initiated in 1991, EDUCO works to provide preschool and basic education to rural and needy communities through a decentralized system of service provision, encouraging community participation in the educational process. Program activities include teacher training, organization of parents and teachers into community education associations (responsible for the management of educational resources at the local level), and development of didactic materials for parents and teacher guides. The program's administrative component has focused on design and actualization of legal and financial mechanisms which enable educational sector decentralization.

The outcomes of EDUCO programs demonstrate both quantitative advances in coverage and qualitative improvements compared with traditional education. Since 1992, EDUCO has provided basic education for 168,672 children, employed 3,871 teachers, and formed 1,700 community associations. The education provided in EDUCO communities is characterized by lower rates of teacher absenteeism, increased amount of instructional time, a higher average mathematics achievement test scores in first and second grades, and greater parent involvement in the education of their children than in the traditional school system. Coordination of efforts at national, regional, and local levels through EDUCO programs has significantly improved the education system in El Salvador, and today EDUCO continues to expand, spreading the benefits of community involvement in the education to children who might never have had educational opportunity through the traditional system.

A high priority need to be assigned to developing demand-side financing mechanisms to attract and retain children in school. Interventions to reduce the direct and indirect costs of education for the rural poor will need to be carefully targeted. Possible interventions could be in subsidizing families for lost earnings (opportunity costs) through the provision of scholarships, and experimenting with flexible school calendar school hours because of seasonal work obligations. Financial incentives could be given to parents to send children and keep them in school through the provision of allowances accumulated as the child transfers from one grade or level to another. Such interventions would be targeted particularly at the very poor and/or indigenous populations who would be most vulnerable in the time of macroeconomic crisis and, as the data above indicates, whose participation and achievement in school is most affected.

Sources: Guido Bejar (1997) and Meza (1997).

Enhancing community involvement

Building on the experiences with the school network programs (CEMs) , strategies need to be developed to developing a vision of shared responsibility for meeting the needs of the rural poor. The example of Educo (see Box 3) may serve to illustrate a particular strategy targeted at the rural poor and marginalized areas in which parents, community, NGOs, and government work collaboratively to increase participation and quality in pre-school and basic education.

(iv) Increasing access/participation at lower secondary level especially in poor rural areas

Building on the experiences of decentralized programs in the rural and peri-urban areas, the government should explore strategies for making access to education more equitable for the rural poor especially to increase access and achievement in lower secondary schools. Again, effective strategies could be in the area of demand side financing such as grants and allowances directed at the most poor. In a period of macro-economic crisis, the opportunity costs of having children in school are most felt in households with children of lower-secondary age and higher. The level of lower-secondary is where the gap in enrollment between the poor and non-poor is particularly noticeable and the disparity widens from the age of 11 (see Figure 5 above) and this would seem to be the critical stage for demand-side interventions of this kind.

A further strategy which could be explored is that of combining distance education modalities with conventional on-site education at the levels of lower-secondary and secondary such as been successfully demonstrated with Telesecundaria in Mexico (see Box 4). The use of distance education can be used to overcome the problems of access in remote areas as well as problems related to the supply and quality of teachers in such areas.

(v) Reforming higher education:

**Box 4. Mexico: TELESECUNDARIA:
Increasing Access to Secondary Education for the Rural Poor**

Telesecundaria provides a combination of distance and on-site secondary education for grades seven to nine in rural areas of Mexico where schools or teachers are in short supply and education is of poor quality. Educational television programming is broadcast through EDUSAT, Mexico's educational broadcast system, and transmitted through Solidaridad 1, a government satellite, to 13,785 schools in two sessions daily. A school can be equipped and wired to receive *Telesecundaria* broadcasts for a total cost of US\$2,000. Technical adaptations are made where necessary. For example, 10 percent of *Telesecundaria* schools use solar power.

Telesecundaria schools are initiated at the request of local communities that demonstrate that 15 or more primary school graduates will participate and can identify a location for school facilities. The Mexican Ministry of Education then provides a teacher, a television set, a satellite dish, instructional program, and textbooks. Today, 16 percent of secondary students in the country attend *Telesecundaria* programs instead of traditional or technical schools.

Telesecundaria programs emphasize active learning and collaboration, parental participation, practical application of lessons, and student presentations to their community. The curriculum is designed to be adaptable to student needs, local context, and available resources. The teacher's guide provides descriptions of possible limitations teachers may face given the availability of learning materials and tools, and suggests alternatives and ways to overcome those limitations.

With support from the World Bank, the Mexican Government has initiated both a high school (grades 10-12) and junior high school program for adults. In future, *Telesecundaria* schools may access the Internet via *Red Escolar*, which began in 1997 as a computer technology project aimed at seventh to ninth graders. *Telesecundaria* has inspired similar educational technology projects in Costa Rica (1997), Panama (1995), and El Salvador (1998). A *Telesecundaria* program aimed at Latino communities in the United States is planned for the summer of 1998.

José Calderoni

Strategies are urgently needed to increase the internal efficiency, quality, relevance and equity of the diverse HE programs in the country. In particular, a system need to be developed for a system of performance-linked subsidies to higher education institutions based on quality, program relevance to the labor market and the efficiency of financial support mechanisms for encouraging the participation of students with limited economic means. In addition to this, the development of a system of information would enable the dissemination of data on standards and increase the accountability and transparency at this level. Given the high degree of inequity which exists among the income groups for access to higher education (see Table 1), the increasing private rates of return for this level of education, and the vastly higher unit costs, cost recovery mechanisms should be explored to release more funds from tertiary education to basic education in order to increasing access, equity and quality.

Annex 5: Health in Ecuador

Patricio Marquez
and
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Health Status of the Ecuadorian Population. Health indicators of the Ecuadorian population rank among the lowest in the Americas. Table 1 shows that infant mortality was 39.4 per one thousand births in Ecuador, higher than that of Chile (13), Costa Rica (11.8), Cuba (7.9), Colombia (24) or Venezuela (22).¹ The mortality rate of children under 5 years old is 48.3 per thousand, larger than that observed in Chile (14.8), Costa Rica (27.3), Cuba (10.7), Brazil (44.2), or Paraguay (47). The maternal mortality rate in Ecuador is also high (159 per 100,000) compared to Chile (25), Costa Rica (29), Cuba (33), Venezuela (56), Brazil (119), and Colombia (87). Only Bolivia and Peru evidence somewhat worse conditions in mortality rates and incidence of diseases, while Paraguay evidences weaker health infrastructure and services than Ecuador. The health profile is characterized by the coexistence of infectious and communicable diseases and non-communicable conditions and injuries. The poor suffer higher incidence rates in many types of diseases as a result of higher exposure to risk factors and limited access to effective medical care.

Wide Gap in Access to Health Services. Access to health care is limited for about 3 million Ecuadorians, or about 30% of the population. The Ministry of Health (MOH) provides regular access to about 45% of the population, and other public and charitable organizations provide health care to another 5%. Formal health insurance coverage (public or private) is very low, particularly in comparison with other Latin American countries: the medical program of the Ecuadorian Social Security Institute (IESS) covers only 10% of the population, the Peasant Health Insurance Program (*Seguro Social Campesino*) reaches an additional 8%, and private health insurance companies and the armed forces each cover 2.8% and 0.7%, respectively (see Table 2). Family members are not generally covered through IESS, which is one of the reasons why health insurance coverage is quite low in Ecuador. Another reason is the low rate of IESS coverage, 28%, among the economically active population. The *Seguro Social Campesino* covers about 16% of the poorest quintile of the population. The IESS covers basically the top two quintiles of the population, and a small fraction in other quintiles. Overall, 79% of the population is not covered by any health insurance in Ecuador.

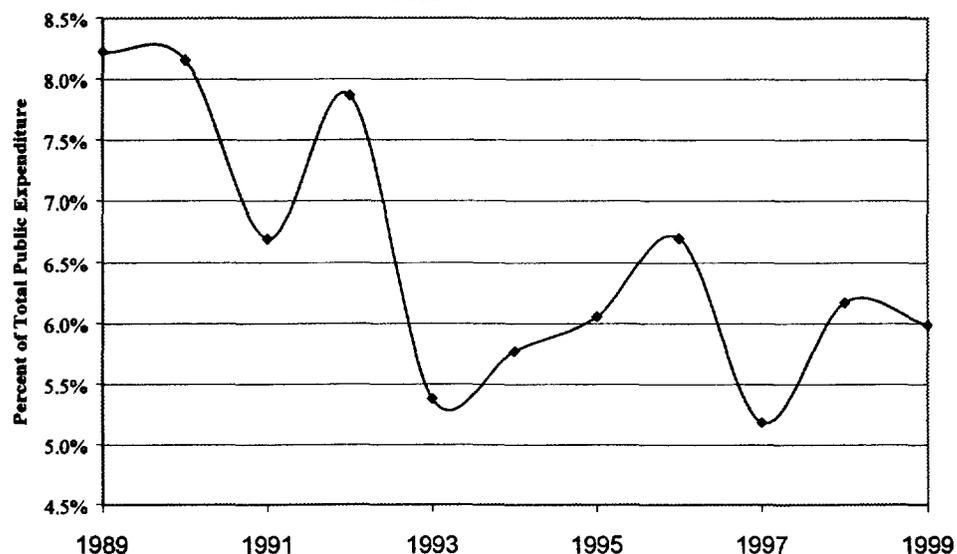
¹ Health in the Americas (1998).

Table 1. Health Indicators for selected Latin American Countries											
	Chile	Cuba	Costa Rica	Ecuador	Bolivia	Peru	Colombia	Venezuela	Argentina	Brazil	Paraguay
Mortality rates											
Infant (per 1,000 live births, l.b.)	13.0	7.9	11.8	39.4	59.0	43.0	24.0	22.0	20.9	39.8	36.0
Children 1-4 (per 1,000)	14.8	10.7	27.3	48.3	81.0	68.0	29.6	25.0	24.3	44.2	47.0
Maternal (per 100,000 l.b.)	25	33	29	159	390	265	87	56	44	114	123
Infrastructure (% pop)											
Access to drinking water	85	92	100	70	61	70	80	79	65	69	39
Access to excretal disposal	98	90	100	57	46	74	66	72	75	67	32
Hospital beds (p/1,000 pop)	3.1	6.0	...	1.6	1.4	1.8	0.8	2.3	4.6	3.5	1.5
Physicians per 10,000 pop	11.0	53.0	14.1	13.2	5.8	10.3	9.3	24.2	26.8	12.7	4.9
Diseases											
Tuberculosis incidence (per 100,000 pop)	10.3	7.6	16.0	60.4	91.5	112.8	24.5	-	16.4	27.6	18.0
Malaria pop. in risk areas, %	-	-	36.0	24.7	40.7	45.6	39.5	4.2	0.7	4.6	29.6
Source: Health in the Americas (1998). Notes: Mortality rates are from 1997, and maternal mortality from 1992-1997. Infrastructure indicators are from 1995 for all countries. Tuberculosis information (BK+) is for 1996, and Malaria for 1997.											

Table 2. Health Status and Use of Health Care facilities								
	Per capita Expenditures Quintiles					Area of residence		Overall
	Poorest	II	III	IV	Richest	Urban	Rural	
1. Children under 5 years old								
Immunization (%)								
Tuberculosis	88.1	96.2	95.3	98.9	98.2	93.2	92.4	92.8
Diphtheria-Tetanus-Pertussis	85.5	87.8	92.3	92.6	97.6	89.6	89.5	89.5
Poliomyelitis	84.7	85.6	91.5	91.0	96.9	87.9	88.7	88.3
Measles	69.8	71.2	75.4	78.3	83.0	74.9	72.2	73.7
Sickness in last 2 weeks (%)								
Had Diarrhea?	25.2	27.4	26.0	21.2	23.3	24.0	26.6	25.1
Location of service, if sick								
Public Hospital or Center	15.1	19.1	21.9	15.0	12.9	17.4	16.7	17.2
Private Clinic or Physician	6.4	11.1	16.0	24.2	37.7	18.9	9.6	14.4
Pharmacy and other	14.2	16.9	17.3	12.4	08.5	14.8	14.9	14.8
At home	64.3	52.9	44.9	48.3	41.2	48.9	58.9	53.5
Any Respiratory Sickness?	39.5	45.7	43.0	47.6	48.8	45.0	42.3	43.8
Location of service, if sick								
Public Hospital, etc	21.7	27.5	20.8	14.3	7.0	21.5	18.1	20.2
Private Clinic	5.9	10.9	18.3	24.3	42.6	21.2	9.8	16.3
Pharmacy and other	16.8	12.5	17.2	15.3	5.7	16.7	10.9	14.3
At home	55.6	49.1	43.8	46.2	44.7	40.6	61.3	49.3
2. Individuals older than 5 years old								
Sick during last month %	44.7	44.8	47.9	45.1	42.4	43.0	47.7	45.1
Had malaria? %	1.3	0.7	0.4	0.1	0.1	0.3	0.9	0.7
Type of attention, if sick %								
Self-medicated	31.7	29.3	30.6	24.9	23.8	26.2	31.2	28.6
Public	14.9	15.5	16.0	18.6	15.5	15.7	16.3	15.9
Private	10.3	17.1	18.8	25.7	31.2	23.0	15.6	19.4
Pharmacy, other	9.4	15.8	16.6	15.9	12.5	17.2	10.4	13.9
Access to services, if sick								
Transportation time (minutes)	41.6	35.7	41.7	37.3	35.7	36.0	41.7	38.4
Waiting time (minutes)	57.8	42.4	36.2	32.0	33.1	25.5	60.0	39.8
Health Insurance enrollment								
Private	0.1	0.4	1.3	2.7	12.9	4.8	0.3	2.8
IESS	1.0	3.2	6.9	12.5	23.5	12.5	2.6	7.9
Peasants Social Insurance	16.2	12.8	10.8	3.7	1.9	0.6	21.5	10.1
Army and Police Insurance	0.1	0.1	0.3	1.5	2.5	1.2	0.1	0.7
None	82.3	83.6	81.1	80.4	63.8	82.3	75.7	79.2
3. Reproductive Health								
All females 14-49								
Had Pap Smear %	21.7	31.5	42.3	48.9	54.4	47.9	26.9	39.3
Ever heard information on family planning? %	53.5	71.5	79.6	84.7	90.9	85.6	60.8	75.5
Females 15-20								
Had Pap Smear? %	0.9	5.9	5.1	7.9	5.6	6.8	2.8	4.9
Ever heard information on family planning? %	34.3	58.6	65.4	71.8	79.8	74.7	43.3	60.0
Source: Encuesta de Niveles de Vida, 1998								

Health Care Spending. In comparison with other Latin American countries, the proportion of GDP devoted to health care is among the lowest. Total health expenditures in the mid-1990s are estimated at about US\$78 per capita, or 5.2 percent of GDP. Recent estimates indicate that direct household expenditures amount to 37% of overall health spending--more than 70% for purchasing pharmaceuticals--while MOH spending accounts for 28% and IESS for 24%. The share of health care spending corresponding to the MOH has significantly decreased since the mid-1980s: as a proportion of GDP, from 1% to about 0.8%, and as a proportion of total government spending (excluding debt

**Figure 1. Public Expenditure in Health
Ecuador 1989-1999**



Source: Cuentas Nacionales, Ecuador.

service), from 8.2% to 5.5% (see Figure 1). As a result, MOH real per capita spending has declined by approximately 40%.

While the general medical care program under IESS spends about US\$87 per affiliate, MOH must stretch its resources much further, allowing average per capita spending of about US\$20. The Ecuadorian poor suffer a disproportionately high incidence of disease, causing a correspondingly disproportional spending of their income on health care; the urban poor spend an average of 12% of their total household expenditures in health care and the rural poor 17%, as opposed to less than 10% for the non-poor in both areas.

MOH expenditures can be grouped in three categories: Operational; Equipment, Machinery and Infrastructure; and Transfers and Loans. Operational expenses represent 85%-90% of health spending, while Equipment, Machinery and Infrastructure account for 6.5%, and Transfers and Loans for about 5%.

Desegregated data shows that expenditures in medicines and other medical supplies have decreased from 7.1% of total MOH expenditures in 1993 to 0.2% in 1996. Since

1993, personnel (not administrative) expenditures have remained around 64%. This suggests that expenditures in medicines and other medical supplies have been reduced in order to keep up personnel expenditures, hence reducing the quality of care provided in public facilities and transferring their costs to the patients in form of user charges.

Access to Health Services Among the Poor. Access to private and public health services is limited for the poor. Table 2 describes the type of health care that sick individuals are receiving by expenditure level and location of residence. While traveling times are not substantially longer for the poor and rural population, waiting times are much longer, raising important concerns about the quality of care provided. On average, rural individuals take 6 additional minutes to get to a health center, but then must wait an average of one hour compared to a 25 minutes wait for their urban counterparts.

Self-care and self-medication are widely common in Ecuador, especially for the poor. Self-medication and health counseling at the pharmacy represent the most chosen health alternatives for the extreme poor in Ecuador (41% overall), and these practices are very common in the treatment of children who suffer from diarrhea or respiratory sickness, representing 80% and 72% of the health care contacts, respectively, for these illnesses. (see Table 2).

Important differences are observed in reproductive health practices and family planning information across socioeconomic levels. In the poorest population quintile, only one out of five women in reproductive age have ever had a Pap smear, while half of those in the richest two population quintiles have been given the test. The statistics on "family planning information ever heard" indicates that only one-half of poorest females have such exposure. These figures are even more dramatic among women between 14 and 20 years old, which represents a latent problem to be addressed. These differences partially reflect the reproductive health care practices in rural areas, and the different access to information as a function of socioeconomic status.

Substantial differences in the ability to detect sickness are suggested from the uniform self-reported morbidity indicators across socioeconomic groups. As the poor and extreme poor are generally less educated they may tend to report lower morbidity rates, or to delay treatment due to financial constraints. In this sense, health status of the poor is not only lower but also underestimated, and addressing this problem may help in reducing the costs of future necessary medical care.

Equity of Health Expenditures

Two types of evidence are provided to evaluate the equity of health expenditures. First, the incidence of public health benefits across population quintiles is examined. Then, a canton-level data set on public health expenditures is analyzed to examine whether the government spends more in poorer *cantones* or in those with a larger fraction of indigenous rural population.

Health Expenditures Across Population Quintiles Evidence a Regressive Pattern. Using measures of spending patterns across population quintiles and the 1998

LSMS, the aggregate distribution of health spending across population quintiles is shown in Table 3. Each row indicates how each type of spending (private or public) is allocated across different quintiles. The private share is larger than the public share among the poorest and richest population quintiles, suggesting that both groups rely on their own resources to deal with health problems. The problems for the poorest quintile might be access (time, transportation, travel,) and cost (foregone wages and fees), while for the richest quintile the challenge might be making decisions on the basis of perceived quality of health care.

Both public and private spending are highly unequal. Approximately 51% of private spending and 38% of public health spending is done by the fifth quintile alone, and while public spending is perhaps somewhat less unequal, the resulting aggregate health spending is very unequal. The poorest 40% of the Ecuadorian population get less than 20% of national health spending, while the wealthiest 20% of the population gets about 45% of these resources.

	Poorest	Q ₂	Q ₃	Q ₄	Richest
A. Public Spending	7.6%	11.6%	17.6%	25.1%	38.1%
B. Private Spending	9.0%	10.0%	11.0%	19.0%	51.0%
C. Aggregate spending	8.4%	10.7%	13.8%	21.6%	45.6%

Source: Gragnolati (1999) and ECV, 1998.

Limited Targeting of Public Health Expenditures to Poor *Cantones*. The allocation of public resources to finance MOH's operational expenditures does not have any significant relation with the incidence of poverty across *cantones*. However, there is some evidence that those *cantones* with higher poverty incidence have also higher per capita health investment expenditures, but these items constitute only 11.5% on public spending in health in 1998 (see Figure 2).

Recent Reform Measures.

Measures to Increase Effectiveness of Public Spending and Target the Poor. Many of the poor cannot wait for the long-term overhaul of the health system. While most are able to bear the costs of basic health care for a period of time by using informal credit arrangements or sacrificing other goods--often food--the current situation is unsustainable. If the deep cuts in the MOH budget are not redressed, access to basic health services by the poor would be further curtailed. In the short term, in conjunction with a greater and sustained commitment of resources for the MOH, the effectiveness of existing levels of funding can be improved.

