



# **Ex-Post Evaluation of the Honduran Social Investment Fund (FHIS 2)**

Client: World Bank

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# TABLE OF CONTENTS

## TABLE OF CONTENTS

i

|   |           |
|---|-----------|
| CHART INDEX   | iv        |
| ANNEX INDEX   | v         |
| ACRONYM LIST  | vi        |
| <b>I. INTRODUCTION</b> .....  | <b>1</b>  |
| <b>II. DESCRIPTION OF THE FHIS</b> .....  | <b>3</b>  |
| <b>III. KEY ISSUES IN STUDY DESIGN</b> .....  | <b>5</b>  |
| A. SCOPE OF THE STUDY .....   | 5         |
| B. STUDY QUESTIONS .....  | 5         |
| C. THE DESIGN OF THE PRIMARY INVESTIGATION .....  | 6         |
| 1. <i>Counterfactual proposition and the use of “pipeline” projects as a control group</i> .....                        | 6         |
| 2. <i>The evaluation of sub-project sustainability</i> .....  | 7         |
| 3. <i>Definition of the area of influence of the projects</i> .....   | 7         |
| 4. <i>Questionnaire design</i> .....  | 7         |
| 5. <i>Determination of sample size and selection procedure</i> .....  | 7         |
| 6. <i>The design of the qualitative investigation</i> .....   | 9         |
| a) Objectives of the Study.....   | 9         |
| b) Size of the sub-sample for the qualitative study and the selection of the focus group participants .....             | 9         |
| c) Topics and techniques .....  | 11        |
| d) <i>Pilot test</i> .....  | 12        |
| e) Interviews with key actors .....   | 12        |
| f) Analysis .....   | 14        |
| <b>IV. THE TARGETING OF FHIS 2 TOWARDS POOR COMMUNITIES</b> .....   | <b>15</b> |
| A. RESOURCE DISTRIBUTION OF THE FHIS.....   | 16        |
| 1. <i>At municipal level</i> .....  | 16        |
| 2. <i>At household level</i> .....  | 19        |
| a) Resource distribution by UBN .....   | 20        |
| b) Resource distribution by per capita income.....  | 21        |
| c) Distribution according to gender .....   | 23        |
| 3. <i>Excluded groups</i> .....   | 23        |
| B. CHOICE OF PROJECT AND COMMUNITY PARTICIPATION .....  | 23        |
| 1. <i>Consultation and participation</i> .....  | 24        |
| a) Quantitative evidence .....  | 24        |
| b) Qualitative evidence on consultation and participation .....   | 24        |
| 2. <i>Community opinions on the priority of FHIS projects</i> .....   | 25        |
| a) Quantitative evidence .....  | 25        |
| 3. <i>Community participation in the project</i> .....  | 27        |
| 4. <i>FHIS and the formation of social capital: training for sustainability and of “ownership” of the project</i> ..... | 28        |
| C. CONCLUSIONS.....   | 29        |
| <b>V. THE IMPACT OF FHIS</b> .....  | <b>31</b> |
| A. THE FHIS AND BASIC NEEDS .....   | 31        |
| 1. <i>Trends in basic needs in the nineties</i> .....   | 31        |