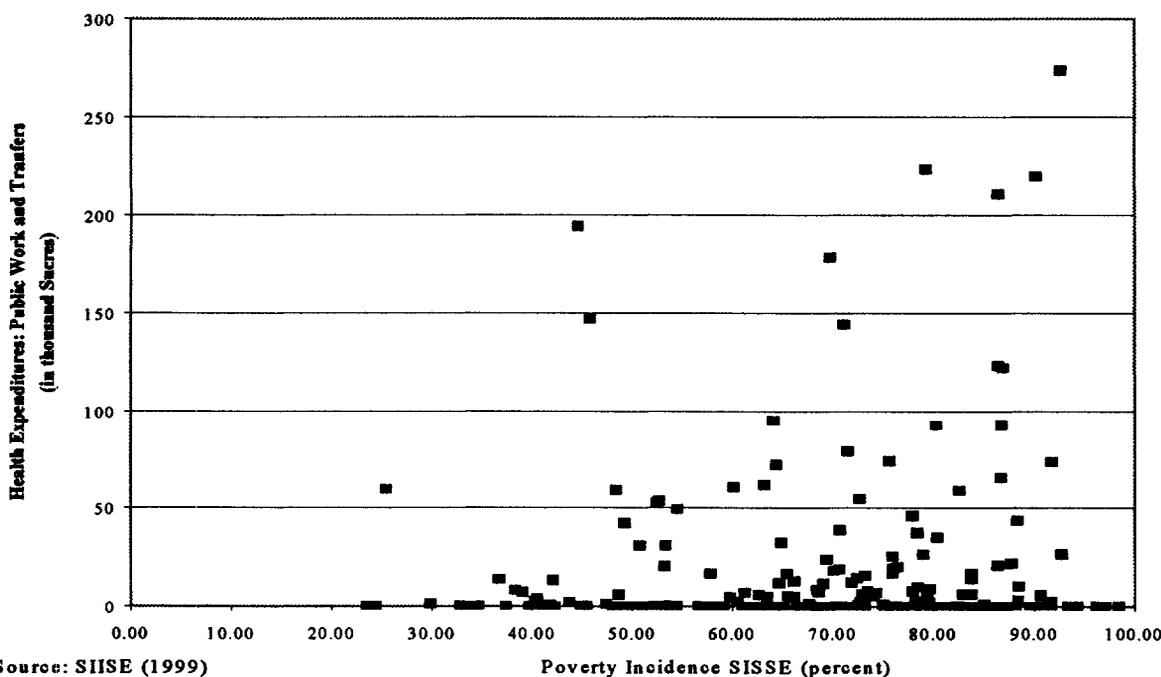
Reforming health programs has the greatest potential for directly improving the health and nutrition status of the poor. Given limited resources, the most economically efficient way to reduce the disease burden in Ecuador is by supporting programs that provide the largest reduction in mortality and morbidity per *sucre* spent. In view of Ecuador's health profile, MOH efforts, both in terms of traditional public health activities and personal health services, need to be targeted at specific maternal and childhood problems, as well as particular adult health programs.

Building upon the experience from the World Bank-financed II Social Development Project—Health and Nutrition (FASBASE Project), the Government has defined a program of essential services formed by those interventions that cost-effectiveness analysis has shown to be the very best investments for health: a set of key public health interventions, such as the expanded program of immunizations, micronutrient supplementation, and health and nutrition education; as well as basic clinical services, such as integrated management of the sick child, pre-natal, child delivery and post-natal care, promotion of reproductive care, including family planning services, treatment of sexually transmitted diseases, and treatment of infections and minor trauma.

This approach to expand health care coverage would help avoid the pitfalls of classical universality, whose promise of “everything for everyone” has proven to be unsustainable even in the richest countries.

Public finance of such a program in Ecuador is an effective mechanism to reach the

**Figure 2. Poverty and Public Expenditures in Health Services
Ecuador - 1998**



Source: SIISE (1999)

poor since they are disproportionately affected by the disease burden of the conditions listed above and, because of large family sizes (on average, 3.6 children per woman), they would benefit disproportionately from prenatal and post-natal care, child delivery, and childhood services. In addition, by giving MOH and other public programs expenditure priority for a program of essential services targeted at risk groups, e.g., pregnant women and their unborn, nursing mothers, infants and young children, the foundations for all subsequent human capital formation in Ecuador can be built. To maximize the impact of this approach, efforts need to be concentrated on the poor regions of the country.

Organizational Measures. A major change in the government view of the health sector was stated in the new 1998 Constitution. It notes that the State guarantees the promotion and protection of health through food safety, water supply and basic sanitation, and the permanent and uninterrupted access to health services, in accordance with principles of equity, universality, solidarity, quality and efficiency. In addition, public health services will be provided only to those unable to pay for such services and no one would be denied emergency services. It is also stated that the National Health System will be formed by public, autonomous, private and community-based entities and such system will operate in a deconcentrated, decentralized and participatory manner.

The centralized functions of MOH cover the regulation, control and delivery of services to the population in the prevention and cure of diseases. Consistent with the institutional framework set forth in the Health Code, the Municipalities Law gives powers to the Municipalities, within their jurisdictions, for regulating and delivering water for human consumption, and for sanitation, and, in coordination with the MOH, for regulating hygiene and other related health matters including the hygienic and healthy operation of businesses dealing with food, and public buildings in general.

During the 1990s two complementary laws were enacted which provide an enabling framework for decentralization and implementation of the organizational reforms in the health system: the 1993 Law of the Modernization of the State, Privatization, and Delivery of Public Services by the Private Sector and its Regulations; and the 1997 Decentralization and Social Participation Law. Under these legal instruments, the Central Government transferred its powers and functions under the following regimes:

- **Decentralization**, which consists of the delegation of political, economic, administrative and financial management powers and duties from the Central Government to sub-national governments (provincial or municipal). Decentralization is defined as "a transfer of functions to a functionally or geographically decentralized entity, and such decentralization includes also the power to create new entities to discharge functions which were originally centrally assigned." Executive decrees are required for such decentralization.
- **Deconcentration**, which consists of the delegation of administrative and financial functions from the Central Government to its own dependencies. In this framework, the Ministries are required to delegate, within economic or geographic regions, and through

ministerial resolutions, its powers and responsibilities with the only specific requirement that: (a) the geographic scope (boundaries) where the delegate will act be specifically mentioned in the legal framework; and (b) the prior approval by the Ministry of Finance and Public Credit of the budgetary transfers related thereto be granted.

In this sense, the Constitution posed a serious challenge for policy makers to actually reach these goals. The main components of the organizational reform supported under the World Bank-financed Modersa Project, can be described as political and administrative decentralization, economic decentralization, and hospital autonomy.

Political and Administrative Decentralization. A major step in the decentralization process has been the integration of public and private providers into the Municipal Integrated Health Care Networks (MHCN), which involve substantial community participation. These networks have been managed by a *Junta de Salud* (Health Board) that coordinates services and information among health providers in order to guarantee essential interventions. The responsibilities of the Health Boards are: (i) development of a local health plan (including organization and financial arrangements); (ii) categorization and registration of health care users; (iii) development of new health care financing mechanisms (such as a local health fund); and, (iv) supporting the modernization of management structures and practices (information, quality assurance mechanisms, human resources).

The following instruments have been essential for the public and private integration. First, the Health Boards have determined the scope of the *basic health package* and specified its components according to the epidemiological characteristics of the region. The price of such package is then estimated following *Cost Manuals* generated in the Modersa project. The Health Board decides the volume of the required service, i.e. number of people covered by such package, and incorporates private providers for the *delivery of basic package* interventions. This stage uses *standard contracts and procedures*, which are also provided by the project, which clearly specify type of payment, incentive schemes, and quality control mechanisms.

An example of the decentralization can be observed with the creation of the Centralized Health System in the Canton Tena, where substantial community participation was observed (See Box 1).

Box 1. Centralized Health System in the Canton Tena

On November 7th, 1997 the Junta de Salud was established, having the Major as the President and the Director of the Health Area of Napo as the alternate President. The structure of the Junta includes a Health Assembly with political control, the Board with management power, and the Technical Team with responsibilities on the execution. The decentralization required legal instruments as the Ministry-level agreement with the Municipality of Tena, and an *Ordenanza* to delegate power to the Junta de Salud.

A first *Plan* was constructed based on the citizen's participation through Canton Level Assemblies, Rural Workshops, Technical Workshops, Topic-specific agreement boards, consulting and opinion polls.

This Junta has four components: Healthy Lifestyles and Environments (involving promotion, prevention and community participation), Services Network (organization and enrollment of users, entitlement of services, hospital modernization, and consolidation of the fluvial-system), Support System (management, information and human resources) and the creation of the *Fondo Local de Salud*.

The functioning of the *Fondo de Salud* included the registration and categorization of the population, the definition of the *basic package* and its cost, establishing a subsidy and co-payment system, the operational management of the *Fondo*, and contracting registered providers.

An interesting innovation was observed in the subsidy and co-payment system, since there are six potential discount cases based on the socioeconomic evaluation: 0, 25, 50, 80, 90 and 100%. For the Ecuadorian system as a whole only four cases are possible: 0, 25, 50 or 100% discount on the tariff. This is evidence that with enough entitled flexibility, local *Juntas* might be able to establish more precise categorization procedures with appropriate discount schemes. These guarantee both cost-recovery and efficiency gains (in the sense of being able to discriminate on prices).

The management of the *Fondo* involves a Manager, a Medical Supervisor, a financial-administrative head and a secretary. The seed-fund is composed of Modersa 60%, local government 10%, co-payment 20% and central government and other institutions 10% reaching about US\$ 2.2 Million.

Source: Ministry of Public Health (1998)

Economic Decentralization and Hospital Autonomy. Recent decentralization and state modernization laws have opened opportunities for reforming public hospitals. Although a large number of public hospitals require substantial improvements, the MOH, with support from the MODERSA Project, has also set up hospital autonomy demonstration models in various cities: in Quito, Enrique Garcés Hospital and P.A. Suarez; in Cuenca, Vicente Corral Moscoso Hospital; in Guayaquil, El Niño and Guayaquil Hospitals; and in Tena, José María Velasco Ibarra Hospital, following specified criteria, for eventual replication throughout the country. In the initial phase, the

goal is to strengthen hospital management in order to improve technical efficiency and quality of care.

Substantial cost differences were found among providers, even within the MOH hospitals (see Box 2). The differences in the cost of ambulatory visits and hospitalization reflect differences in personnel qualification and economies of scale in large provincial Hospitals.

Box 2. Health Care Costs in Public Hospitals, Ecuador 1999		
(in thousand Sucres)		
Type of Specialized Hospital (Location)	Hospitalization Cost per patient	Ambulatory Visit
Provincial Hospital (Pichincha)	2,667	79
Provincial Hospital (Pichincha)	1,860	30
Specialized Hospital (Guayas)	2,861	79

Source: Lucio and Lasprilla (1999)

Deconcentration Instruments. The deconcentration of management and administrative functions from the MOH to the directors of its hospitals leading to a gradual autonomy of such hospitals is done through Ministerial resolutions issued as the respective hospital qualifies to participate under the MODERSA Project. The most important powers transferred are: to carry out the contracting of goods and services as authorized by the domestic procurement law; to approve the expenditures made under specific contracts for payments to be made out of the approved budget for that purpose; to appoint and discharge its employees (doctors, nurses and others); and, to plan and monitor implementation of investments (for improvements) of the respective hospital.

Scope of Hospital Modernization and Criteria for Selection. This decentralization included the modernization of public hospitals, which included the modernization of their organization and governance structure, management practices, management information systems, and improving health care quality in the medium-term. Hospital modernization also was to include: (i) implementing autonomous managerial arrangements including user participation; (ii) strengthening planning and decision making; (iii) developing human resources through selective training and continuing education, performance incentives, and career development; (iv) implementing financial administration systems and management information systems; (v) revamping cost recovery policies and systems and developing new resource allocation mechanisms for hospital care; and (vi) financing civil works, equipment, maintenance, and supplies for refurbishing and upgrading existing facilities.

Modernizing institutions with strongly entrenched traditions and weaknesses requires experimentation and careful selection of candidates for change. The MOH selected the initial demonstration hospitals using the Hospital Management Assessment

Instrument. This evaluation assessed seven key areas: (i) senior management capabilities; (ii) strategic planning; (iii) information systems; (iv) accounting and financial management; (v) human resources and labor relations; (vi) facilities and equipment; and (vii) relationships with the community and other providers. Other factors for selecting Hospitals for the project were: (i) have a MOH resolution with deconcentration of authority provision issued (i.e., transfer of powers from the MOH to hospital directors); (ii) hospitals classified as provincial or national hospitals; (iii) hospital director and staff willing to accept changes in organization, financial management, and quality improvements; (iv) hospital has strong influence in its region and credibility to serve as a model; (v) hospital director signed an agreement with MOH, when required, with endorsement of respective provincial/municipal authorities, to undertake modernization changes; and, (vi) willingness to be part of a “learning network” organized with other hospitals included in similar change processes.

Improvements in Hospital Accounting and Reporting Systems and the Extensive Use of Cost Recovery Mechanisms. Cost recovery in public hospitals is an important policy option that benefits both the health system itself and the public that uses it. With demonstrated improvements in quality, Ecuador’s MOH could eventually be able to achieve a significant percentage cost-recovery of recurrent costs. To this end, in the demonstration hospitals, support is provided to develop a revised system to charge and collect fees, including legal safeguards that would allow hospitals to manage autonomously the revenues generated by user charges. The MOH has developed a Fee Schedule that includes both Total Costs and Reference Fees (*Tarifas Referenciales*) estimates for each intervention. The difference is that the Reference Fees include only operational costs excluding medical personnel expenses.

As the blind use of such fees might have a regressive effect, the MOH allows hospitals to proportionately adjust the Fee Schedule according to the regional circumstances (Box 3). Moreover, a Socioeconomic Categorization of Users procedure was designed to apply discounts to the user fees according to family characteristics (Box 4).

Box 3. Fee Schedule for Selected Procedures		
(thousands of Sucres)		
Procedure	Cost	Total Reference Fee
Cholecystitis (surgical)	270	110
Appendicitis (surgical)	700	280
Gastrointestinal endoscopy	260	104
Normal Birth	650	260
Elective Caesarean Birth	1,000	400
Tonsil extraction	444	200
Prostate biopsy	485	194

Source: Annex 1. “Tarifario Referencial”.

**Box 4. Socioeconomic Categorization
for Health Care Users in Ecuador**

In May of 1999 the Ecuadorian government adopted criteria to classify users of public health facilities. This categorization required information about the residence (urban/rural, transportation, owned dwelling, access to water, sewage, electricity and phone), education (household head, number of children attending school or university, type of school), household demographics (female headed, number of dependents, disability, chronic diseases), and, occupation and income (job location, household income, durable goods, financial assets). Questions on each item assigned "points" which may accumulate to a total ranging from 0 to 210 "points." Public subsidies were applied as follows

Category	Point	Paid by User (%)
A	Less than 50	Free service
B	50-100	25% of the Reference Fee
C	101-125	50% of the Reference Fee
D	126-180	100% of the Reference Fee
E	More than 180	100% of the Total Cost

Individuals holding a *Bono Solidario* are entitled to Category A. Individuals enrolled in a public or private health insurance correspond to Category E.

Source: "Annex 2. Criterios para Categorización Socioeconómica." Acuerdo 1292 – Ministry of Public Health.

Promoting Allocative Efficiency in Hospitals. The current budgeting system in the MOH hospitals does not promote allocative or technical efficiency (Lucio and Lasprilla, 1999). Budgets are based on historical spending patterns and are not based upon the output of the hospital. Changing the method of paying hospitals is one possible way to improve both the technical and allocative efficiency of hospitals. To this end, the MODERSA Project is supporting: (i) development of a payment methodology; (ii) implementation of "shadow prices" to acquaint hospitals with reimbursement based upon output; and (iii) gradual implementation of new hospital financing methodology. For example, initially the payment rate would be set equal to total hospital budget divided by total number of discharges. All participating hospitals would receive the same payment rate. The uniform payment rate would be used until it can be refined to include additional factors such as case mix, cost of living, and perhaps hospital-specific factors. The purpose of this initial payment rate would be to get hospitals accustomed to working under a per case administration payment system. It would not be used to actually pay hospitals, but instead, it would be used to simulate what a hospital would receive under a per discharge basis. It would also allow time to refine the payment method.

Improving Hospital Governance. There is agreement among key stakeholders that important hospital decisions should be made closer to the population served to improve flexibility and responsiveness to the specific needs of the diverse geographical areas and population groups in the country. In order to improve decision making in hospitals, the following measures have been implemented: (i) development of a decision-making framework to support greater autonomy of selected public hospitals by redefining the relationship between MOH and the Provincial and Municipal Health Boards or Councils, autonomous health entities and individual hospitals, with respect to key hospital governance decisions; (ii) implementation of one or more governance models that would allow regional authorities and local communities to share greater responsibility for the governance and management of demonstration hospitals; (iii) design and implementation of improved management processes supported by management information systems, including Total Quality Management (TQM) initiatives, that would support the strengthening of cost accounting, performance improvement and measurement, and reporting systems in the demonstration hospitals; (iv) design and establishment of hospital management educational programs that train individuals for positions as senior hospitals and health system leaders, managers of clinical and administrative departments, and technical support staff; and, (v) strengthening of the educational program infrastructure in hospital and health system management.

Human Resource Management. Overall, the MOH concentrates 23.2% of its labor force in health services, the IESS 11.7%, and other private for-profit institutions 35 %. Out of 16,000 physicians in Ecuador, the MOH and the IESS account for about 6,600 physicians in the system compared to 6,000 in private health provider businesses (OPS, 1999). The main problems observed in the human resource management are the lack of labor incentives to provide a health service of improved quality, the inability of Hospital directors to choose an appropriate labor mix between administrative and medical personnel, and the lack of a career profile in the public sector (Lucio and Lasprilla, 1999). These problems are determining factors in the high turnover of qualified personnel, the percentage share of public and private jobs, and other labor arrangement problems to be addressed.

With support of the MODERSA project, the decentralization is encouraging output-based incentives--which still require legal instruments--that delegate power to hospitals for hiring, for management of layoffs, for decision-making on training, and for information systems to organize these decisions. As the project involves other public and private institutions, contracts with providers specify appropriate incentives and accountabilities. The process is intended to move the incentive system from one based on fixed salaries and budgets to a scheme where risk is shared between providers and users and salaries are subject to those risks (partial- and full-capitation).

The experience of Colinas del Norte suggest potential avenues for reform in the human resources management that need to be strengthen (see Box 5).

Box 5. A Public HMO: The Community System for Integral Health in Colinas del Norte

The Community System for Integral Health (Sistema Comunitario de Salud Integral, SICSI) in Colinas del Norte builds off of the Municipal Health Council model and seeks to improve the incentive environment wherein health workers and service recipients interact. It targets one neighborhood with about 2000 families north of Quito. The SICSI operates like a small public health maintenance organization (HMO) in which families pay small monthly fees to become members of a clinic. Physicians are paid their usual monthly base salary plus bonuses for a) each new member family and b) each individual attended and service rendered.

A physician in a project clinic continues to receive her basic monthly salary independent of her productivity. For each new paying affiliated member family, she receives a monthly bonus of 0.1%. This encourages the physicians to help sell the program in the communities they serve, and quite likely, to treat members better than non-members. In addition, physicians are paid for each service rendered, within certain limits. They receive s/1,250 per consultation up to a limit of s/500,000 (or 400 consultations) per month. Finally, no more than 40% of the additional pay for consultations may relate to morbidity, leaving 60% for "public health" consultations.

Affiliated families pay about US\$2.50 per month, for which they receive a comprehensive array of health services including preventive care, pediatric care, and pre- and peri- natal care. The local clinic is the main point of contact but has referral rights to the local hospital. By contrast, non-affiliated families continue to be served in the traditional manner; that is, a system with co-payments for most services. In the first four months of the project, 700 families have affiliated with the clinic, and about 400 of these families pay the monthly fee regularly. Families eligible for the Bono can affiliate without paying the fee (in the same manner that if they are not affiliated they do not have to make most co-payments).

In addition to the encouragement of HMO-style efficiency incentives, another promising development is the cooperation on related service provision (such as pre- and peri-natal care) that the project has helped forge between the local clinics in the Area de Salud and the hospital geographically located within it.

Source: Gershberg (1999)

Measures to address the problem of inadequate health insurance coverage.

Universal coverage is a basic goal of all health systems. In Ecuador, there is widespread support for an increase in formal coverage through mandatory health insurance, under public and private schemes. This arrangement is ideal for a number of reasons. First, increasing health insurance coverage would reduce the burden of health spending on many uninsured families who are poor or near-poor. Second, because the uninsured tend to delay treatment until they are quite ill and have no choice but to seek medical help, this results in higher family outlays than if the illness had been prevented or treated at an earlier stage; universal coverage would attempt to alleviate this problem. Third, under current arrangements, there is no protection against catastrophic illness costs, which is the basic purpose of health insurance. Fourth, health insurance enables solidarity and cross-

subsidization among beneficiaries. Fifth, the number of people relying on the MOH and other public programs, as the “insurers of last resort” will decrease, allowing for a more equitable targeting of public spending on health.

Building upon the current legal framework, three scenarios have been discussed before:

- Scenario 1 achieves the greatest expansion of health insurance by extending IESS coverage to the 1.7 million dependents (400,000 adults and 1.3 million children) of the 1.1 million current IESS affiliates, as well as 1.2 million self-employed individuals and 2.4 million of their family members (2.1 million children and 300,000 adults). Within this scenario, health insurance under IESS would cover 57 percent of the Ecuadorian population, up from the 10 percent it currently covers, and together with other existing sources of coverage (e.g., private health insurance, armed forces, Peasant Social Insurance), 67 percent of the population would be covered.
- The magnitude of this IESS expansion, even with 10 percent of dependents costs being absorbed by the dependents themselves (either through a monthly or annual premium payment or through user fees), and with the self-employed financing 67 percent of the cost of their coverage, would still require the IESS to increase the compensation base that is assessed from the current 60 percent to 91 percent to raise approximately US\$172 million. The resources from the MOH and other public programs would be used to fund services for the uninsured population (but the amount of spending per person would be more than 3.4 times higher in real terms than current spending levels, from US\$17 to US\$57). To achieve public spending per uninsured person equal to three-fourths the per capita spending level of IESS, MOH’s spending per uninsured population would have to rise from US\$10 at present to US\$48 (assuming that resources from other public programs remain constant in real terms). As a result, the MOH would need to increase its spending by US\$61 million in real terms to reach this level of spending per uninsured person. This would require a 38 percent increase in government funding and 10 percent cost recovery. MOH expanded resources could be used to offer a more comprehensive program of essential services than the one discussed above.
- Scenario 2 offers a less expansive coverage extension by including dependents of current IESS affiliates and the self-employed (but not their dependents). This would result in 45 percent of the population receiving coverage, with 55 percent remaining uninsured (about 6 million persons). For IESS, this more limited expansion requires more limited funding--the proportion of the compensation base that would need to be assessed to fully fund the portion not paid for by the dependents and the self-employed is 82 percent. Given the sizable population for which the MOH and other public programs retain responsibility, this scenario sets a more modest target for spending per uninsured person of one-third the spending level of IESS (from US\$17 to US\$31). The MOH could achieve this goal with a 26 percent increase in government funding (about US\$30 million), along with 5 percent cost recovery.
- Scenario 3 offers the most limited coverage expansion, extending IESS coverage only to IESS dependents, and thus achieving 35 percent overall coverage (65 percent of the

population would be uninsured). This would require approximately US\$85 million from IESS if dependents financed 10 percent of their costs, and could be achieved by increasing the compensation base that is assessed to 76 percent. While the per uninsured person spending target remains the same as that in Scenario 2 (one-third the level of IESS per capita spending), public spending per uninsured person rises to US\$27 from US\$17 at present. The required MOH funding increase from the government to reach this level is higher because of the larger uninsured population. Even with 5 percent cost recovery in MOH facilities, the government funding for MOH would need to be increased by 34 percent over 1994 levels in real terms (about US\$39 million).

Table 4. Options For Health Insurance Reform

	CURRENT	SCENARIO 1 Comprehensive	SCENARIO 2 Moderate	SCENARIO 3 Incremental
Population to be covered by IESS	10% Current Affiliates	57% Current affiliates + Dependents; self- employed + dependents	35% Current affiliates + dependents; self-employed	25% Current affiliates + dependents
Salary base for IESS contributions calculation	60%	91%	84%	76%
Approx. IESS per capita spending (1994 US\$)	\$117	\$76	\$92	\$81
Uninsured population under responsibility of MOH and other public programs	80%	33%	55%	65%
Public dollars spent per uninsured person (94 US\$)	US\$17	US\$57	US\$31	US\$27
MOH costs recovery/community financing needed	-	10%	5%	5%
Approx. additional government funding required for MOH (1994 US\$)	-	US\$44 MM	US\$30 MM	US\$39 MM

Source: Márquez et al (1999).

The Urgency of Reforming the IESS. Given the major institutional weaknesses found in the social security system, the expansion of health insurance coverage as envisioned above would have to go hand in hand with a major restructuring of IESS, including the separation of its pension and medical schemes, and the identification of alternative mechanisms to manage those schemes (e.g., the administrative and financial aspects of health insurance coverage would be handled by various institutions, who would be separated from those that would actually deliver health care services). Moreover, private health insurance schemes would have the complementary role of providing coverage to those persons who desire and can afford to have access to a broader network of providers or additional services than those offered under IESS.

Strengthening Alliances for Health Improvements. Another area of less attention is the health service to those poorer households that are mainly serviced by either self-medication or by local pharmacists. While the reform may reach those already serviced by public and private health providers, there is a need for designing innovative mechanisms to exploit the ubiquitous pharmacy network to reach the poorest households. Within the framework of the health reform, this may mainly consist of having the local pharmacies represented in the Health Boards, as well as establishing a network of trained health consultants to improve the common self-diagnostic and self-medication practices. Another alternative is to exploit the work that the NGO have been doing on health. There are an important number of institutions that might be interested and probably able to act as intermediaries in health service provision.

Box 6. Social Organizations and Health

Social Organizations in Ecuador include Local NGOs, Popular Organizations, International NGOs, Church Organizations and Private Business organizations. While there is a large variation among these institutions in both the fraction of projects, is clear that the proportion of organization is much larger than the fraction of projects. This evidences either the relatively large cost of projects or the fact that several health-oriented NGOs are executing projects of different nature. For example, there are 317 local NGOs related to health, but only 191 projects being executed.

Organizations and Projects related to Health		
	Organizations	Projects
NGOs	48.1	21.8
Popular Org.	44.5	7.3
International NGOs	50.0	13.6

Source: SIOS - ALTERNATIVA. Organizaciones Sociales de Desarrollo (1997)

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Annex 6: Incidence Analysis of Social Expenditures and Public Subsidies in Ecuador

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August 1999

I. Introduction

The objective of this section is to examine the extent to which the poor benefit from public spending. We focus our attention on three major activities which have redistributive impact in the Ecuadorian society. First, we examine government's expenditures in education and health. Second, we look at targeted safety nets programs. Third, we examine the price subsidies on cooking gas and electricity. In the Appendices, we discuss the methodology used and show concentration curves and additional tables.

We base all calculations on the third round of the *Encuesta Condiciones de Vida* (ECV), which was conducted in 1998¹ and on information gathered by a World Bank mission to Ecuador in July 1998.

We examine the incidence of government activities by per capita expenditure quintiles. As a reference, Table 1 contains some consumption characteristics of the Ecuadorian population important for the benefit-incidence analysis. Poorer households tend to live in rural areas and to have bigger families. The distribution of consumption is highly skewed towards the richer households: the population in the richest quintile consumes about 20 times more than the population in the poorest quintile and appropriates 60% of overall resources.²

Table 1. Distribution and Characteristics of Households by Expenditure Quintile

	Consumption Expenditure Quintile					Overall
	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	
Population Share	20.0	20.0	20.0	20.0	20.0	100
Percentage in Urban Areas	22.5	42.6	62.1	73.8	88.2	57.8
Household Share	15.0	17.2	19.0	22.4	25.9	100
Household Size	5.9	5.2	4.8	4.2	3.5	4.5
Per Capita Expenditure Share	3.2	6.9	11.1	18.8	60.0	100

Source: ECV 1998

¹ A fourth round of ECV is currently being fielded.

² See Appendix 2 for the Lorenz Curve of per capita expenditure.

Because of the extremely unequal income distribution, it is not difficult for a subsidy to be progressive in the sense that its removal would worsen the overall income distribution in society. Rather, we evaluate the progressivity of public subsidies and expenditures by looking at which part of society obtains the largest share as our benchmark is that the poor should be the major beneficiaries.³

³ See Appendix 1 for further discussion on the methodology and the definition of progressivity.

II. Social Expenditures

The provision of basic social services is an activity through which the government can have a positive effect on the welfare of its people. Cost recovery of social services in Ecuador is very low since public school tuition and health fees are either minimal or absent. Social expenditures are hence financed by general taxation.

1. Education

Primary and secondary school in Ecuador last for six years each; university is four to six years depending on the field. In addition, a one year pre-primary school (kindergarten) program is also available. Public primary schools are universally available. Secondary schools are available in cities and towns, but often not in the more remote rural areas. Universities are concentrated in the major cities.

Table 2 presents the unit subsidy that each child enrolled in public school receives from the government every year, by level of education.⁴ Because of the much fewer number of enrollments in universities, the unit subsidy that a university student receives is about five times higher than the subsidy received by a child at the beginning of the education career.

Table 2. Unit Subsidy by Level (US\$)

	Unit Subsidy				
	Pre-primary	Primary	Secondary	University	Overall
1998	117.9	117.9	274.1	552.3	159.4

Source: SINEC

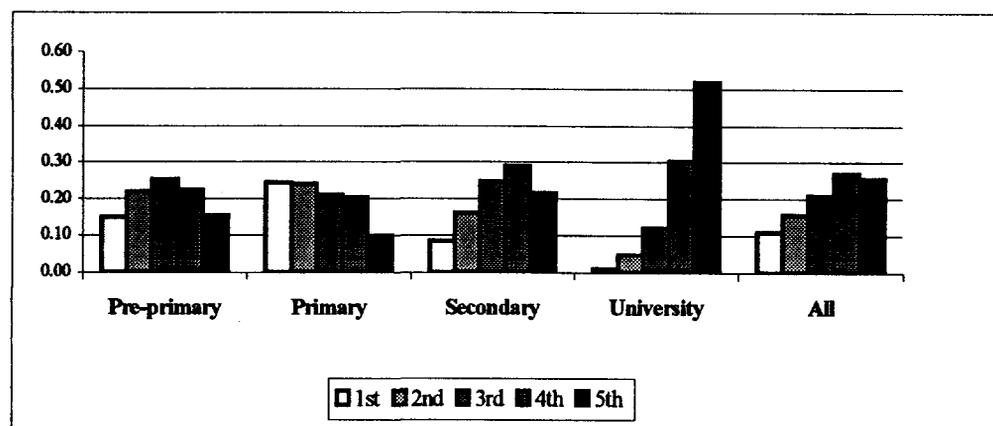
The public education system is defined to include fiscal, fiscomisional and municipal schools.

Figure 1 reveals that overall public expenditure on education in Ecuador is regressive: the poorest 20% of the population receives only 11% of the government total spending on public education, while the richest 20% receive 26% of government spending. This finding is driven by the combination of higher enrollment rates in secondary schools and universities among the richer Ecuadorians and high unit subsidies per student in each of these levels. Public spending on primary schooling is progressive due to the fact that school attendance is close to universal but many more richer families send their children to private schools.⁵ The more unequitable distribution is associated with university expenditures of which the poorest 40% of the population receive only 6%.

⁴ The statistics of the Ministry of Education treat expenditures in pre-primary and primary schooling as one category.

⁵ See Appendix 2 for education net enrollment rates and concentration curves.

Figure 1. Share of Government Spending on Education



Source: SINEC, ECV

Three findings emerge from the analysis of ECV data, which need to be taken into account to evaluate the role of public education as a socially equalizing force in Ecuador.

- The education process lasts longer for richer children . For example, the expected number of years spent in secondary school is six years and two years for children in the richest quintile and children in the poorest quintile respectively. The corresponding figures for university education are 3.7 and 0.1 years.⁶
- At all education levels, enrollment rates in private schools are higher among children of richer households. If use of private schools translates into higher quality of education and higher returns to education later in life, income inequality between the rich and poor is likely to increase.
- Rich households spend more on the education of their children than poor households. Households incur out-of-pocket expenditures to gain access to and improve the benefits of subsidized education. Private expenditures are indeed inequitable in Ecuador. The lowest quintile receives only about 8% of total household investments in primary education, and the upper quintile as much as 55%.⁷

The end result is that rich children in Ecuador receive a longer and better education, as compared to poor children.

⁶ See Table 6 in Appendix 2 for the expected number of years of enrollment in each education level.

⁷ See Appendix 2 for the concentration curves of private spending on education.

2. Health

Although it has made notable progress in health in recent years, Ecuador still lags behind other Latin American countries. Between 1960 and 1995 life expectancy rose from 55 to 68 years, but in 1995 the infant mortality rate was 36 per thousand as compared to 26 per thousand in Colombia and 12 per thousand in Chile.

The basic Ecuadorian health care system consists of the public system and private providers. In the public sector, the Ministry of Health (MSP) and the Social Security Institute (IESS) are the main actors. Health care at all public institutions is nominally free of charge, though users often have to pay for supplies, laboratory work, etc., especially in MSP facilities.

Use of health services is low: according to the 1998 ECV only 10% of the population visited any health facility in the month prior to the interview. Because of the historically low and declining quality of the public sector, many people who visit health facilities rely on the private sector (45% of the visits are to private clinics). Even among the poorest groups, a considerable proportion attends private clinics (27%).⁸

Table 3. Unit Subsidy by Type of Public Health Care Facility (sucres/)

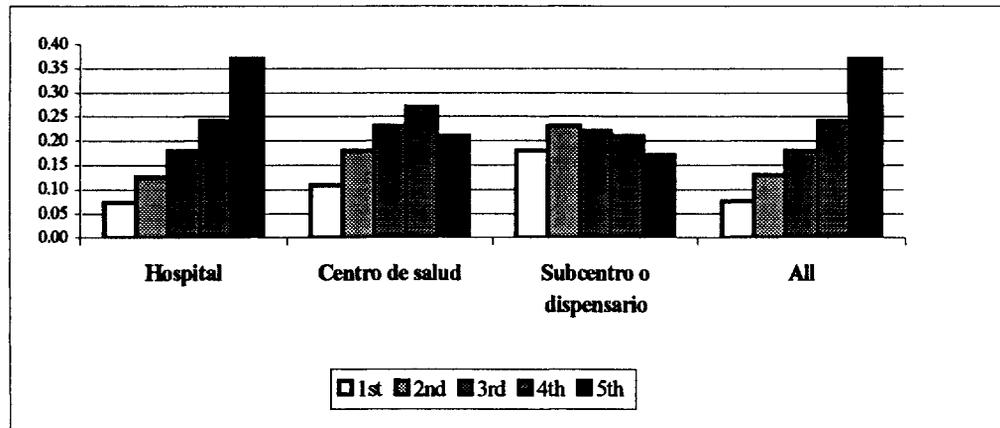
	Unit Subsidy		
	Hospital	Centro de Salud	Subcentro de Salud
1999	268,348	11,814	9,511

Source: MSP

The unit cost of a visit to a public hospital is more than 20 times higher than the unit cost of a visit to a smaller public health facility (*centro de salud* or *subcentro de salud*). To calculate the incidence of health expenditures, we use information from the ECV about the *last* visit to a public health facility. Within public health care facilities, the rich tend to use hospitals, while the poor are more likely to visit health sub-centers and, to a smaller extent, health centers. We find that public expenditure on public health care facilities is regressive with only 8% of total spending arriving to the poorest 20% of the population.

⁸ See Table 7 in Appendix 2.

Figure 2. Share of Government Spending on Health



Source: MSP, ECV

The ECV also contains information on participation to different kinds of health insurance. For each expenditure quintile Table 4 shows the participation rates to four different health insurance schemes: (1) Private insurance; (2) *IESS Seguro general*, (3) *IESS Seguro campesino*, and (4) *Seguros ISSFA* (Social Security Institute of the Armed Forces) or *ISSPOL* (Social Security Institute of the Police). More than 80% of the people in lowest quintile do not have health insurance.

Table 4. Participation Rates to Different Health Insurance Programs

	Consumption Expenditure Quintile					Overall
	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅	
Private Insurance	0.1	0.4	1.2	2.8	12.9	3.5
IESS Seguro general	1.2	3.4	7.5	13.3	26.5	10.4
IESS Seguro campesino	16.3	12.8	10.1	4.5	1.9	9.1
Seguro ISSFA or ISSPOL	0.3	0.1	0.5	1.6	2.9	1.1
None	82.1	83.4	81.2	78.7	60.9	77.2

Source: ECV

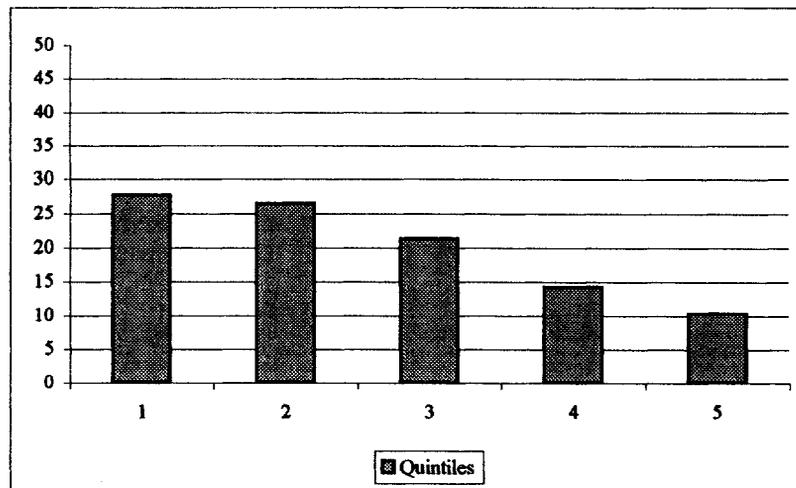
III. Safety Nets Programs

As part of its poverty alleviation strategy, the Government of Ecuador has developed a number of social programs that seek to expand access to or improve the quality of basic services. Most of the more recent social programs have explicitly stated objectives of reaching the poor and targeting elements were built into their design.

3. *Bono Solidario*

The *bono solidario* was introduced in September 1998 to mitigate the negative impact on the poor originating from the elimination of public subsidies on gas, fuel and electricity. The *bono* consists of a cash transfer to poor mothers with children and to people aged 65 and over. In April 1999 the transfers were increased to 150 and 75 sucres for mothers and adults respectively, and were extended to the disabled population. The *bono solidario* is the main social cash transfer program in place in Ecuador.

Figure 3. Share of Government Spending on *Bono Solidario*



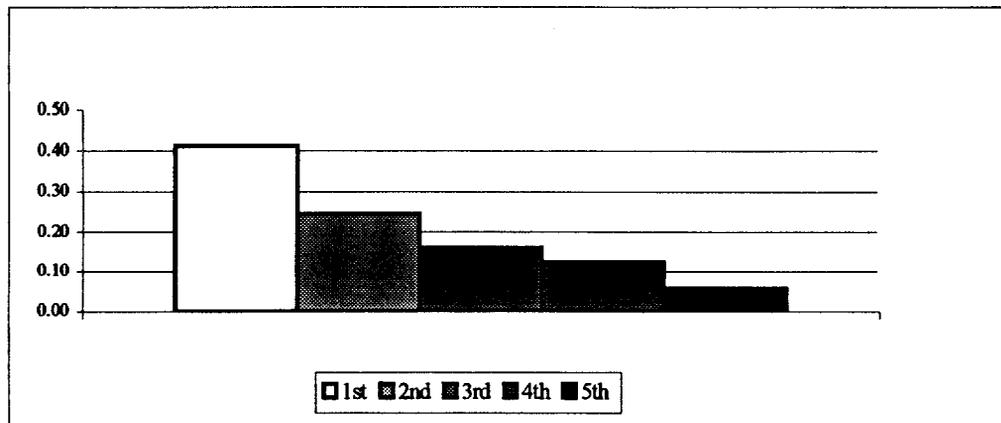
Source: ECV

Overall, the *bono solidario* appears well targeted, at least with respect to other social programs. The poorest 40% of the population receives 54% of the total disbursements (to both mothers and adults). The component to adults is especially progressive: the poorest quintile receives 38.5% of the disbursement (results not shown). However, there is considerable leakage to people in the richer quintiles. In particular, the *bono* seems to be reaching urban areas disproportionately and its coverage in rural areas is much inferior than it should be to reach all the most vulnerable groups.

4. *Colación Escolar*

The School Breakfast Program has been operated by the Ministry of Education since January 1990 with support of the World Food Program. The objectives of the program are to provide nutrition supplements to children in primary schools considered at risk for their socioeconomic conditions as a stimulus to school participation and academic achievement. The Ministry of Education has recently launched a program of *almuerzo escolar* with similar objectives.

Figure 4. Share of Government Spending on *Colación Escolar*



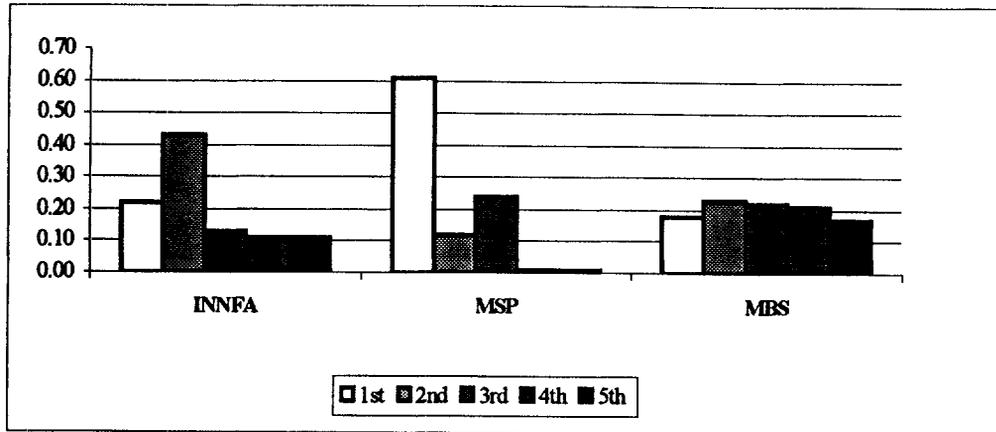
Source: ECV

The *colación escolar* is well targeted and leakage to the richer quintiles is very small.

5. *Alimentos Gratuitos*

The Government of Health (MSP), the Ministry of Social Wellbeing (MBS) and the National Institute of Children and the Family (INNFA) offer free food to children below school age.

Figure 5. Share of Government Spending on *Alimentos Gratuitos* by Source and Income Quintile



Source: SINEC, ECV

The progressivity of programs of *alimentos gratuitos* varies across institutions. Programs from the Ministry of Health (MSP) are the best targeted: the poorest quintile benefits of 61% of overall spending, while the richest quintile receives only 1%.