|    |   |    |
|----|---|----|
| 2. | <i>Impact of FHIS in the reduction of UBNs</i> .....  | 32 |
| B. | FHIS IMPACT ON THE EXPANSION OF THE SOCIAL PHYSICAL INFRASTRUCTURE.....                           | 33 |
| 1. | <i>Primary schools and classrooms</i> .....   | 33 |
| 2. | <i>Rural Health Centers (CESAR)</i> .....   | 34 |
| 3. | <i>Drinking water</i> .....   | 35 |
| 4. | <i>Sanitation</i> .....   | 36 |
| C. | THE QUALITY OF THE DESIGN AND CONSTRUCTION AND STATE OF REPAIR OF FHIS 2 PROJECTS.....            | 37 |
| 1. | <i>Education</i> .....  | 37 |
| 2. | <i>Health Centers</i> .....   | 38 |
| 3. | <i>Water and sanitation solutions</i> .....   | 38 |
| 4. | <i>Faults in the works: evidence from the qualitative study</i> .....                             | 39 |
| 5. | <i>The supervision problem</i> .....  | 39 |
| 6. | <i>The principal - agent relation</i> .....   | 41 |
| D. | COST-EFFECTIVENESS OF THE FHIS.....   | 42 |
| 1. | <i>Methodological problems</i> .....  | 42 |
| a) | The difficulty of comparing costs between FHIS and other programs.....                            | 42 |
| b) | The lack of information on outputs.....   | 43 |
| 2. | <i>Findings of the evaluation on cost-effectiveness</i> .....                                     | 43 |
| a) | The efficiency of the FHIS as a contracting agency.....   | 43 |
| b) | FHIS costs compared with other programs.....  | 44 |
| c) | Value for money: survey opinions.....   | 45 |
| 3. | <i>Conclusions</i> .....  | 45 |
| E. | THE OUTPUT OF SERVICES FROM FHIS PROJECTS.....  | 46 |
| 1. | <i>A global vision of the operation of projects executed by FHIS 2</i> .....                      | 46 |
| 2. | <i>Rural health posts</i> .....   | 47 |
| a) | Personnel disposition.....  | 47 |
| b) | Productivity.....   | 47 |
| c) | The sustainability of the rural health posts supported by FHIS.....                               | 48 |
| d) | Findings of the qualitative investigation.....  | 49 |
| 3. | <i>Primary schools</i> .....  | 49 |
| a) | Personnel assignment.....   | 49 |
| b) | Usage and sustainability indicators of schools “with project”.....                                | 50 |
| c) | Qualitative evidence on the schools’ operations.....  | 50 |
| 4. | <i>Water projects</i> .....   | 51 |
| a) | Qualitative evidence.....   | 51 |
| b) | Evidence from the project survey on the usage and sustainability of completed water projects..... | 51 |
| 5. | <i>Sewerage projects</i> .....  | 52 |
| 6. | <i>Latrine projects</i> .....   | 53 |
| 7. | <i>Impact of FHIS projects social capital formation: training for the sustainability</i> .....    | 54 |
| 8. | <i>Maintenance of the works: qualitative evidence</i> .....                                       | 54 |
| F. | IMPACTS OF FHIS 2 AT HOUSEHOLD LEVEL.....   | 56 |
| 1. | <i>Education</i> .....  | 56 |
| a) | FHIS’ impact on the probability of being enrolled in a primary school.....                        | 56 |
| b) | The impact of FHIS on grade for age in primary education.....                                     | 57 |
| 2. | <i>Health</i> .....   | 59 |
| a) | FHIS impact on seeking medical attention for health problems.....                                 | 59 |
| b) | FHIS impact on vaccination coverage.....  | 60 |
| 3. | <i>Latrines</i> .....   | 61 |
| a) | Study hypotheses.....   | 61 |
| b) | Descriptive statistics.....   | 62 |
| c) | Multivariate analysis.....  | 62 |
| 4. | <i>Drinking water</i> .....   | 63 |
| 5. | <i>Sewerage</i> .....   | 65 |
| 6. | <i>Conclusions: FHIS impacts</i> .....  | 66 |