IV. Price Subsidies on Cooking Gas and Electricity

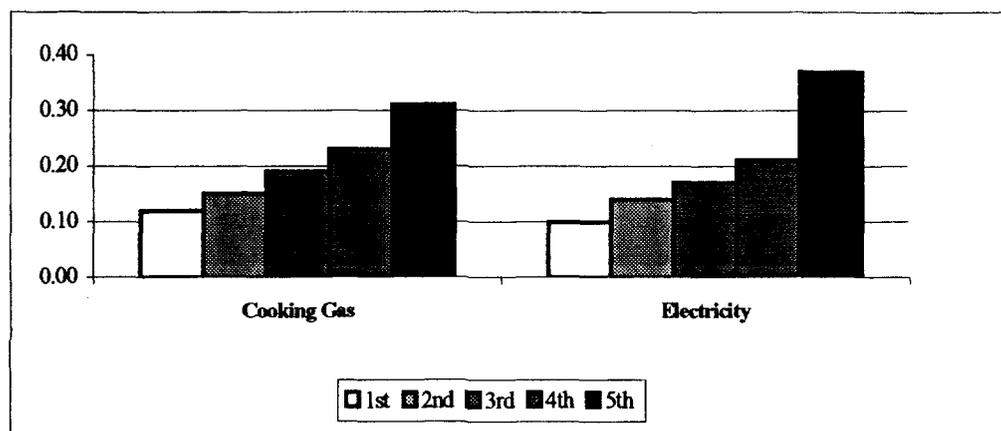
Traditionally, the government has given price subsidies to the consumers of cooking gas and electricity by fixing the consumer price at a lower fair than the production cost. The cooking gas subsidy has been provided by setting the price of canisters at roughly one-fifth the combined production and distribution cost. The electricity subsidy has been provided as discounts in the unit household consumption charge, with higher percentage discounts applying to households with lower monthly usage.

These subsidies were not only costly but also inappropriately targeted. The benefits from the price subsidies have been higher in urban areas, although the largest poverty incidence is in rural areas, and have been enjoyed by all consumers, including the richest households. Moreover, neither subsidy reached Ecuador's poorest, i.e. those who did not consume any cooking gas or electricity.

In 1998, the Government increased considerably the price of cooking gas and electricity in order to eliminate the subsidies.⁹ However, the new price was fixed in nominal sucres and the subsidy reappeared after the price of oil, the exchange rate and the inflation rate increased.

Price subsidies for cooking gas and electricity are highly regressive. Apart from the share of subsidy distributed for industrial use (7.0% and 25.0 % of the overall subsidy for cooking gas and electricity respectively), subsidies for residential use benefit disproportionately richer households, which consume both gas and electricity in larger quantities. Only 27% of the cooking gas subsidy and 24% of the electricity subsidy were estimated to flow to the poorest four deciles of the population.

Figure 6. Share of Subsidies on Cooking Gas and Electricity (Residential Use)



Source: ECV 1998

⁹ These subsidies are currently estimated to be 1.1% (electricity) and 0.7% (cooking gas) of GDP (IMF 1999).

V. Summary Table

Table 5 summarizes the results of the incidence analysis by showing the share of social expenditures and public subsidies received by each expenditure quintile.

Table 5. Share Received by Each Expenditure Quintile

	Consumption Expenditure Quintile [ECV98]				
	Q ₁	Q ₂	Q ₃	Q ₄	Q ₅
SOCIAL SECTORS					
(1) Education					
Pre-primary	0.15	0.22	0.25	0.22	0.15
Primary	0.24	0.24	0.21	0.20	0.10
Secondary	0.08	0.16	0.25	0.29	0.22
University	0.01	0.05	0.12	0.30	0.52
All	0.11	0.16	0.21	0.27	0.26
(2) Health					
Hospitals	0.07	0.13	0.18	0.24	0.38
Centros de salud	0.11	0.18	0.23	0.27	0.21
Subcentros o dispensarios	0.18	0.23	0.22	0.21	0.16
All	0.08	0.13	0.18	0.24	0.37
SAFETY NETS					
(3) Bono Solidario*					
Mothers	0.25	0.28	0.22	0.15	0.11
Eldery	0.39	0.19	0.19	0.13	0.10
All	0.28	0.27	0.21	0.14	0.11
(4) Colacion Escolar	0.41	0.25	0.16	0.12	0.06
(5) Alimentos Gratuitos					
INNFA	0.22	0.43	0.13	0.11	0.11
MSP	0.61	0.12	0.24	0.02	0.01
MBS	0.18	0.23	0.22	0.21	0.16
PRICE SUBSIDIES (Residential Use)					
(6) Cooking gas	0.12	0.15	0.19	0.23	0.31
(7) Electricity	0.10	0.14	0.17	0.21	0.37

Source: ECV 1998

Data are for ECV99 second trimester income Quintiles

VI. References

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Appendix 1 Methodology

Estimating the benefit incidence of public spending involves three steps (Demery 1997):

Step 1: Estimating unit subsidies

The unit cost of a service is defined as total government spending on a particular service divided by the number of users of that service. Information comes from government statistics on different social services. Whenever the value of the unit subsidy is not available, we estimate the share of each type of service produced (distribution of volume produced) received by each income quintile instead of the share of actual expenditures (distribution of value produced). The two coincide if the unit subsidy is fixed across the income distribution.

Step 2: Identifying users

Information on who uses the service is obtained from the 1998 and 1999 ECV.

Step 3: Aggregating users into groups.

To describe how the benefits from public spending are distributed across the population, we aggregate individuals into expenditure quintiles (for the services provided to individuals) and we aggregate households into expenditure quintiles (for the services provided to households). The ECV, which is modeled after the Living Standards Measurement Surveys, provides the information needed to calculate household per capita expenditure.

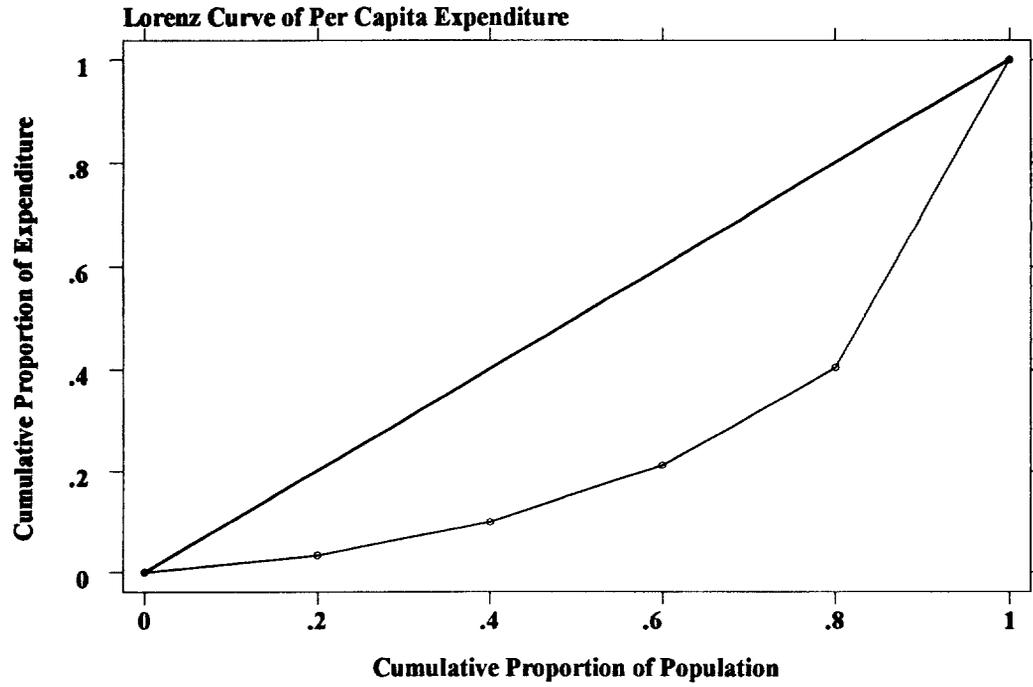
Concentration curves

Concentration curves show the cumulative proportion of social expenditure or subsidy that is received by the cumulative proportion of the population ranked by per capita expenditure: The 45° diagonal is the line of “perfect equality”, that is the line that would be obtained if each quintile received the same amount of social expenditure or public subsidy.

By comparing the concentration curves with the 45° diagonal, we can judge the targeting to poorer groups. If the curve lies above the diagonal, it means that the poorest quintile gains more than 20% of the total subsidy (and the richest quintile, less than 20%). Distributions below the diagonal signify poor targeting. We evaluate the ‘progressivity’ or ‘regressivity’ of social expenditures and subsidies by estimating the share that is received by the poorest rather than by comparing the distribution of expenditure and subsidies with the distribution of income.

Appendix 2
Concentration Curves and Additional Results

Per Capita Expenditure



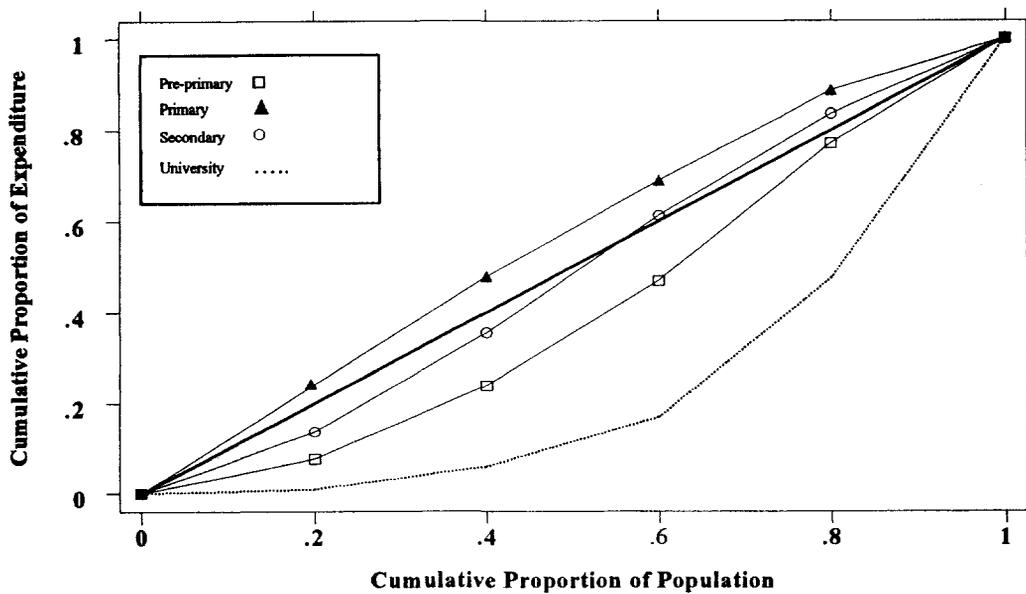
Education

Table 6. Net Enrollment Rates and Expected Number of Years Enrolled by Level of Education (Pre-primary, Primary, Secondary and University)

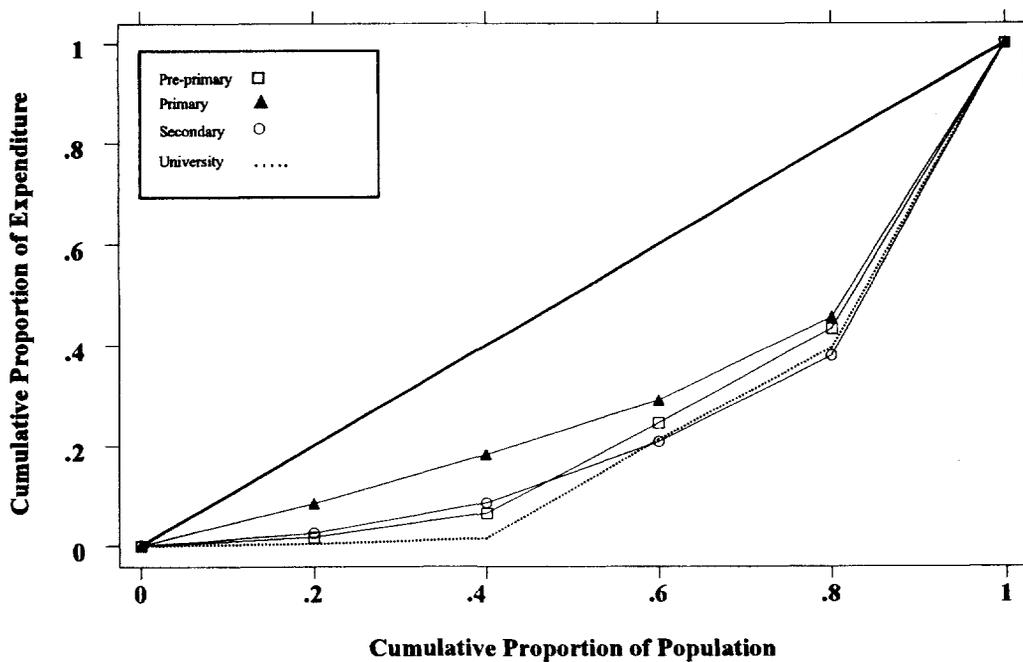
	Consumption Expenditure Quintile														
	1st			2nd			3rd			4th			5th		
	PUB	PRI	All	PUB	PRIV	All									
PRE-PRIMARY															
5	16.3	2.3	18.6	33.3	6.5	39.9	39.0	11.0	50.0	37.0	21.7	58.7	26.3	46.3	72.6
<i>Expected Years in Pre-primary School</i>	0.2	0.0	0.2	0.4	0.1	0.5	0.5	0.2	0.7	0.5	0.3	0.8	0.3	0.6	0.9
PRIMARY															
5	9.8	0.6	10.4	9.8	3.9	13.7	8.4	6.7	15.1	13.0	7.6	20.6	6.3	5.2	11.5
6	61.3	3.6	65.0	60.3	18.3	78.6	68.4	18.4	86.8	65.0	30.1	95.1	38.8	60.0	98.8
7	77.4	5.5	82.9	86.4	8.0	94.4	74.4	17.9	92.3	64.9	33.3	98.2	35.9	63.0	98.9
8	85.0	7.5	92.5	78.6	15.1	93.7	78.1	20.5	98.7	76.0	23.2	99.2	41.3	58.7	100.0
9	88.4	6.4	94.8	82.0	14.7	96.7	72.5	20.8	93.3	72.6	24.8	97.4	46.6	53.4	100.0
10	85.6	4.8	90.4	89.3	9.2	98.5	83.8	13.5	97.3	66.7	32.5	99.1	43.5	56.5	100.0
11	83.3	4.3	87.7	84.6	7.4	91.9	79.8	15.5	95.3	72.7	19.1	91.8	40.6	56.4	97.0
12	55.4	6.3	61.7	60.4	7.4	67.8	39.5	9.2	48.7	39.1	7.8	46.9	18.9	16.2	35.1
13	39.6	1.9	41.5	27.8	3.0	30.8	15.4	1.5	16.9	13.3	0.0	13.3	3.5	1.2	4.7
<i>Expected Years in Primary School</i>	6.3	0.4	6.7	6.0	0.7	6.7	5.3	1.3	6.6	5.0	1.8	6.8	2.8	3.8	6.6
SECONDARY															
12	10.9	1.7	12.6	20.9	3.0	23.9	39.5	5.9	45.4	40.6	10.2	50.8	32.4	31.5	64.0
13	18.8	1.3	20.1	29.3	5.3	34.6	58.5	6.2	64.6	62.8	16.8	79.6	43.5	47.1	90.6
14	28.7	0.7	29.4	37.3	4.2	41.5	52.8	13.8	66.7	61.1	23.0	84.1	50.0	41.8	91.8
15	24.2	3.1	27.3	40.6	6.0	46.6	59.7	12.6	72.3	58.7	17.4	76.1	38.5	43.3	81.7
16	17.5	2.5	20.0	39.7	4.3	44.0	53.9	9.6	63.5	59.2	18.4	77.6	39.8	43.7	83.5
17	17.2	1.7	19.0	28.0	6.8	34.8	45.3	10.9	56.2	57.3	12.9	70.2	37.6	42.4	80.0
18	7.3	2.1	9.4	27.3	2.5	29.8	31.5	7.1	38.6	28.3	8.8	37.1	24.7	17.7	42.4
19	9.3	4.0	13.3	14.0	1.0	15.0	12.0	5.0	17.0	16.7	6.1	22.8	14.0	4.3	18.3
<i>Expected Years in Secondary School</i>	1.7	0.2	1.9	2.8	0.4	3.2	4.1	0.9	5.0	4.4	1.3	5.7	3.1	2.9	6.0
UNIVERSITY															
18	3.1	0.0	3.1	0.8	0.0	0.8	1.6	0.0	1.6	8.8	2.7	11.5	8.8	14.2	23.0
19	0.0	0.0	0.0	2.0	0.0	2.0	8.0	2.0	10.0	15.8	5.3	21.1	11.8	20.4	32.3
20	0.0	0.0	0.0	6.2	1.0	7.2	4.3	4.3	8.6	10.4	3.1	13.5	13.5	22.5	36.0
21	3.3	0.0	3.3	4.4	1.1	5.5	6.2	0.0	6.2	19.6	4.9	24.5	21.0	32.1	53.1
22	0.0	0.0	0.0	3.0	0.0	3.0	8.4	2.8	11.2	14.0	3.7	17.7	14.6	12.5	27.1
23	0.0	0.0	0.0	1.2	2.5	3.7	2.2	0.0	2.2	16.7	4.1	20.8	20.3	9.7	30.0
<i>Expected Years in University</i>	0.1	0.0	0.1	0.3	0.1	0.4	0.7	0.2	0.9	1.5	0.4	1.9	1.9	1.8	3.7

Source: ECV 1998

Concentration Curves of Public Spending by Education Level



Concentration Curves: Private Expenditure on Education



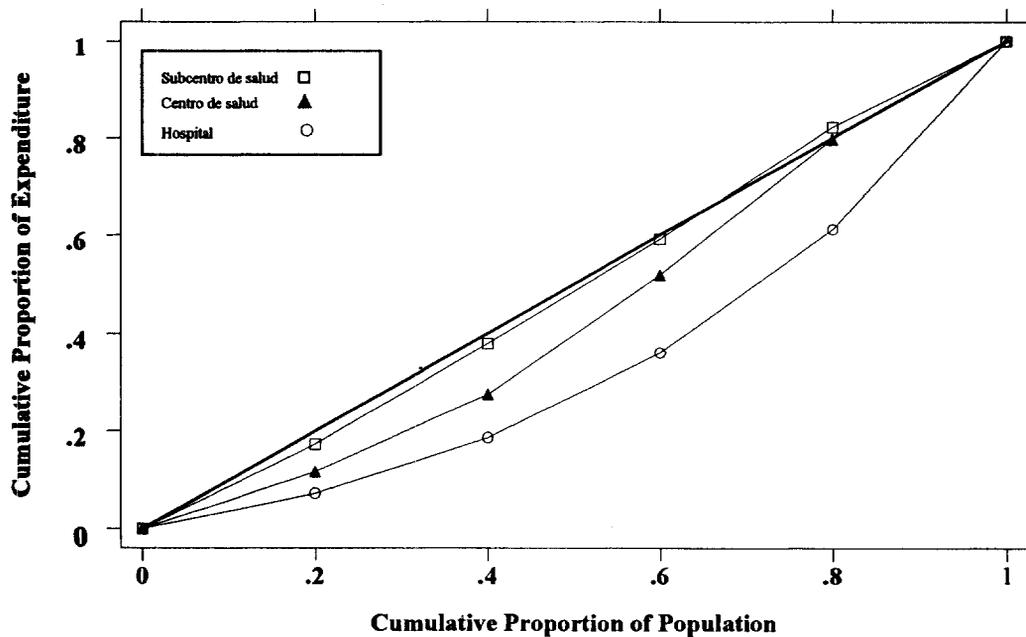
Health

Table 7. Health Visits (Percentage) in the Month Prior to the Interview by Expenditure Quintile.