**VI. CONCLUSIONS AND RECOMMENDATIONS ..... 67**

A. THE CHOICE OF PROJECTS ..... 67

B. THE IMPACT OF FHIS..... 67

    1. *FHIS' impact on social infrastructure* ..... 67

    2. *The design, construction and state of repair of FHIS 2 projects*..... 68

    3. *Cost-efficiency of FHIS* ..... 68

    4. *Service production and use of FHIS projects* ..... 69

    5. *Household level impacts*..... 69

**VII. BIBLIOGRAPHY ..... 71**

## CHART INDEX

1. Resources mobilized by FHIS 2
2. Investments of FHIS 1 and 2 by sector
3. Comparison of the characteristics of the households “with” and “without” project
4. Focus group by geographical area according to the type of project
5. Resource distribution between municipalities according to the poverty level
6. Progressiveness of FHIS’ resource distribution, at municipal level, by different poverty and population definitions
7. UBN of FHIS beneficiaries compared with the national population
8. Households in area of influence and users of FHIS projects
9. Benefit Incidence of FHIS 2 resources, based on per capita household income
10. Distribution of benefits by gender
11. Impact of FHIS’ presence on consultation and participation
12. Opinions of interviewees on the suitability of the selected projects
13. Impact of the FHIS participation and of consultation on utilization of projects
14. Impact of participation on the proportion of households that use the projects
15. Global incidence of UBNs
16. Incidence of each type of UBN
17. Tendency of the UBNs attended by FHIS sub-projects
18. Contribution of FHIS 2 to primary education infrastructure
19. Contribution of FHIS to the health sector infrastructure, 1990-98
20. Contribution of FHIS 2 to increased potable water coverage, 1994-97
21. Contribution of FHIS 2 to increased sanitation access, 1994-97
22. Physical evaluation of school and rural health centers built by FHIS and other agencies
23. Physical evaluation of water and sanitation projects built by FHIS and other agencies.
24. Quality of works according to the household survey.
25. Opinions on the supervision of the FHIS works, based on the project survey
26. Overview of the operation of the projects built by FHIS 2
27. Personnel assigned to rural health centers
28. Productivity of the UPS supported by FHIS, 1997
29. Sustainability indicators in the operation of rural health centers
30. Students per teacher and per classroom
31. Desk and textbook availability
32. Operational problems in schools
33. Income from water systems
34. Personnel in water systems
35. Operational problems in water systems
36. Gross enrollment rate for children aged 6 to 12 in communities “with” and “without” FHIS education projects
37. Logistical regression results for the impact of FHIS on gross enrolment (children 6 to 12)
38. Proportion of boys and girls who are up to date with their primary education
39. Logistical regression results on the factors that affect age-for-grade in primary education
40. FHIS’ impact on the decision to seek attention for health problems
41. Logistical regression results for FHIS’ impact on the decision to seek attention
42. FHIS’ impact on latrine coverage
43. The use of latrines and incidence of problems
44. Logistical regression results for FHIS’ impact on diarrhea incidence
45. Impacts of FHIS water projects
46. Impacts of FHIS on water economy
47. Impact of FHIS sewerage projects

## **INDEX OF ANNEXES**

1. Terms of reference of the study
2. Matrix of questions, variables, indicators and sources
3. Questionnaires and guides for the quantitative primary investigation
4. Sample design
5. Report of field implementation
6. Sample for the qualitative investigation
7. List of topics for focus groups
8. Charts of FHIS resource distribution at municipal level with different poverty definitions
9. Charts of FHIS resource distribution among potential and actual user households, by project type
10. Estimate of the number of water connections created by FHIS 2
11. Estimate of the number of sewerage connections created by FHIS 2
12. Comprehensive tabulations of the project survey results
13. Results of the multivariate analysis (SPSS output tables)
14. Comprehensive tabulations of the household survey results
15. Detailed information of the qualitative case studies
16. Report of the findings of the qualitative study on opinions about FHIS and its counterparts.
17. Analysis of unit costs of FHIS for Health Centers and Primary schools compared with the unit costs allowed by the Honduran Chamber of Construction, CHICO.