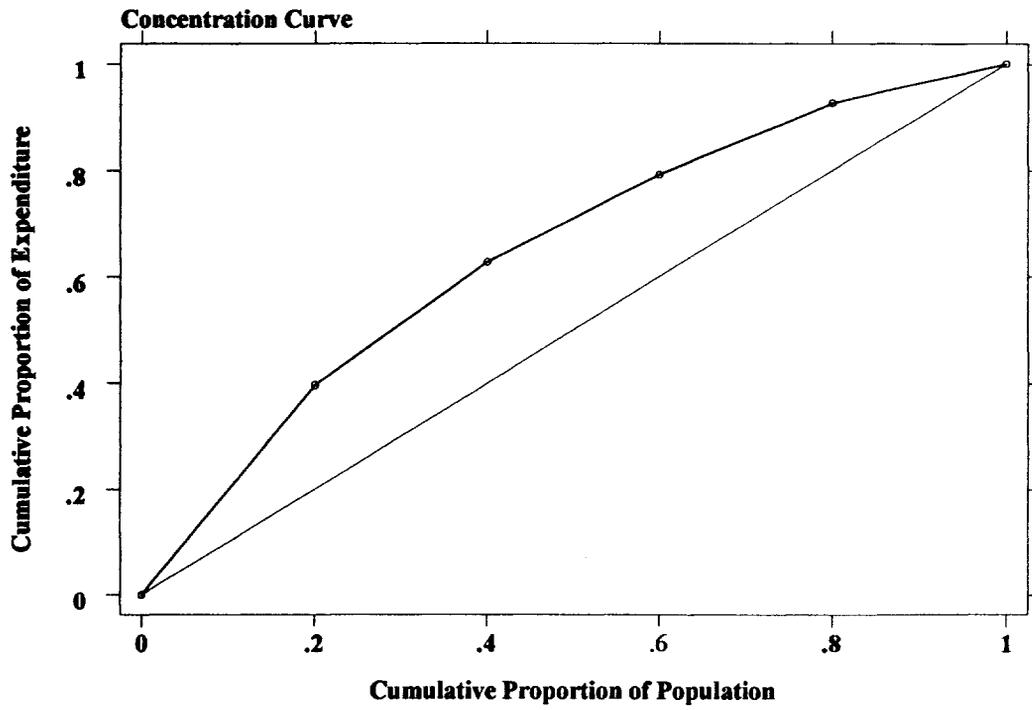
	Consumption Expenditure Quintile					Overall
	1st	2nd	3rd	4th	5th	
NO	95.1	92.6	90.4	86.4	82.0	89.3
<u>YES</u>	4.9	7.4	9.6	13.6	18.0	10.3
Private Clinic	26.7	27.7	35.1	47.3	60.9	45.2
Pharmacy, Home & other	14.0	16.1	11.2	14.4	18.7	12.6
<u>Public</u>	59.3	56.2	53.7	38.3	20.4	42.2
Hospital	32.6	39.5	45.5	51.0	67.2	48.1
Centro-de-Salud	20.6	22.5	24.1	26.2	17.5	22.4
Sub-Centro de Salud	56.8	38.0	28.3	22.8	15.3	29.5

Source: ECV 1998

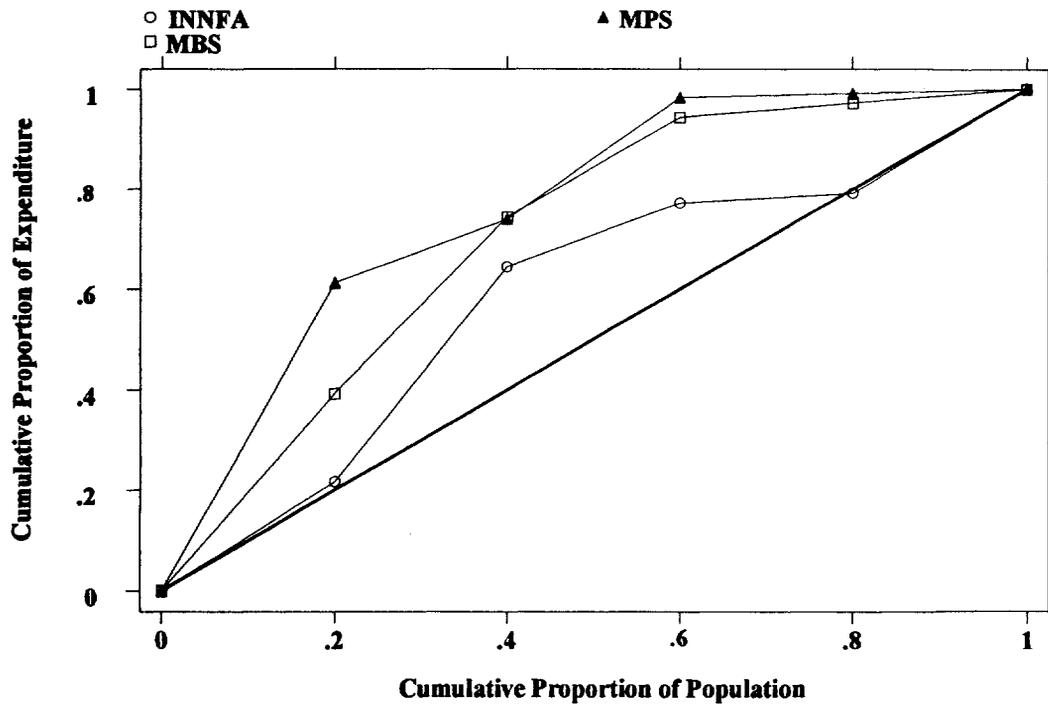
Concentration Curves by Type of Public Health Facility



Colación Escolar



Alimentos Gratuitos



Annex 7. Employment Generation in Ecuador

Mari Minowa
November 11, 1999

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Employment Generation in Ecuador

I. Criteria for Selecting Safety Net Programs

The Government has various alternative tools of intervention for providing income support and generating employment. They include, among others, programs such as food stamps, cash transfers and vouchers, public employment, micro-enterprise and self-employment assistance, and job training targeted to the poor. Governments need to assess the merits and demerits of each alternative program before deciding to implement specific interventions. The principal criteria for selecting among alternative measures would include the following:

- 1) **Administrative feasibility.** This depends on the detailed design of the program, the level of resources available for administration, the existing administrative capacity of the implementing entity, and the degree of imperfection that can be tolerated;
- 2) **Political feasibility.** This depends on how the program is promoted to the public, how coalitions of supporters or detractors are built, and the relative power of beneficiaries, suppliers, and administrators;
- 3) **Corresponding effects on the poverty strategy.** How will a safety net program affect, for example, the participants' labor supply, participation in other programs, and receipt of private inter-household transfers, and how will those changes affect markets and government finances? What will be the net effect on poverty reduction?
- 4) **Potential for reaching the poor.** Will the program reach significant number of the poor (coverage and exclusion error)? How much leakage of benefits will there be to the non-poor (inclusion error)?
- 5) **Tailoring the solution to the problem.** The program choice should address the real problem. Where the poor have suffered a loss of real wages rather than a loss of jobs, for example, transfers to the working poor may be more relevant than creating jobs. In the current case of Ecuador, however, both the real income loss and significantly increased unemployment need to be addressed. It is also important to note the heterogeneity of the impact for different groups.

In times of economic crises, an additional important factor to consider is the **speed** with which the program can be implemented to quickly deliver the much-needed protection to the affected people. This objective of quick response can be achieved easier if the framework of a safety net program has already been set up, and can be flexibly expanded to respond to greater demands whenever necessary.

The primary issue in designing and implementing a safety net program is how to deliver, efficiently and effectively, program benefits to the targeted groups. Thus, designing a cost-effective **targeting mechanism** is also a crucial factor for the success of a program.

In the following section, we will review the experiences of different types of income support/employment generation programs in other countries, with the objective of applying the lessons learned from those experiences to the current conditions in Ecuador.

II. Alternatives for Income Support and Employment Generation¹

A. Job Skills Training

Publicly funded job skills training may improve trainees' skills and employability. However, it can help the long-term unemployed and disadvantaged workers find employment only when the economy is improving and demand for such workers is expanding. Impact evaluation studies have found that the cost-effectiveness of these programs is generally disappointing. The real rate of return of these training programs is rarely positive, and they are no more successful than job search assistance programs in terms of post-program placement and wages, while they cost anywhere between 2-4 times as much.

The evaluation studies also have found that short-term training is not an adequate tool for updating and upgrading skills of workers displaced from declining industries. Training for youth generally does not have a positive impact and improves neither employment prospects nor post-training earnings. Taking costs into account, the real rates of return of these programs both in the short- and the long terms have been found to be usually negative.² Evaluations do show that small-scale, tightly targeted on-the-job training programs aimed at women and other disadvantaged groups among the long-term unemployed often offer the best returns among different types of training programs. However, when there is little prospect of finding employment after completing training, such programs are too costly and ineffective as tools of providing income support for the poor.

B. Micro-Enterprise Development

Micro-enterprise development programs are usually taken up by only a small fraction of the unemployed and are associated with high deadweight and displacement effects. Evaluation of these programs in OECD countries found that the failure rate of these businesses is quite high in most cases, though businesses that are assisted through mentoring and business counseling are more likely to succeed. As in the case of training for the long-term unemployed, assistance targeted to particular groups, such as women and older individuals, seems to have a greater likelihood of success.³

Nonetheless, as a tool for employment generation and/or income support in times of economic crisis, micro-enterprise development assistance or micro-credit programs are

¹ Very few countries in Latin America have legally or administratively enacted an unemployment insurance system. While unemployment insurance could be considered as part of a safety net, its role under the current conditions in Ecuador is limited to providing modest income support for those new poor laid-off from formal sector employment. There still remains a large segment of the poor who do not have employment contracts in the regulated sector.

² See Dar and Tzannatos (1998) for more details of evaluation results from OECD countries.

³ Also see Dar and Tzannatos (1998).

not the most cost-effective option. It is true, on one hand, that these programs achieve effective income transfer to the households that own businesses, and are likely to help expand both employment and incomes associated with the business. However, on the other hand, the productivity of resources will be lowest in a crisis period, since the firm's income and profitability depends on the overall level of economic activity.

C. Public Employment Programs

Public employment programs serve as a safety net, providing income transfer and/or stabilization benefits to the poor, while at the same time using the beneficiaries' labor to build infrastructure for development. The program effectiveness depends on the benefits, costs, and the way resources are raised to finance the program. The cost-benefit calculation must take into account the wage income of the participants, the costs of participation, and the foregone income from alternative sources. It must also take into account the impact of the program on the labor market and the structure of wages. One important design feature of the program is to keep the wage level sufficiently low so that the poor are self-selected into the program. Stabilization benefits depend on the timing of the program, and may be high even when the transfer amount is small.

Unlike job training programs or micro-enterprise development support, public employment programs mainly provide current benefits (temporary income) and are poor instruments as a permanent escape route from unemployment. Public employment programs are also expensive. As shown in Table 1, it costs 1.8 to 9.1 times the GDP per capita in these countries to create one temporary job through a public employment program.

Despite its relatively high cost, however, a public employment program can be an attractive alternative as a short-term safety net intervention for the following reasons: (a) it simplifies targeting so long as the wage rate is appropriately set to ensure self-targeting to the most needy; (b) it is possible to create long-run benefits through assets created and maintained by the participants; and (c) as work has social merit, it prevents welfare dependency and disincentive effects.

Table 1. Annual Cost of Job Creation through Public Employment Program

	Egypt	Honduras	Nicaragua	Madagascar	Bolivia	Senegal	Ghana
1. Cost/job (US\$)	1401	2120	2580	786	2700	5445	2122
2. Cost/job (PPP)	7212	9759	14302	3620	9388	12100	10610
3. Per capita GDP (US\$)	790	600	380	230	800	600	390
4. Ratio (1/3)	1.77	3.53	6.79	3.42	3.38	9.08	5.44

Source: Dar and Tzannatos (1998).

In designing a public employment program, careful consideration needs be given to various key features of the program. The features of a good public employment program would include the following:⁴

⁴ The list is taken from Ravallion, Martin, "Appraising Workfare Schemes," (??) 1998.

- The wage rate should be set at a level which is no higher than the prevailing market wage for unskilled manual labor in the setting in which the scheme is introduced.
- Restrictions on eligibility should be avoided. The fact that one wants work at this wage rate should ideally be the only requirement for eligibility.
- If rationing is required because demand for work exceeds the budget available at the wage set, then the program should be targeted to poor areas, as indicated by a credible poverty map. However, flexibility should be allowed in future budget allocations across areas, to reflect differences in demand for the scheme.
- The labor intensity (the share of the wage bill in total cost) should be higher than normal for similar projects in the same setting. How much higher will depend on the relative importance attached to immediate income gains versus (income and other) gains to the poor from the assets created. This will vary from setting to setting.
- The projects should be targeted to poor areas, and should try to ensure that the assets created are of maximum value to poor people in those areas. Any exceptions – in which the assets largely benefit the non-poor – should require co-financing from the beneficiaries, and this money should go back into the budget of the scheme.
- The performance of the program in reducing poverty should be monitored using careful evaluations.

The **wage level** is the most important variable in program design. It is critical in determining how well the program will be targeted to the poor. Maintaining the program wage at or below the level of the ruling market wage for unskilled labor in the local labor market is the best way to ensure this. In doing so, some effort should be made to determine the appropriate subsistence wage and the ruling market wage, and to find out how they relate to the legal minimum wage. Again, the wage rate should not be higher than the market wage for unskilled manual labor in agriculture or the informal sector during a normal year in the setting in which the program is introduced.

For example, in the “Trabajar” program in Argentina, the wage rate was set at 2/3 of the average wage for the poorest decile in the Greater Buenos Aires area. The maximum wage allowed is the national minimum wage. Low wage rates ensure that: (a) there is self-targeting of the poor; (b) incentives are preserved for taking up regular work when available; and (c) there is a wide coverage of the poor, given the available budget. A rigorous ex-post evaluation of the program found that the distribution of the benefit is decidedly pro-poor, even after taking into account the foregone income of program participants.⁵

Another example of a public employment program is the “Employment Guarantee Scheme” (EGS) in the Maharashtra state in India, which is often considered the most successful direct government effort at reducing absolute poverty in rural areas. If the

⁵ Jalan, Jyotsuna and Martin Ravallion, “Income Gains from Workfare: Estimates for Argentina’s Trabajar Program Using Matching Methods,” World Bank, 1998.

“Trabajar” program is an example of workfare in a medium income country where the emphasis is more on the value added of assets created through the program, the Maharashtra EGS is a program which focused more on the labor intensity of sub-projects and immediate income gains for the poor. Since the mid-1970s, the EGS has offered employment opportunities for unskilled workers who maintain rural infrastructure through small-scale irrigation and soil conservation projects, reforestation, and rural road construction. The program has been found to be well targeted and to provide sizable net transfers to the poor. However, a study has also found that a dramatic increase in the program wage in mid-1988 has made many of the poor worse off, as the budget constraint resulted in rationing of the benefit.⁶

(Appendix 1) presents the design features of selected workfare programs from Latin America and other regions. (Appendix 2) summarizes results of the impact evaluation studies for public employment programs in OECD countries.

III. Existing Programs of Employment Generation in Ecuador

A. Common Issues of Existing Programs

Currently, Ecuador has several public programs that could contribute to generating temporary employment. The Emergency Social Investment Fund (*Fondo de Inversion Social Emergente*, FISE) finances community social infrastructure projects. Special entities, COPEFEN and CORPECUADOR, have been created for reconstruction and rehabilitation of infrastructure affected by El Niño. There are also infrastructure components within the work of the Ministries of Education, Health, and Social Welfare, which could contribute to employment generation. Another obvious source of public infrastructure investment is the Ministry of Public Works, though their work tends to be large scale and more capital-intensive rather than human-intensive. The Ministry of Urban Development and Housing also invests a substantial amount in public housing construction. Finally, work carried out by municipal governments could also be used for broad-based employment creation.

While these programs have potential for employment generation for the poor, the Government has not yet developed a well-defined strategy to organize these programs under the explicit objective of public employment generation. If the institutional infrastructure of the existing programs were to be used for expanding public employment in the short-run, a helpful next step may be to identify a designated super-entity within the Government which has the mandate and power to coordinate these various ministries and other autonomous public entities, and to develop a scheme for generating temporary employment for the poor. In doing so, design features and institutional capacity of each program need to be carefully assessed to determine necessary modifications.

For each of these programs, Table 2 summarizes the targeting mechanism, program coverage, share of labor cost, estimated budget for FY99 and FY2000, and estimated unit

⁶ Ravallion, Martin, Gaurav Datt, and Shubham Chaudhuri, “Higher Wages for Relief Work Can Make Many of the Poor Worse Off: Recent Evidence from Maharashtra’s Employment Guarantee Scheme,” World Bank, 1991.

cost of the employment created. We will review each program in more detail in the following section. Here, we point to some common issues, identified while reviewing these programs, that need to be addressed if these programs are to function as part of the safety net for the unemployed and the poor. They include the following:

- **Lack of Clear Targeting.**

Some programs, notably FISE and the infrastructure components of the projects financed by international lending institutions in the education and health sectors, have explicit selection/targeting criteria based on poverty indices. However, most of the existing infrastructure programs do not have a well-established, poverty-based targeting mechanism. During 1999, much of the infrastructure investment has focused on the reconstruction and rehabilitation of buildings, roads, and bridges damaged by El Niño. The extent of damage, rather than any poverty indicator, has dictated the selection of projects. If these programs were to be used as instruments for a social safety net and income support for the poor, it would be necessary to develop a suitable mechanism of project selection and beneficiary targeting.

- **Budgetary Constraints Leading to Limited Coverage.**

Delays in the availability of funds have negatively affected program implementation. Particularly for the reconstruction and rehabilitation of infrastructure damaged by El Niño, there has been criticism for its slow progress, although part of the explanation may be the initial planning work required. The same budgetary constraints limit the scope of employment generation in a short-run.

- **Legal impediments for Efficient Program Implementation, Especially the Public Sector Contracting Law.**

Since the Public Sector Contracting Law (*Ley de Contratación Pública*) applies to the contracting of services in these infrastructure projects, administrative inefficiency in the compliance of the law tends to cause significant delay in contract processing. For these infrastructure projects to serve as effective public employment generation tools, a more flexible and streamlined contracting process is needed. This may include raising of the threshold costs of contracts to allow direct contracting or direct invitation; waiving of ex-ante approval of the National Comptrollers Office for smaller contracts; or decentralization of ex-ante approval authority to local governments. Certainly, the need for speed of implementation has to be balanced with the need to ensure transparent, fair execution of the program. However, the current situation, where the entire process of

Table 2. Assessment of the Existing Infrastructure Programs for Employment Generation

Program	Targeting Mechanism	Size/Coverage	Share of Labor Cost	Activity/Budget for FY1999	Activity/Budget for FY2000	Unit Cost of One Worker*day
FISE	Based on poverty index and prior benefits received, at the <i>parroquial</i> census zone level. Pre-allocation of funds at the <i>canton</i> level, based on poverty index.	(As of June 30, 1999) 1,039 contracts signed for US\$41.6 million. Of which, 585 projects completed a feasibility study, and 165 projects under implementation. Average project cost: US\$40,000. Maximum project cost: US\$250,000.	Labor cost share: 30%.	Initial total budget: 428 billion sucres. Of which 47 billion sucres for operational costs, and 381 billion sucres for investment. Expect to complete 1,000 projects (worth US\$40 million).	Based on the investment plan of FY99, US\$40 million worth of signed contracts will be outstanding. 25% of the total budget of US\$40 million will be transferred to CORPECUADOR.	US\$20
COPEFEN	No explicit targeting mechanism exists. Funds were allocated to municipal governments, ministries, and other public entities, by a directorate, consisting of the Vice president, President' delegate, a delegate each from MOP, MOF, and SEDES.	Total investment costs of US\$167.7 million for 1998 and 1999. (WB, IDB, CAF loans and counterpart funds.) Average project size: US\$15,000 for those implemented by municipal governments (42% of the total.)	30-35% depending on the size of the project.	(As of July 21, 1999) US\$85 million has been transferred to implementing entities. Remaining US\$76 million need to be transferred by the end of 1999.	None. (WB loan will close in the end of 1999.)	US\$18 (COPEFEN-Municipal Governments)
CORPECUADOR	No explicit targeting mechanism exists. "Plan Maestro" to be completed in August 1999. Division of labor: COPEFEN-rehabilitation, CORPECUADOR-reconstruction below altitude 1,000m, MOP-reconstruction above altitude 1,000m.	Average annual investment of US\$200 million is planned.	Yet unknown. Unless the master plan includes smaller (tertiary or community) road projects, the expected labor share is small.	Currently, has US\$30 million (of which US\$14 million transferred from COPEFEN).	Will receive 25% of the "Fondo de Solidaridad" allocation (Estimated US\$105 million). Additional source funds expected, but amount unknown.	N/A
PRONADER	Project areas selected based on: (a) concentration of small farmers; (b) high poverty level; and (c) potential for viable productive activities.	Total costs for the rural road component: US\$24.5 million over 8 years (1991-1999). Of the total of about 70 contracts signed for 1999, only 7 are large contracts (US\$250,000 or greater).	25-30%	US\$10.4 million.	None. (The WB financed project will close in June 2000.)	US\$9.

Ministry of Health	Reconstruction of basic health service infrastructure. Rapid initial diagnosis in areas selected for the FASBASE project, based on poverty indicators.	The project area covers about 2 million inhabitants (i.e. about 20% of the population.)	25-30%. Average wage for an unskilled worker: 30,000 sucres/day (US\$2.7/day). Average project duration is about one month.	US\$6.2 million of both WB financing and the counterpart funds. In addition, US\$20 million supplemental loan.	None, or remainder of the supplemental loan approved in 1999.	US\$20.
Ministry of Education	Reconstruction of schools damaged by El Nino. The COPEFEN/DINACE study identified 1,700 damaged schools. School infrastructure as part of the regular activity. Funding per demand, after satisfying technical evaluation of the proposal.	US\$22.5 million for school reconstruction during 1998-1999. The average project size is US\$22,500. All contracts have been less than 200 million sucres (approx. US\$18,000) allowing direct invitation.	40%. For each contract, about 35 laborers are hired. Average project duration is 3 months. 25%. (This labor cost divides into: 30% for professionals, 50% for skilled labor, and 20% for unskilled labor.)	US\$22.5 million for 1998 and 1999. Of which US\$18 million has been committed and US\$12.5 million has been disbursed as of July 20. US\$10 million (?)	None. Possible supplemental loan. N/A	US\$10. N/A
Ministry of Public Works	No explicit targeting mechanism exists. During 1999, 75% of the total investment is for the "reconstruction/rehabilitation" of infrastructure damaged by El Nino.	16 contracts have been signed for US\$34 million during Phase I, and 8 additional contracts signed during Phase II (since November 1998).	30% for rehabilitation of primary roads.	N/A	N/A	N/A
Ministry of Urban Development and Housing	N/A	93,000 worker*year for 170,000 housing units reconstruction, 42,000 worker*year for 100,000 housing units improvement.	N/A	N/A	N/A	US\$25.
Municipal Governments	N/A	Of total estimated revenue of about US\$500 million per year, at least US\$162 million, but most likely greater amount, is spent on infrastructure investment.	30-35%.	Roughly US\$500 million in total.	N/A	US\$18. (COPEFEN-Municipal Governments.)

Sources: Various interviews with, and data provided by, the program executing agencies.

hiring workers for a small social infrastructure project takes 6 months on average, needs to be improved to allow faster responses.

For those projects funded by multilateral financing agencies, the law allows that the terms agreed with the lending agencies supercede those in the national law. This should help the contracting of workers in emergency public employment projects funded by external financing.

- **Inadequate Institutional Capacity.**

Staff working on these programs could benefit from training in both their administrative and technical skills. Setting up clear and suitable project selection criteria and targeting mechanisms, for example, would require the technical assistance of an expert. Staff then will have to be trained to efficiently execute these mechanisms, including the management of an appropriate information management system for program monitoring.

B. Review of Existing Programs

In the short-run, during the remainder of 1999, effort should be made to maximize the temporary public employment generated by the existing social programs. Considering the current status of different programs, several among them can be identified as potential source of employment. In the following, we review these programs to assess whether they are suitable for protection and expansion, and their expected impact on employment generation.

1. FISE

FISE is one of the few programs of temporary employment creation which has explicit selection criteria based on poverty indices. More specifically, funds are initially allocated at the *canton* level based on the poverty index calculated from the 1995 household survey (LSMS) and the 1990 Population Census. Furthermore, each *parroquia* (or in the case of large urban *parroquias*, census zones consisting of 2,000 inhabitants) is classified into three categories of urgency based on the “unsatisfied basic needs” index. While the basic principles of the selection criteria need not change, the poverty indices need to be updated with the results of the 1998 household survey.

The Implementation Completion Report of the first phase of the FISE project maintains that employment generation for both skilled and unskilled workers in construction is the clearest quantifiable impact of the project. However, the Government has not monitored any quantitative measure of employment generated through the program. According to a rough calculation based on the figures given by the program office (i.e. US\$40 million annual program budget, 30% labor cost share, unskilled worker wage rate of US\$30/week,) a total of 400,000 worker*weeks of employment are being generated through the program in 1999 (assuming that all the labor costs are for unskilled labor).⁷ This implies that it costs the Government US\$100 to provide one

⁷ According to the Central Bank data, there were about 280,000 unemployed workers in Cuenca, Guayaquil, and Quito in June 1999. Considering that the share of economically active population of these three largest cities in Ecuador is about 50% of the national total, we could very roughly estimate that there were 560,000 unemployed in Ecuador as of June. This implies, therefore, that if all unskilled workers employed by the FISE projects worked

week of employment for an unskilled laborer. Or alternatively, the cost of creating one worker*day of temporary employment is US\$20 (assuming a five-day-week).

During the previous years' operation, FISE has experienced some problems due to allegations of corruption. Since then, a new set of operational procedures and project selection criteria has been established, and the program's transparency has been improved. One implementation problem that still remains is the long time (an average of about 6 months) that the process of project authorization requires due to various legal requirements and administrative inefficiencies. If this problem can be alleviated, and the administrative capacity increased with more emphasis on decentralizing program execution, then FISE will be a good instrument for expanding public employment for the poor.

For the remainder of 1999, the Government's Emergency Social Program will maintain the budget of about 108 million sucres for FISE, funded by the allocation from *Fondo de Solidaridad* and external financing.⁸

If economic and fiscal conditions allow an increase in funding for the FISE, this program can be an important source of temporary public employment with the institutional infrastructure already in place. To maximize the program's capacity in providing employment for the poor, the Government may consider: (a) increasing the budget allocation; (b) promoting and favoring projects with higher labor intensity; and (c) simplifying the procedure of contract pre-authorization by *Contraloria* and *Procuradoria* to shorten the project authorization process.

2. PRONADER

The National Rural Development Program (PRONADER) is a Bank-funded project, which has been under implementation by the Ministry of Social Welfare since 1991. The project is due to close in June 2000. Among other things, the program involves construction of irrigation schemes, flood control and drainage schemes, construction and maintenance of rural roads, and construction of small dams. For the fiscal year 1999, the program has an allocated budget of US\$10.4 million for these infrastructure components, which roughly corresponds to the undisbursed amount of the Bank loan (US\$12.6 million as of June 30).

The particular projects to be funded by the program during 1999 have already been selected. The program office reports that between the three components of the program (i.e. reconstruction and rehabilitation of irrigation system, rural roads, flood control and drainage systems damaged by El Nino; Community Development Fund; and forestation components,) a total of 1,134,328 laborer*days of employment are expected to be created. It is also reported that the program added a new condition this year that contractors employ local labor rather than workers from outside the community. Out of about 70 contracts to be carried out during 1999, only seven are large contracts greater than US\$250,000, with the remainder mostly small

only for one week, then about 71% of the unemployed can be employed for one week through the FISE program during 1999. Or alternatively, about 8,300 unemployed workers (1.5%) can work for 48 weeks.

⁸ For a summary description of *Fondo de Solidaridad*, see Appendix 3.

contracts lasting 60 to 90 days. From these figures, the unit cost of generating one worker*day of employment can be calculated to be about US\$9.

Since the project is completing this year, and the follow-up project prepared to be financed by FAO (PROLOCAL) does not have any infrastructure component, the expected impact of PRONADER will be limited to the 1,134,328 worker*days of temporary employment to be generated during 1999. The new program, PROLOCAL, will focus on human capital development and investment in agricultural micro enterprises. It is planned that “*mesas de cofinanciamiento*” be formed as a venue for community development planning jointly between PROLOCAL and FISE.

3. COPEFEN/CORPECUADOR

COPEFEN (*Unidad Coordinadora del Fenómeno El Niño*) was created in October 1997 with the objective of coordinating the rehabilitation of social infrastructure and roads damaged by El Niño. COPEFEN coordinates the work of the Ministry of Public Works, FISE and municipal governments. The first phase of the program (October-December 1997) corresponded to the preparation and design of the program before serious damage took place; the second phase (January-October, 1998) to responses to emergencies during the rain and flooding; and the third phase (November 1998 to present) to the rehabilitation of damaged infrastructure.

The program has a total budget of US\$167.7 million, of which US\$146.7 million are to be spent directly on infrastructure projects. The funding comes from the World Bank, and IDB loans, and Government counterpart funds. The funds have already been allocated and “committed” to municipal governments (42%), Ministries of Public Works (43%), Ministries of Agriculture, Social Welfare, and Urban Development (3%), and other public entities (FISE, UNDP, CORPECUADOR, etc.) (12%). As of July 9, a total of US\$84.2 million (57%) had been disbursed to the recipient entities.⁹

CORPECUADOR was established in August, 1998 the final political decision of the Alarcon administration, one day before his departure from office. It is headed by the Vice-President of the Republic, and headquartered in Guayaquil. Its funding is expected to come from the export and sales tax of bananas and other tax revenues. However, no funding existed for CORPECUADOR during 1998, and an agreement was signed in December, 1998 for COPEFEN to provide US\$14 million to fund the activities of CORPECUADOR during 1999. They agreed on the division of labor, with COPEFEN responsible for “rehabilitation” and CORPECUADOR responsible for “reconstruction” of affected infrastructure.

With the US\$14 million, CORPECUADOR was to finance reconstruction of 28 bridges (about US\$10 million) housing (US\$1 million,) and development of the “master plan” (US\$3 million). As of late July, six contracts for bridge reconstruction had been signed, and the remaining twenty-two contracts were being finalized. CORPECUADOR has been criticized for the slow progress in its work, which is mainly due to the time spent on developing the “master plan.”

⁹ For a more detailed distribution of the funds, see Appendix 4.

In contrast, about 75% of the funds allocated by COPEFEN to municipal governments (total US\$61.7 million) have been already disbursed with the work completed, and the remaining 25% of the work is expected to be completed by the end of 1999 or earlier. The average size of the work executed by the municipal governments under COPEFEN is US\$15,000, and the share of labor cost is reported to be 33% on average. If we use the average wage of US\$30/week for laborers, each project generates 165 worker*weeks of temporary employment. The total allocated cost of US\$61.7 million would generate 678,700 worker*weeks of employment. This implies that it costs US\$91 for COPEFEN-municipal governments to create one week of employment for an unskilled laborer, or US\$18 for one worker*day of employment.

As for the work carried out by CORPECUADOR, no data is yet available. However, we cannot expect a large impact on employment generation for the poor and the unskilled workers. The civil work under CORPECUADOR will focus on major reconstruction work with high capital intensity, and will not be suitable for the heavy use of unskilled labor.

4. Ministry of Education

During 1999, the Ministry of Education plans to reconstruct and rehabilitate school infrastructure damaged by El Niño. The Basic Education Project (EB/PRODEC) financed by the World Bank has US\$22.5 million budgeted for the 1998-99 period for infrastructure reconstruction in target areas.¹⁰ A joint study by COPEFEN and DINACE identified a total of 1,700 primary schools damaged by El Niño in coastal areas, of which the EB/PRODEC will finance the reconstruction/rehabilitation of 700 schools in rural areas.¹¹ According to the program office, the share of labor cost in the total project cost is about 40%. Thus, US\$9 million will be spent on the labor cost. The average size of a project is reported to be US\$22,500 with about 35 laborers hired for each project. The EB/PRODEC recommends to the contractor that they hire local unskilled labor, and this recommendation apparently has been followed in most cases. In addition to some engineering work, the projects involve many labor-intensive tasks, such as water tank and septic tank installation, roof and ceiling replacement, and painting of walls. It takes on average 3 months (or 13 weeks) from the signing of the contract to the delivery of the work. Thus, the total budget of US\$22.5 million would generate 455,000 worker*weeks of temporary employment for unskilled labor, translated into the unit cost of US\$10 for generating one worker*day of employment.

In year 2000, the Ministry plans to construct and install 2,300 pre-fabricated classrooms, in collaboration with the municipal governments. The municipal governments will be responsible for building slab foundation, on which the Ministry will mount the classroom. Each pre-fabricated classroom is expected to take 10 workers one month to construct; thus the project

¹⁰ Of the total budgeted amount, US\$18 million has been "committed," and US\$12.5 has been actually spent as of late July.

¹¹ Rehabilitation of other 1,000 schools in urban areas is financed by an IDB-funded project. In addition, FISE will finance the reconstruction of 500 high schools (*colegios*) damaged by El Niño.

will generate 23,000 worker*months, or 99,700 worker*weeks of temporary employment. The cost of this work is to be funded by part of the fees charged to bounced checks.¹²

For further reconstruction/rehabilitation work to continue during 2000, the Government will need to obtain additional external financing. Negotiation for a supplemental loan is currently under way with the World Bank.

5. Ministry of Health

The Ministry of Health has been funding the rehabilitation of health infrastructure damaged by El Niño through the Bank-financed FASBASE project. The infrastructure component of the project has been decentralized to sub-national units with financial and administrative management capacity, such as *parroquias* or the headquarters of "*areas de salud*." While initially contracts were given to qualified contractors from outside the community, now most contracts are small and managed locally, with the condition that local labor be hired.

The selection of infrastructure projects under FASBASE has been based on demand, with a quick initial assessment of damages. The FASBASE office reports that it has taken only 8 to 15 days, on average, from the identification of demand and submission of estimated project costs to the signing of a contract. This program has taken full advantage of the fact that programs financed by international lending agencies are exempt from the condition imposed by the Public Sector Contracting Law (*Ley de Contratación Pública*). Thus, the time spent on preparing and obtaining approval for contracts has been apparently much shorter than with other programs such as FISE.¹³

To improve the targeting of the program to the poor and the most vulnerable groups, a new set of project selection criteria has been developed recently. Based on poverty indices, 300 of the poorest *parroquias* have been selected from 176 poor, or extremely poor, *cantons*. Additional criteria include: indigenous population; status of basic health service; availability of qualified human resources; and areas in the frontier.

The World Bank financing of FASBASE will be completed in 1999. However, given the current crisis and increased need for additional funding, the Bank has agreed to provide a Supplemental Loan of US\$20.2 million. Of this amount, US\$11.02 million will be spent on infrastructure. Using the reported 30% as the share of labor cost in the total project cost, and US\$30/week as the average wage for unskilled workers, this additional funding would create 92,000 worker*weeks, or 460,000 worker*day of temporary employment. The unit cost of generating one worker*day of employment through the FASBASE infrastructure component is calculated to be US\$20.

¹² This unique scheme was initiated in 1974 by the military. Initially, the collected money went to INNFA. Now, the *Superintendencia de Bancos* collects about US\$6 to 7 million of bounced check fees every year, which is used for investment in school infrastructure and Ministry of Social Welfare programs.

¹³ Since FISE is also externally financed, it, too, can be exempted from the law. However, the implementing unit of FISE seems to have been unable to benefit from this exemption.

6. MIDUVI

According to the ILO estimation, construction and/or reconstruction of 170,000 public housing units would generate about 93,000 worker*years of employment, and additional improvement of 100,000 housing units would generate 42,000 worker*years of employment.¹⁴ Since the total cost of these investments is not available, we use the figures reported by COPEFEN for its work with MIDUVI in constructing/rehabilitating housing, to calculate the unit cost of temporary employment generation. It is reported that US\$4 million is budgeted for the reconstruction of 1,000 housing units, at an average cost of US\$4,000 per unit, of which US\$2,000 is for the housing infrastructure itself, and the other US\$2,000 is for related basic service infrastructure, such as water and sanitation. Thus, we can assume that US\$680 million and US\$200 million are spent respectively for the above-mentioned reconstruction and improvement. The unit cost of generating temporary public employment through this program is calculated to be US\$6,500 per worker*year, or US\$126 per worker*week, or US\$25 per worker*day.

Although raising the labor intensity of these public housing projects could be considered, careful consideration needs to be made on the trade-off between employment generation objectives and the quality of housing produced.

7. Municipal Governments

The Central Bank data show that during 1998 the total tax revenue for all municipal governments was US\$78.6 million, of the equivalent of 0.4% of the GDP. In addition, municipal governments, received transfer of US\$162.0 million from the central government, according to what is set forth in the "*Ley Especial de Distribución del 15%*".¹⁵ With the additional transfers of US\$274 million from other sources, the total municipal government revenue was US\$514.6 million.¹⁶

At the same time, the Central Bank data also show that the share of municipal government expenditure-- including the transfers from the central government-- was only 12.1% of the total public expenditure in 1998, amounting to about US\$549 million. Although the revenue and expenditure figures do not correspond exactly, they give us the magnitude of money spent by municipal governments.

Unfortunately, no data are available on the actual share of expenditure spent on infrastructure projects. However, it should be noted that the "*Ley Especial de Distribución del 15%*" constrains that the transferred money be used only for investment, and not to cover current

¹⁴ OIT, Oficina de Area y Equipo Técnico para los Países Andinos, "Propuestas de Políticas de Empleo para Ecuador a Corto y Mediano Plazo," julio 1999.

¹⁵ "*La Ley Especial de Distribución del 15%*" issued in March 1997 guarantees transfer of at least 15% of the central government budget to municipal governments.

¹⁶ Figures are taken from Wiesner, Eduardo, "La Descentralización, el Ajuste Fiscal y el Desarrollo Municipal en el Ecuador," Banco Interamericano de Desarrollo, Bogotá, mayo 1999.

expenditure. Thus, we could assume that at least US\$162 million (about one third of the total expenditure) was directed to infrastructure investment during 1998. This is a significant amount relative to the budget size of other programs reviewed here.

Since municipal governments rely heavily on transfers, the current economic and fiscal crisis, and the resulting arrears of the transfer payments, have caused a serious problem. The expected transfer under the "*Ley de 15%*" in 1999 is US\$268 million, which amounts to 11% of the total central Government budget, or 76% of the revenue of the US\$353 million expected from financial transaction taxes during 1999.

In theory, the fiscal impact of decentralization should be neutral to the public sector as a whole. To the extent that institutional and political capacity exists, municipal governments can take over from the national government execution of investment projects, and the process of transfer need not be hindered by the fiscal crisis. In reality, however, many municipal governments still lack the institutional capacity to effectively carry out many of the tasks currently performed by the national government. To help municipal governments play increasingly important roles in executing investment projects (including temporary employment generation through infrastructure projects,) we need to: (a) strengthen technical assistance for improving their administrative, financial, and other technical capacities; and (b) set up an incentive system that encourages and rewards efficient use of transferred funds.

The development of municipal government capacity is a long-term goal. For the short-term, existing programs, such as FISE, COPEFEN, etc., should strengthen their collaboration with selected municipal governments in promoting temporary public employment generation.

Appendix 1

Characteristics of Public Works Programs in Selected Countries

Program, Country	TRABAJAR, Argentina	NE Rural Poverty Alleviation, Brazil	NE Drought Relief, Brazil
Year Implemented	1996 (Substantially modified and expanded in 1997.)	1985	
Source of Financing	Largely government financed, with WB help.	60% WB, 30% state and municipal governments, 10% beneficiaries usually in labor and materials.	Mostly the national government, with contribution of state and municipal governments.
Number of Beneficiaries % of Population	(May 1997–October 1998) 300,000 workers 18,000 projects approved		(up to September 1998) 1.2 million workers (60-70% of workers in drought-affected areas wanting work at the program wage rate.)
Income and/or Other Eligibility Criteria	None, except the selection of sub-projects based on points system.		Rural areas. Only one participant per household, and no other family income source.
Total Cost (wage+non-wage) per Person-Day of Employment Created			(About US\$100 million/month.)
Ratio of Wage Cost to Total Cost (%)	0.20		Estimated 0.75
Program Wage/Remarks	2/3 of the average wage for the poorest decile in GBA. Max. wage = national minimum wage .		About equal to the average wage for casual wage labor in normal year, and close to the minimum wage. (Well above the shadow wage during the drought.)
Target Group	Poor, unemployed workers	Rural poor.	Rural unemployed, drought-affected workers.
Targeting Mechanism	Self targeting through low wage rates. Sub-projects are selected through points system which places an emphasis on geographically targeting poor areas.	Geographic targeting at municipality and rural community levels. Community-based selection by the municipal council. Project-based selection by incentive structure and cost-sharing matrix.	Geographical targeting based on rainfall data. (Limited to rural areas.) Jobs are rationed based on income level and losses due to drought.
Targeting Performance	50% of participants from the poorest decile of families. 80% from the poorest quintile.	93% of disbursed funds reached targeted beneficiaries (1995,) improvement from 44% before program reformulation.	No data available. Bur observation suggests that absolute rainfall data does not reflect the importance of relative rainfall.

Appendix 1 (Continued)

Program, Country	Employment Generation, Haiti	Bolivia	Chile
Year Implemented	1995	1987-1990	1987
Source of Financing	External	External (85%) through social fund	External and national government.
Number of Beneficiaries % of Population	25,000/month (from 9/1995 to 8/1996) 60,000/month (from 10 to 12/1996)	8-9 million person days /year	40-45 million person days /year
Income and/or Other Eligibility Criteria			
Total Cost (wage+non- wage) per Person-Day of Employment Created	(total US\$51.4 million)	8.0	0.5
Ratio of Wage Cost to Total Cost (%)		0.4	
Program Wage	Equal to the legal minimum wage, which is higher than the average market wage for unskilled labor.		Equivalent of one-fourth of minimum wage.
Target Group	Rural and urban poor.		
Targeting Mechanism	Strenuous physical labor and far project site. Selection by the implementing organization.		Highly self-targeted by the very low wages.
Targeting Performance	No data available. However, the high wage rate of the program suggests a substantial leakage to non-poor.	Poorly targeted overall. (Implemented by private contractors and social funds.)	No data available, but a very high targeting outcome is suggested. About 25% female.

Sources: Various project/program documents.

Appendix 2
Impact Evaluation of Public Employment Schemes

Labor Market Problem	Relevant Indicators	Intervention Design	Type of Evaluation	Result	Comments
Ongoing schemes in Sweden to provide short-term employment and safety net to the unemployed (Forslund and Krueger, 1994)	Changing over time due to large time period studied.	Individuals placed in short-term employment in the construction, health and welfare sectors.	Quasi-experimental	Displacement effect in construction sector is 69%. Displacement effect in health and welfare is insignificant.	Long-term evaluation using data from 1976 to 1990. At best, programs create no displacement. No data on costs. No evidence on value of assets created.
Providing short-term employment to the unemployed in Austria in the early 1990s (Meager and Evans, 1998)	Unemployment rate was fairly steady between 3-4%.	Individuals placed in short-term employment.	Quasi-experimental	Positive impact on subsequent employment and income levels compared with control group.	
Short-term employment provided to the disadvantaged in Denmark in the late 1980s (Meager and Evans, 1998)	Denmark spent about 0.2% of GDP on these programs. Unemployment rate around 7%	Individuals provided with short-term employment as well as subsidized jobs.	Non-scientific	Likelihood of leaving unemployment peaks after participation in temporary jobs. However such effects are not strong enough to compensate for reduced employment impact during period of scheme.	Participants finding subsequent jobs kept them longer than non-participants.
Unemployed individuals provided short-term employment in Ireland in the mid 1980s (Breen, 1991)	Unemployment rates over 15 percent. Expenditure on these programs rose from 0.09% of GDP in the mid 1980's to 0.25% by 1990.	Various temporary employment schemes provided.	Quasi-experimental	After controlling for unobserved differences, short-term and long-term impacts on employment are not significant.	If these differences were not controlled for, the short-term and long-term employment impacts are positive.
Unemployed individuals provided temporary employment in the U.K. in the early 1990s	Unemployment rates rose from 7% in 1990 to over 10% in 1993.	Employment Action programs.	Quasi-experimental	Reduced probability of getting a job after one year (by one percent), increased probability after three years (by 4%)	

Appendix 2 (Continued)

Labor Market Problem	Relevant Indicators	Intervention Design	Type of Evaluation	Result	Comments
Individuals provided temporary employment in Sweden (Meager and Evans, 1998)	Time period not known	Public works relief program	Quasi-experimental	Participants more likely to remain in unemployment as compared to non-participants	Some selection bias likely.
Ongoing schemes in Sweden to provide short-term employment and safety net to the young unemployed (Skedinger, 1995)	Changing over time due to large time period studied.	Youths placed in short-term employment in different sectors of the economy.	Quasi-experimental	Displacement effect is 100%. - a one percent increase through job creation schemes leads to a one percent decline in regular youth employment.	Long-term evaluation using data from 1976 to 1990. No data on costs. No evidence on value of assets created.
Provide employment for long-term unemployed adults and short-term unemployed youth in Finland in 1987 (OECD, 1993)	Unemployment rates at around 5% and rising. Finland spends about 0.4 percent of its GDP on public works schemes - more than on any other active labor programs.	Adults unemployed over a year and youth unemployed over three months placed in public work schemes.	Non-scientific	Positive short-term effect but increased re-inflow into unemployment in the longer term.	Participants became unemployed once again after the program was completed.
Aid unemployed gain short-term employment in Germany during 1987 and 1988 (OECD, 1993).	Unemployment rates were steady in Germany at around 7%.	NA	Non-scientific	Significant increases in flow out of short-term unemployment. However no significant impact on long-term unemployment.	Participants became unemployed once again after the program was completed.

Appendix 2 (Continued)

Labor Market Problem	Relevant Indicators	Intervention Design	Type of Evaluation	Result	Comments
Provide employment for the long-term unemployed in Holland in the late 1980's (OECD, 1993)	Unemployment rates fell from about 13 percent in the early 1980s to below 10 percent by the end of the decade. Holland spent less than 0.02 percent of GDP on these programs.	Long-term unemployed provided permanent jobs in the municipal governments.	Non-scientific	Deadweight effect=15% and substitution effect=15%	
Aid displaced and long-term unemployed workers to gain temporary employment in Hungary in 1992-93 (O'Leary, 1995)	Employment had fallen by over 20% during 1989-92. Unemployment rate rose from 0.5 in 1989 to 8% by 1992.	Individuals employed in public service employment including maintenance of public facilities, assistance to social welfare agencies.	Quasi-experimental	Matched pairs estimates show that, as compared to a control group, participants are 50% less likely to be in a normal job after participating in these programs. Earnings are not significantly different though.	Evaluation done in three counties. Using cost data along with effectiveness data shows that these programs are extremely cost-ineffective.
Assist displaced and long-term unemployed workers to gain temporary employment in Hungary in the mid 1990s (O'Leary, 1998(a))	Sharp rise in unemployment: from below one percent at the turn of the decade to 12 percent by 1994. After falling continuously for five years, real GDP started growing slowly. Of spending on active programs - 15 percent spent on public works.	Individuals employed in public service employment including maintenance of public facilities, assistance to social welfare agencies.	Quasi-experimental	After participating in the program, individuals are 29% less likely to be employed in a normal job and earn \$15/month less than those in the control group.	Evaluation done in 10 counties. Using cost data along with effectiveness data shows that these programs are extremely cost-ineffective.

Appendix 2 (Continued)

Labor Market Problem	Relevant Indicators	Intervention Design	Type of Evaluation	Result	Comments
<p>Aid displaced and long-term unemployed workers to gain temporary employment in Poland in the mid 1990s (O'Leary, 1998(b))</p>	<p>GDP started growing slowly from 1994 but unemployment rate rose from 0% in 1989 to 16% by 1994, though it has declined since. In 1994, 35% of expenditures on active labor programs was expended on public works.</p>	<p>Individuals employed on projects organized by government agencies including municipal governments.</p>	<p>Quasi-experimental</p>	<p>After participating in the program, individuals are 8% less likely to be employed in a normal job. No significant difference in earnings.</p>	<p>Evaluations done in 8 Polish voivods. Using cost data along with effectiveness data shows that these programs are cost-ineffective.</p>

Appendix 3

Fondo de Solidaridad

The Solidarity Fund (*Fondo de Solidaridad*) was established in 1997 as a depository of all the funds to be generated through privatization of public enterprises and concession fees collected from the private sector. While the book value of the public enterprises scheduled to be privatized (e.g. electricity and other utility, telecommunications) amounts to about US\$4.2 billion, no fund has yet been generated, since none of the actual sales has been carried out yet. So far, the concession fees are the sole source of the fund. The Solidarity Fund invests the collected resources in the financial market, and distributes only the returns from this investment to various social sector projects and programs. During 1998, the Fund received the first set of revenues, from which about US\$42.5 million of interest earnings have been generated to be distributed during 1999. Since no privatization sale is foreseen during 1999, the expected funds available for distribution during the next year 2000 will remain about the same US\$42.5 million.

The allocation of funds to different programs was determined by the Council, which consists of 20 members. They include: five ministers, six additional representatives of the national government, and one representative each from the Provincial Council, the Municipal Council, and a citizen group. No explicit and objective selection criteria have yet been established for budget allocation. The President of the Fund explained that to facilitate a quick and dynamic launch of the program, a decision was made for 1999 to distribute funds to those projects that are ready for implementation. However, he also acknowledges that there is a need for a clear system for prioritizing among competing projects and programs, especially given that the resources of the Solidarity Fund are supposed to be available not only for the public sector entities, but also for private, non-profit organizations.

In the table below, we summarize the total amount and the amount of resources already transferred as of August 6, 1999 through the inter-institutional fund transfer agreements already signed and the additional agreements to be signed during 1999.

**Fondo de Solidaridad: Distribution of 1999 Budget by Institutional Agreement
(million sucres)**

Agreement	Amount	Transferred Amount as of 8/6/99
MIDUVI	37,762	15,783
1998 Budget	21,979	13,467
School Meal (MEC)	25,000	5,000
MEC Education Sector Program UCP-MEC	13,000	3,000
EB/PRODEC (MEC-World Bank)	2,000	500
Nuestros Niños (MBS-IDB)	5,000	500
Free Maternity Services (MSP)	84,564	8,456
CORPECUADOR	102,665	18,000
Agreements Pending		
FISE	70,000	-
MIDUVI - Sanitation and Housing	23,000	-
MEC - Textbooks	64,000	-

Source: Solidarity Fund.

Appendix 4

COPEFEN
Summary of Funds Allocation and Transfer
(As of July 9, 1999)
(US\$1,000)

	Co-Executor	Committed Amount	Transferred				To Be Transferred	% To Be Transferred
			IDB	World Bank	Counterpart	Total		
A	Provinces (Municipal Governments)	61,666	32,422	13,628	229	46,279	15,387	25%
B	Ministries	67,248	22,331	7,487	5,550	35,368	31,879	47%
	<i>MAG "raciones"</i>	411	404			404	7	2%
	<i>MAG "seeds"</i>	996	846			846	150	15%
	<i>MBS</i>	5	5			5		
	<i>External Relations</i>	34	34			34		
	<i>MIDUVI</i>	1,419	227	192		419	1,000	70%
	<i>MIDUVI (Housing Program)</i>	1,175						
	<i>MOP</i>	63,207	20,815	7,295	5,550	33,660	29,547	47%
C	Other	17,768	1,787	795		2,582	13,956	79%
	<i>FISE</i>	2,274	1,660			1,660	614	27%
	<i>Civil Defense</i>	115	66			66	49	42%
	<i>UNDP</i>	20	20			20		
	<i>Red Cross</i>	21	21			21		
	<i>Police Force</i>	25	20			20	5	20%
	<i>CORPECUADOR</i>	14,083		795		795	13,288	94%
	<i>CORPECUADOR (Housing Program)</i>	1,230						
	Total A+B+C	146,682	56,540	21,911	5,779	84,230	61,222	42%
	<i>Other Administrative Costs</i>	16,186	158	431,409		589	15,596	
	<i>Balance</i>	4,832						
	Grand Total	167,700	56,699	22,342	5,779	84,820	76,818	

Source: COPEFEN.

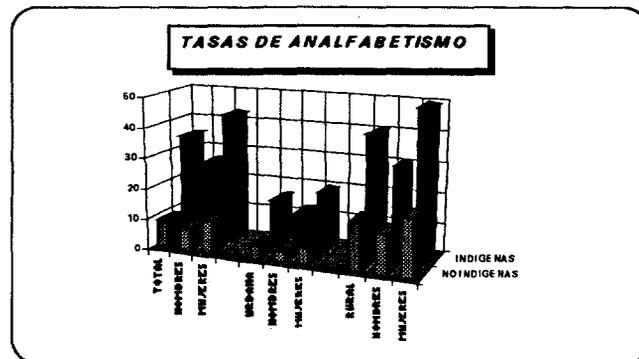
Annex 8: Indigenous Education in Ecuador

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I. Introduction

Ecuador is a comparatively small country, but with a cultural diversity that includes thirteen different ethnic groups and several sub-groups. Each ethnic group speaks their own separate language (except for the afro-chotenos and afro-esmeraldenos who speaks Spanish). In addition, the highland and lowland Quichuas also speak several distinct dialects. This rich and complex linguistic spectrum has not been reflected in the attempts to introduce a bilingual educational system in Ecuador, but rather overlooked in an effort to concentrate on educational programs for mainly Quichua and Shuar speaking communities. Not until 1998 were the indigenous languages recognized in the legal constitution as official languages besides Spanish (Encalada et al, 1998). Figure 1 below shows the difference in the ability to read and write between indigenous and non-indigenous people as of 1995.

Figure 1: Illiteracy in Ecuador



Source: Sistema Integrado de Indicadores Sociales
-SIISE- y ECV, INEC 1995

The conquest of Ecuador and the subsequent colonial era, is characterized by a close relation between Spanish domination and the importance of the written word. Initially, sons of the indigenous elite were selected for education by the Spanish administration and during the 16th century the Dominican Schools became educational centers for the indigenous elite. Later on, when the conquistadors realized that the indigenous people turned the ability to read and write into a political advantage and were communicating controversial letters between Lima and Quito, the Spanish administration intentionally closed off the indigenous people from further studies and as a consequence, very few indigenous people learned to read and write during the following 18th and 19th centuries. Although the Spanish crown wished to integrate the indigenous populations into the Creole/Spanish state for peace-maintenance reasons, there was a strong resistance among the local hacienda owners and other influential persons. This position was to have severe consequences on the colonial administration of Ecuador because censuses,

numerations and registrations of taxes were all locally managed by indigenous administrators. Their ability to read and write was reduced by the resistance to education of indigenous people and, as a consequence the administrative system became mismanaged and contributed to the fragility of the political and social structures and eventually, to the breakdown of the colonial system.

With the withdrawal of Spanish governmental support for indigenous education, the church came to play a more important role. The church created centers for art and works and the results were widely recognized as remarkable. Manual labor was very qualified and the school of Quito became famous because of its high quality art production. Particularly the combination of European style and the skill and religious concepts which were applied by the indigenous artists in the arts, gained great prestige.

Not until the 20th century, did the indigenous people take on a stronger position and initiate the process of acquiring the knowledge to read and write. With the assistance of religious organizations, the first indigenous schools were funded in the 1940s in the Province of Pichincha. These indigenous educational centers were established in Cayambe by indigenous leaders who were assisted by meztizo ladies from Quito. The Lauritas missionaries then followed up on this initiative and established indigenous schools in the Province of Imbabura. Indigenous teachers were responsible for the education and the schools functioned until the military coup in 1963. According to Ramon (1993) in 1950 illiteracy was estimated at 48% on the national level while for the indigenous people the estimate reached 80% with the remaining other 20% who “only knew how to read and write badly”. During these years literacy campaigns were organized by unions and NGOs such as the “Unión Nacional de Periodistas” (Journalist’s Union) and the “Liga Alfabetizadora Ecuatoriana” (a NGO). From 1963 and onwards, still with the technical support of UNP, the military government of Ecuador initiated illiteracy campaigns. “La Misión Andina”, initially with funds from ILO, but later nationalized by the military government, worked with education in the Province of Chimborazo, Imbabura and Tungurahua. In the 1970’s the Mission was integrated into the Ministry of Agriculture and disappeared. From 1952 and until 1981, when their activities were expelled by the government, the Summer Institute of Linguistics operated linguistic/evangelical centers in the three regions of Ecuador. Although the major purpose was to translate the bible into indigenous languages for the purpose of “civilizing the Indians” and evangelization, they also carefully documented the indigenous linguistic heritage. An indigenous initiative was taken by the “Union de Nativos de la Amazonia Ecuatoriana (FCUNAE) in 1975 when this federation of amazonian communities organized indigenous bilingual schools in about 50 communities. For lack of funds and local support the project eventually disappeared.

In 1984 the Ecuadorean Government signed an agreement with the Federal Republic of Germany in which the improvement of the bilingual education was the major objective. In 1988, during President Borja’s administration, and based on a proposition by the Confederacion de Nacionalidades Indigenas del Ecuador (CONAIE), a “Direccion Nacional de Educacion Intercultural Bilingue” was created within the Ministry of Education. The results of this effort show that over the past ten years bilingual education exist in 16 out of 21 provinces with 1,681 schools and 88 colleges (SINEC, DINEIB, 1998). Despite this apparent progress in the provision of educational infrastructure and institutional capacity, the average years of education for

indigenous children nation-wide is only 2.5 while non-indigenous children spend an average of 4.7 years in school (Retrato de Mujeres, 1998). Table 1 below shows the number of indigenous students enrolled in bilingual education according to ethnic identity.

**Table 1: Indigenous Students in Bilingual Schools
By Ethnicity**

**ALUMNOS DEL NIVEL PRIMARIO EN ESCUELAS BILINGUES
SEGUN NACIONALIDADES INDIGENAS**

NACIONALIDADES INDIGENAS	TOTAL		
	Total	Hombres	Mujeres
Quichua	59,869	30,626	29,243
Shuar	10,775	5,538	5,237
Hispanos	7,025	3,559	3,466
Chachi	1,991	1,150	841
Achuar	898	471	427
Awa	513	321	192
Siona Secoya	301	164	137
Cofan	281	154	127
Afro-Ecuatoriano	237	126	111
Husorani	198	101	97
Tsachila	152	67	85
Epera	4	2	2
TOTAL	82,244	42,279	39,965

The purpose of this annex is to present a synthesis on indigenous education in Ecuador with an emphasis on some of the background and reasons that can explain why the efforts to improve indigenous education still produce poor results.

II. Preparation for Schooling

The characteristics of an indigenous home and the profile that makes it different from a non-indigenous home, are the cultural values that each ethnic group applies to their secular daily living. For example, while a meztizo home may concur with the national code for social behaviour, a Salasaca or Ashuar indigenous home will apply often completely different set of values. With regard to education, the social and cultural competence that the individual ethnic homes provide, play a significant role concerning the attitudes that parents and children take towards learning, going to school and submit to the rules of the establishments that apply

Indigenous parents tend to have little or no formal education themselves and therefore cannot provide the guidance and stimulation necessary to orient their children in the educational systems provided by the national society. Nevertheless, it seems that indigenous families with a tradition of formal education are also those that try to stimulate and support their children in order for them to acquire a higher level of schooling and thereby decreasing the poverty potential and reach a higher standard of living. Table 2 below shows that in the rural areas, the number of indigenous students who never enroll in school is about four times higher than that of indigenous students in urban areas. The same table shows that the number of indigenous students enrolled at the three different levels of education, is much higher in urban areas than in rural areas. "Indigenous" is defined by INEC (Instituto Nacional de Estadística y Censos) as "a person in a household where at least one person speaks quichua" (INEC, 1995, 1998).

Table 2: Number of Indigenous Children Enrolled in School in Rural and Urban Areas

Población de 6 años y más, según Nivel de Instrucción y No Matricula por Etnia						
	Población				Total	
	No Indigenas	%	Indigenas	%		
Area Urbana						
Primaria	974,429	18.0	19,247	17.8	993,676	18.0
Secundaria	686,017	12.6	17,427	16.1	703,444	12.7
Superior	262,218	4.8	3,613	3.3	265,831	4.8
No se Matriculó	3,500,993	64.6	68,086	62.8	3,569,079	64.5
Total	5,423,657	100.0	108,373	100.0	5,532,030	100.0
Area Rural						
Primaria	710,329	19.7	98,253	24.6	808,582	20.2
Secundaria	301,179	8.4	27,520	6.9	328,699	8.2
Superior	37,381	1.0	4,160	1.0	41,541	1.0
No se Matriculó	2,556,674	70.9	269,532	67.5	2,826,206	70.6
Total	3,605,563	100.0	399,465	100.0	4,005,028	100.0
Total Nacional						
Primaria	1,684,758	18.7	117,500	23.1	1,802,258	18.9
Secundaria	987,196	10.9	44,947	8.9	1,032,143	10.8
Superior	299,598	3.3	7,773	1.5	307,371	3.2
No se Matriculó	6,057,666	67.1	337,618	66.5	6,395,284	67.1
Total	9,029,218	100.0	507,838	100.0	9,537,056	100.0

Source: Encuesta de Condiciones de Vida, 1998. INEC.

Indigenous families in general, rear their children close to the parents or other close relatives and thereby provide a warm and loving environment for the infant. However, because of the often harsh environment characterized by hard work for the entire family, as the child grows up it will need to take on adult responsibilities often at a very early age. Two to three year olds may carry newborns in order for the mother to work more freely in the field or in the compound. Small children 3 years and up sell chewing-gum and flowers all day and long into the night in the streets of Quito. The mental stimulation of these children whether they live in rural or urban areas is limited to impressions from the surroundings. In the rural context this consists of the natural environment of the home, the fields, the mountains or the forest and occasionally a trip to the nearby markets. In the urban context the city and the street life provides stimulation. Television is regarded as a symbol of status and introduces news and ideas to the indigenous, but often the quality of the program, as well as the quality of the image, is of very poor educational value.

A study of the impact of school breakfast on the ability of learning and study results, shows that poor results in school are, not surprisingly, closely associated with low socio-economic levels of living (Tinajero y Ponce, 1996). For example, 95 % of the children that participated in this study lived in low quality and high risk housing and the 11.1% of the mothers of these children could not read or write. For indigenous mothers, according to the same study, the level of illiteracy is even higher. It is important to note that in the Sierra and in the Oriente,

the period of food insecurity (October through March) coincides with the educational period. Children are enrolled in school in September and continue until July. The impact is particularly significant for indigenous children since their families have a lower economic capacity and because the family food reserves are often used for planting. For example, in Ecuador 77.75% of the indigenous population cannot afford the “Canasta de Bienes y Servicios¹” compared to 50.9% of the non indigenous population (Encalada, Garcia y Ivarsdotter, 1998).

Stimulation towards formal education is very limited in most indigenous homes where learning is culturally defined and limited by the ability and will of the parents. In addition, poverty provokes other problems such as alcoholism and maltreatment of women and children. Table No. 2 above showed that 67.5% of indigenous children in rural areas and 62.8% of indigenous children in urban areas do not enroll in school. Table 3 below shows their stated reasons for non-enrollment.

¹ “La Canasta de Bienes y Servicios” is composed by the following categories of spending: food and drinks, housing, health, education, transportation etc and was constructed by INEC – an official government institution concerned with socio-economic statistics.

Table 3: Reasons Why Indigenous Children Do Not Enroll in School

Población de 6 años y más, según Razón de No Matriculación y Etnia por Grupos de Edad					
	6 a 11 años	12 a 17 años	18 a 24 años	25 años y más	TOTAL
	%	%	%	%	%
Población No Indígena					
Edad	9.0	0.2	0.3	21.8	16.6
Costo	26.3	31.5	19.5	9.4	12.8
Trabajo	0.9	20.9	37.8	35.3	34.2
Labores Domésticas	3.1	5.2	14.6	16.2	15.0
Terminó Estudios	0.2	0.5	4.0	6.2	5.4
No le interesa	3.1	20.1	10.6	4.9	6.6
Enfermedad	16.6	3.8	2.0	1.7	2.1
Faltan establecimientos y Profesores	10.5	7.0	2.3	2.1	2.6
Distancia, Transporte	5.2	3.0	0.9	0.5	0.8
Otros	20.2	7.9	8.0	1.9	3.6
Total	100.0	100.0	100.0	100.0	100.0
Población Indígena					
Edad	28.5	0.8	3.6	34.0	25.7
Costo	10.7	35.0	27.8	11.5	16.4
Trabajo	4.2	34.5	43.3	30.6	32.4
Labores Domésticas	3.6	1.8	9.7	11.7	10.2
Terminó Estudios	0.0	3.1	0.9	1.3	1.4
No le interesa	1.3	19.8	6.5	6.4	7.6
Enfermedad	0.3	0.9	2.2	1.1	1.3
Faltan establecimientos y Profesores	0.0	0.0	0.0	2.0	1.5
Distancia, Transporte	0.0	0.0	0.8	0.4	0.4
Otros	51.4	4.0	5.1	1.0	3.2
Total	100.0	100.0	100.0	100.0	100.0
Total Nacional					
Edad	10.7	0.3	0.5	22.4	17.0
Costo	27.6	31.8	19.9	9.5	13.0
Trabajo	1.2	21.9	38.1	35.1	34.1
Labores Domésticas	3.1	5.0	14.3	15.9	14.7
Terminó Estudios	0.2	0.7	3.8	6.0	5.2
No le interesa	3.0	20.1	10.4	4.9	6.9
Enfermedad	16.9	3.6	2.1	1.7	2.1
Faltan establecimientos y Profesores	9.6	6.5	2.2	2.1	2.5
Distancia, Transporte	4.7	2.8	0.9	0.5	0.8
Otros	23.1	7.6	7.9	1.9	3.6
Total	100.0	100.0	100.0	100.0	100.0

Source: ECV 1998

III. Household Demand for Education

There is a growing awareness among indigenous parents that formal education is necessary if their children are to obtain an economic space within the national society. Depending on the subsistence system of each ethnic group, the main reason for putting more emphasis on the national educational systems and the possibilities those may provide, is the increasing population which results, on a per capita basis, in lower availability of agricultural lands in the Sierra and the reduction of natural resources in general, (tropical forests for hunting, fishing, etc.) in the tropical eastern and western lowlands. In urban areas, where the migration of indigenous people is also a result of increasing population pressure in rural areas, the difficulties of finding employment motivates parents to invest in their childrens' education to increase the chances of finding work. With the growing populations, the traditional subsistence base cannot

support more than a limited number and therefore sons and daughters are forced out of the traditional boundaries and need to seek employments beyond the limits of their own society.

However, the fact an indigenous student has enrolled in an educational establishment doesn't assure his or her completion of the school year. Apart from illnesses, which is one of two major reasons for the indigenous child to stay away from school (the other being labor strikes), other reasons include the fact that the parents lack financial means or that the children have to work. (See Table 4).

Table 4: Reasons for Indigenous Children not Attending Classes

Población de 6 años y más, según Razón de no Asistencia a Clases y Etnia por Grupos de Edad					
	6 a 11 años	12 a 17 años	18 a 24 años	25 años y más	TOTAL
	%	%	%	%	%
Población No Indígena					
Se retiró	6.7	11.6	17.5	11.7	9.6
Enfermedad	51.6	36.5	28.2	8.5	42.3
Lab. Domésticas	2.2	3.4	0.9	4.3	2.6
Paro o Huelga	5.5	8.0	6.5	1.6	6.2
Falta de Dinero	1.2	1.0	3.0	1.8	1.3
Trabajo	0.7	3.3	11.2	47.8	4.9
No le interesa	1.7	3.4	3.1	0.0	2.3
Mal clima	20.2	17.6	12.5	3.1	17.7
Otros	10.2	15.3	17.1	21.1	13.0
Total	100.0	100.0	100.0	100.0	100.0
Población Indígena					
Se retiró	0.0	7.8	1.2	0.0	2.4
Enfermedad	24.1	14.6	46.2	45.2	22.6
Lab. Domésticas	3.2	2.4	1.9	16.8	3.3
Paro o Huelga	55.1	62.0	12.3	0.0	54.0
Falta de Dinero	1.0	0.0	0.0	0.0	0.6
Trabajo	2.5	5.4	1.2	16.7	3.8
No le interesa	1.6	1.2	0.0	0.0	1.4
Mal clima	0.9	0.0	0.0	0.0	0.5
Otros	11.7	6.5	37.3	21.3	11.3
Total	100.0	100.0	100.0	100.0	100.0
Total Nacional					
Se retiró	5.9	11.2	16.9	10.9	8.8
Enfermedad	48.2	34.2	29.0	10.9	40.2
Lab. Domésticas	2.3	3.3	1.0	5.1	2.7
Paro o Huelga	11.7	13.6	6.7	1.5	11.3
Falta de Dinero	1.2	0.9	2.9	1.7	1.3
Trabajo	0.9	3.5	10.7	45.8	4.8
No le interesa	1.7	3.2	2.9	0.0	2.2
Mal clima	17.8	15.8	12.0	2.9	15.9
Otros	10.4	14.4	17.9	21.1	12.9
Total	100.0	100.0	100.0	100.0	100.0

Source: Encuesta de Condiciones de Vida, 1998. INEC.

According to Table 4, the major reasons why indigenous students do not complete secondary school, go on to university levels or even enroll in primary school in the first place are to found in the socio-economic context in which the children grow up. With further studies it should be possible to identify differences across ethnic groups, provinces and gender. However,

during the recent economic crisis, one finds that the following reasons contributed to low school attendance during this period of indigenous students (and most probably also to non-indigenous children) in both rural and urban areas:

- Parents had fewer work opportunities, which resulted in reduced incomes. This situation lead to increased tension in the home (drinking, insecurity) and less parental stimulation.
- Parents could not contribute financially for transportation, material, school fees and maintenance of the school.
- The educational system broke down for several weeks and in some provinces for months. Teachers were not paid, supplies were not received, and the schools were not opened.
- The road network in the country was cut off intermitently and no public transportation was available.

IV. Coverage and Quality of Indigenous Education

The access to bilingual education at the primary level is almost exclusively in the rural areas. Only nine bilingual educational centers are found in the urban areas; four in Quito, four in Riobamba and one in Puyo (DINEIB, 1999). These are providing education on higher levels such as institutes and university. In Table 5 we find that for the Sierra, bilingual education is concentrated to the provinces of Chimborazo, Cotopaxi and Imbabura while in the Oriente, bilingual centers are mainly found in the provinces of Napo, Morona and Pastaza.

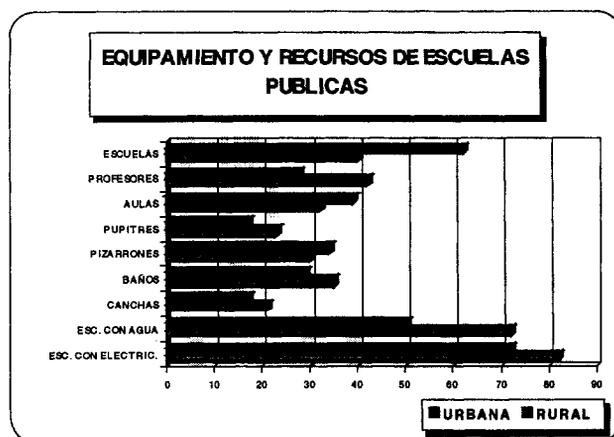
Table 5: Bilingual Schools by Province and Educational Level

Provincias	Educación Básica	Educación Media	Institutos Pedagógicos	Total
Azuay	29	2	-	31
Bolívar	73	7	1	81
Cañar	51	4	1	56
Carchi	20	-	-	20
Cotopaxi	110	3	1	114
Chimborazo	344	31	7	382
Esmeraldas	70	5	-	75
Imbabura	110	6	-	116
Loja	51	4	-	55
Morona	325	7	1	333
Napo	206	11	-	217
Pastaza	120	6	1	127
Pichincha	88	1	1	90
Sucumbios	92	5	1	98
Tungurahua	51	6	-	57
Zamora	72	2	-	74
TOTAL	1.812	100	14	1.926

Source: Dirección Nacional de Educación Intercultural Bilingüe Ministerio de Educación y Cultura, 1998

Most indigenous children in rural areas have access to a bilingual school in the home community. When they reach the secondary level they may need to travel further away from their home, and they are unlikely to encounter a bilingual secondary school. At university level, they need to travel/move to Quito in order to enroll in bilingual programs at the Universidad Católica. With regard to quality, educational establishments in urban areas receive more funding than do those in rural areas. In addition, the quality of teachers may be higher in urban areas where they have easier access to educational material, intellectual stimulation and more opportunities to improve their training. Teachers in rural areas often see their appointment to a certain rural community as “a punishment” and often find reasons not to show up for classes, i.e. teacher presence is very low in rural schools. The abuse of indigenous children in educational establishments is well documented (Cliché, Garcia 1995). In short, indigenous schools in rural areas suffer in both accessibility and quality from schools in urban areas. For example, bilingual schools are often poorly equipped with sanitary services, sport and laboratory equipment etc. (Cliché, Garcia 1995). Figure 2 shows the level of acquired equipment for public schools in rural and urban areas.

Figure 2: Equipment and Resources in Public Schools



Source: *Sistema Integrado de Indicadores Sociales -SIISE- y ECV, INEC 1995*

In indigenous schools we find the following set of problems (Cliché and Garcia 1995):

- Poor quality classrooms, lack of sanitary installations
- Lack of education material in respective language, if available of poor quality
- Irrelevant curriculum
- Lack of sport and laboratory equipment, lack of library
- Teacher often from outside the community and not motivated
- Teacher not bilingual and often resentful and abusive of local indigenous culture
- Teacher not paid (by government or community) and therefore do not attend school
- Low attendance of students because of poverty-related reasons

In urban areas we find bilingual education at the secondary and university level and a body of indigenous students who are more motivated since they have to pay for transportation if they remain living in the community or they have to pay for food and accommodation if they have moved to the urban area.

Concerning regional variation, the majority of bilingual educational centers (Quichua-Spanish) is to be found in the Sierra (Provinces of Imbabura, Cotopaxi, Chimborazo) and Bolivar) while others (Shuar/Achuar, Huao, Siona/Secoya) are found in the Oriente (Provinces of Napo, Morona and Pastaza). In the Oriente, access to secondary and university level is virtually non-existent while students in the Sierra have easier access to higher education.

V. Provision and Governance

The best educational program offered by the Ecuadorian Government is probably the "Subprograma de Alfabetización Quichua" which began in 1978 at the "Instituto de Lenguas y Lingüística de PUCE. Between 1979 and 1986 it operated under the responsibility of "El centro de Investigaciones para La Educación Indígena (CIEI). Material for literacy in Quichua, Secoya-Siona, Huao and Chachi was developed, and the program took on a national character since it regarded the mother language as the principal language while Spanish was regarded as the intercultural and inter-linking language. A master program in Quichua linguistics was offered between 1974 and 1984 which was completed by several indigenous students.

In 1986, as a result of the above followed the "Programa de Auto-Educación Bilingüe Inter-Cultural" which was part of the "Corporación Educativa MACAC". It was centered on secondary education and still maintains the bilingual school "Atahualpa" in the Chaupiloma community in the Province of Pichincha. Other examples, schools, production of educational material etc, which came out of the Quichua programs can be found in the Province of Chimborazo.

With the agreement between the Ecuadorian government and GTZ in 1986, the "Proyecto de Educación Bilingüe Intercultural" began working on curriculums, material in Quichua for primary level education, capacitation and support of indigenous organization. A total of 53 schools in seven provinces in the Sierra have been established under this project. Furthermore, 8 primary schools were established in the Provinces of Napo and Pastaza under the "Proyecto Alternativo de Educación de la CONFENIAE" (PAE-BIC).

Following the creation of DINEIB in 1988, the indigenous federation CONAIE signed an agreement on scientific collaboration with the Ministry of Education and Culture in 1989. This "Convenio de Cooperación Científica" specifies linguistic and pedagogical investigations to be carried out for the purpose of preparing material for alphabetization, post-alphabetization, progressive education etc in the awa, Quichua, Chachi, Tsachi and other languages. The Ministry of Education and Culture has also signed an agreement with the "Federación Nacional de Indígenas Evangélicos" in order to produce material for social science and Spanish as a second language education.

Bilingual education through the means of radio communication is being provided by several missionary organizations. The best known is the "Sistema Radiofónico Shuar (SERBISH) which is functioning since 1972 and offers primary as well as secondary education among the Ashuar and Shuar communities in Amazonia. The system was officially recognized in 1979 and receives support from the Salesian Mission, the "Federación Intercultural de Centros Shuar y Achuar" and from the Ministry of Education and Culture. Another example of bilingual education through radio communication is the Quichua adult alphabetization program called "Escuelas Radiofónicas Populares del Ecuador" (ERPE). This program began in 1964 on the initiative by the bishop of Riobamba and is transmitted throughout the Provinces of Chimborazo and Pichincha.

It is evident that the missionary organizations in Ecuador take on a large portion of the responsibility for bilingual education. Another example is the “Sistema de Escuelas Indígenas de Cotopaxi (SEIC), which, although it doesn’t function through the means of radio transmissions, has with the support of the Salesian Mission established bilingual schools in the Province of Cotopaxi. The mother tongue is used as the first language in the education programs and indigenous teachers from the involved communities have been educated.

Community based educational systems are not so common. However, the indigenous organization “Fundación Runacunapac Yachana Huasi” is working in the Province of Bolivar, in the parroquia of Simiatug. Here the communities with the support of the foundation have prepared a text book in quichua and a few schools are offering primary education. The indigenous teachers are educated at the “Instituto Simiatuccunapac Jatun Capari” which is a pedagogical institute under the management of DINEIB.

Following the creation of the DINEIB within the Ministry of Education in 1988, the same government administration created, with funding from the Inter-American Development Bank (IDB), the “ Programa de Mejoramiento de la Calidad de la Educación Básica (PROMECEB) in 1990. The major objectives of this project were to develop methods for education, administration and community participation. In 1999, still with IDB funding, a follow-up project was prepared but which will function initially only in the rural areas. It is called “Redes de Amigas” and the principal objectives are to change the learning process to become less rigid and more autonomous and oriented towards building self-esteem, creativeness and an awareness of the environment. The new approach of the present project also hopes to build on the interactive participation of students, families, other schools in the same zone, teachers and other leaders of communities.

In short, we find that during the past two decades the government has made an effort to support indigenous initiative towards a broader and culturally specific education and also that the NGO community, especially the church, is carrying the larger responsibility for the implementation of various bilingual programs both in the Sierra and in Amazonas. For lack of tradition of formal education and for lack of financial means, indigenous communities are yet to become more involved in management of schools and in the education of their children.

VI. Dirección Nacional de Educación Intercultural Bilingüe (DINEIB)

DINEIB is a “dirección” of the Ministry for Education and Culture and it is financed through the national government’s budget. Apart from that, GTZ (the German development agency) occasionally provides sporadic funds. DINEIB is constituted by the following administrative and executing levels;

- the implementing level is responsible for the directives of DINEIB and the control of the educational bilingual system. It is composed of “Subdirección Técnica” with the following divisions; “Division de Supervision Educativa”, Division de Regimen Escolar y de Refrendacionó de Títulos”; “División de Currículo” y la “Division de Formación”;

Mejoramiento y Capacitación Profesional” with the following sub-groups; “Formación Docente Inicial”, “Profesionalización y Capacitación.”

- the evaluating level is responsible for planification and follow-up of the system and for propositions and recommendations to the central unit. The level is composed of several units; “Planificación Integral del Sistema Educativo”; “Division de Planeamiento”; “Departamento de Estadística Nacional”, “Mapas Comunitarios” and Asesoría Jurídica y Comunicación Social”.
- the administrative and financial level is responsible for the administrative support and financial resource distribution to the central, provincial and community implementing units.

The operational and functional system of DINEIB is characterized by a structure of sub-organizations. There is the central unit which’ responsibility it is to govern, plan, and control the intercultural and bilingual education. The provincial units have the responsibility to organize and apply the intercultural and bilingual education in the provinces, together with teachers and communities. At the community level, finally, one finds the community educational centers whose responsibility it is to comply with the principles and objectives of DINEIB in order to implement the educational activities in the indigenous communities.

Each provincial unit has a “Consejo Educativo” through which the teachers are selected. This is done through a “Concurso de Merecimientos y Oposición” which is managed by the national supervisor and delegates from the central unit. In order to apply, the teachers must comply with certain requirements, for example “Titulo de Normalistas” and the “Certificado de Bilinguismo”. The fact that one still find teachers who are only monolingual is explained by recruitment before the introduction of the EIB system (Educación Intercultural Bilingue). Teachers training is organized and coordinated by DINEIB with the “Dirección Nacional de Capacitación (DICAPED). This center also elaborates the specific curricula which are being applied in the EIB. GTZ, also provides training opportunities as well as the “Proyecto de Mejoramiento de Calidad de la Educación Básica (PROMECEB).

DINEIB is present in 16 provinces with a total of 4,067 teachers. On primary level 82, 244 students participated in DINEIB’s educational programs during the school year 1997-98 (no data available for secondary level). Table 6 shows the number and distribution of monolingual and bilingual teachers according to province. Table 7 shows the number and distribution of students on primary level 1997-98 according to province.

Table 6: DINEIB Teachers by Language and Province**PROFESORES SEGUN PROVINCIAS Y POR LENGUA**

Provincias	TOTAL		
	Total	Bilingue	Monolingue
Azuay	71	61	10
Bolívar	199	137	62
Cañar	142	72	70
Carchi	20	20	-
Cotopaxi	197	188	9
Chimborazo	746	495	251
Esmeraldas	183	176	7
Imbabura	505	123	382
Loja	161	131	30
Morona Santiago	649	649	-
Napo	368	305	63
Pastaza	198	164	34
Pichincha	284	91	193
Sucumbios	60	60	-
Tungurahua	194	146	48
Zamora Chinchipe	90	53	37
TOTAL	4,067	2,871	1,196

Table 7: Students in DINEIB Educational Centers 1997-98, Primary Level

**ALUMNOS DEL NIVEL PRIMARIO EN ESCUELAS BILINGUES
AÑO LECTIVO 1997 - 1998**

PROVINCIAS	TOTAL		
	Total	Hombres	Mujeres
Azuay	1,435	754	681
Bolívar	3,283	1,731	1,552
Cañar	2,971	1,461	1,510
Carchi	409	254	155
Cotopaxí	5,178	2,670	2,508
Chimborazo	19,518	9,958	9,560
Esmeraldas	2,435	1,401	1,034
Imbabura	10,072	5,065	5,007
Loja	2,373	1,242	1,131
Morona Santiago	9,952	5,095	4,857
Napo	7,356	3,729	3,627
Pastaza	2,911	1,481	1,430
Pichincha	5,858	2,981	2,877
Sucumbios	2,875	1,518	1,357
Tungurahua	4,209	2,207	2,002
Zamora Chinchipe	1,409	732	677
TOTAL	82,244	42,279	39,965

VII. Consequences of Poor Education

Indigenous people have more access to bilingual education if they live in the central provinces of the Sierra or in the Amazonian provinces of Napo, Morona and Pastaza. If they migrate to the urban centers, indigenous people have better access to higher levels of education in general while bilingual education is limited. At the secondary and university levels bilingual education may be less important. Strengthening the sense of indigenous identity and community, while learning to read and write, is of crucial importance. Focusing on integration into the Ecuadorian society through the achievement of work and careers, the indigenous people themselves often downplay the importance of bilingual education on higher levels and stating that mastering Spanish is the most important tool in reaching the goals they set for themselves.

The low quality and coverage of education contribute to poverty. Quality and access to schooling are highly correlated with income. Education thus contributes to a vicious circle of

poverty wherein the poor receive a low standard of education which contributes to the inability to raise themselves from poverty. To break out of this circle is more difficult for an indigenous person than for a non-indigenous person.

There exists no information as to what extent indigenous children with secondary education leave the indigenous community permanently. Most indigenous groups in Ecuador maintain a very strong sense of ethnic identity, and it can therefore be assumed that while studying at secondary or university level, students leave the community if necessary for the purpose of access to education. but they do return home regularly. Few indigenous people leave their communities permanently and a strong explanatory factor is the availability of work and job opportunities. Among indigenous people, as well as non-indigenous people in Ecuador, there is a strong sense of solidarity within the nuclear and extended family. Therefore, any family member, indigenous or non-indigenous, who leave the home for the purpose of work within Ecuador or in the exterior, will send money back to help support the life of family members left behind.

VIII. Lessons Learned and Good Practice

The intercultural/bilingual educational programs in Ecuador have succeeded to some extent to elevate the importance of the maternal/indigenous language in the various processes of building individual self-confidence, self and community identification, and not the least in the social and cultural continuity of the indigenous communities. First of all, in the bilingual programs the respect for the maternal language is a basic principle which has been applied in several indigenous communities among which the Shuaras in the Oriente were the pioneers. Secondly, several indigenous communities have gone one step further and developed appropriate methods for bilingualism where the maternal language is the principal and Spanish the second language. In this way, these communities learn to apply two sets of languages, one for communication within the indigenous community and one for the Meztiso and national society. Thirdly, and perhaps most importantly, the participation of the indigenous communities in the educational processes have not only taught them the value of the mother tongue and showed them how to apply different languages in different social contexts, the process has also provided them with opportunities to take responsibility for their own education in a participatory manner (personal communication with DINEIB). Below are a few examples where these lessons apply.

Cachi Alto is part of the “Sistema de Escuelas Indigenas de Cotopaxi (SEI). The center is in Latacunga and has more than 15 years of experience of bilingual education. In the community of Cachi Alto, the parents are responsible for the selection, the follow-up, evaluation of the teachers and the development of the curriculum. Together with teachers, students and community leaders the parents control the education system. Another example is the “Instituto Pedagógico Intercultural Bilingüe de Canelos” en la Provincia de Pastaza in which the quichua, shuaras and Huaorani communities participate. The bilingual institute in the Province of Morona enrolls members from shuar communities and provides programs which concentrates on agriculture, fishing and handicrafts for the tourism industry.

Other examples of successful bilingual centers which are mentioned by (DINEIB) are, in the Oriente, the “Escuela Amauta Ñanpi” in Puyo, in the Province of Pastaza and in the Sierra the following, the school called “Ati Pillahuasu” in the community of Panecillo, Parroquia Quichinche in Otavalo in the Province of Imbabura; the school called “Silvio Luis Haro” in the Peguche community, Parroquia Miguel Hegas in Otavalo, also in the province of Imbabura; the school of “Inti Ñan” in the Sanjaloma community in the Parroquia of Salasaca in the Province of Tungurahua.

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