## LIST OF ACRONYMS

|            |  |
|------------|--|
| BCG        | Vaccination for tuberculosis   |
| CESAR      | Rural health post  |
| CESAMO     | Health Center with Physician   |
| COHASA     | Honduran and German Cooperation for Food Security                                |
| DGEC       | Honduran Census Bureau (Dirección General de Estadísticas y Censos)              |
| DIMA       | Municipal Water Division of San Pedro Sula                                       |
| DPT        | Vaccination for diphtheria, whooping cough and tetanus                           |
| EPHPM      | Multi-purpose Household Survey   |
| ESA        | Economía, Sociedad Ambiente Consultores  |
| FAO        | United Nations Organization for Food and Agriculture                             |
| FHIS       | Honduran Social Investment Fund  |
| FIS        | Social Investment Funds  |
| GFH        | Focal Group of Men   |
| GFM        | Focal Group of Women   |
| GTZ        | German Technical Cooperation Agency (Gesellschaft für Technische Zusammenarbeit) |
| IADB       | Inter- American Development Bank   |
| IDA        | International Development Association ("World Bank")                             |
| KfW        | Development finance agency of the German government (Kredit für Wiederaufbau)    |
| CHICO      | Honduran Chamber of Construction   |
| MIS        | Management Information System of the FHIS  |
| MSP        | Honduran Health Ministry   |
| NGO        | Non Governmental Organization  |
| OPEC       | Organization of Petroleum Exporting Countries                                    |
| PDA        | Private Development Agency   |
| PRAF       | Honduran Government Family Welfare Program (Programa de Asignación Familiar)     |
| PRALEBAH   | Program of Alphabetization and Basic Education for the young and adults.         |
| PROLANSATE | Texiguat, Punta Sal and Lancetilla Environmental Project                         |
| SANAA      | National Water and Sewerage Service  |
| SEP        | Honduran Public Education Secretariat  |
| SERNA      | Honduran Natural Resources Secretariat   |
| SIGES      | Geographical Information System of Social Statistics of the FHIS                 |
| UBN        | Unsatisfied Basic Needs  |
| UNICEF     | United Nations Children's Fund   |
| UPS        | Health Service Delivery Unit ( <i>Unidad productora de salud</i> )               |
| USAID      | US Agency for International Development  |

# EX-POST EVALUATION OF FHIS 2

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## I. Introduction

During the nineties, in the context of structural adjustment and state modernization programs, many countries in Latin America and Africa created Social Investment Funds (SIF). These Funds execute demand-driven social investments oriented towards poverty reduction. To that end, they are targeted towards poor communities, especially in rural sectors, and concentrate on infrastructure for primary services, in accordance with the expressed needs and priorities of the beneficiary communities. This should result in the formation of human capital in the most disadvantaged populations. In contrast, traditional public investment programs typically were centralized and aimed at secondary and tertiary services, and their benefits were therefore skewed towards higher income urban populations (i.e. their distributive impact was regressive).

This global shift in development strategy has been reflected in Honduras. In 1990 the country initiated a structural adjustment program and established the Honduran Social Investment Fund, FHIS. The program was continued under the name FHIS 2 during 1994-1998 and was later extended for the period 1998-2002 (FHIS 3).

This report presents the results of the Ex Post Evaluation of the FHIS 2. Its purpose is to establish the level of concordance between the results of the program (which was partially financed by the World Bank) and the goals identified during the design phase and to extract from the analysis conclusions and recommendations for future support from the Bank to the FHIS. The Terms of Reference for the evaluation are in Annex 1. The report provides a formal evaluation of the Honduras SIF project as well as contributing to the general evaluation of the SIF as instruments for promoting sustainable development (the SIF 2000 study).

It is important to emphasize that the fieldwork for this study was undertaken in mid 1988, before Hurricane Mitch hit Honduras at the end of October of the same year. As a result, in the low-income communities of the zones hardest hit by the hurricane, social conditions and infrastructure will have deteriorated substantially, compared with what is reported here.

The organization of the report is as follows:

**Chapter II** presents background information on the FHIS program and its development during 1990-1998.

**Chapter III** describes the evaluation methodology, explaining the hypotheses and study questions and the quantitative and qualitative techniques used to answer them.

**Chapter IV** (Selection of Beneficiaries and Projects) presents a benefit incidence analysis, which establishes the proportion of the program resources received by municipalities and by households, ranked by decile, from the poorest to the richest. In this context, the report discusses FHIS' mechanisms for project selection; community participation in this process; and the beneficiaries' satisfaction with the selected project.

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<sup>1</sup> The present study has been prepared by ESA Consultores Internacional, under contract of the World Bank. The ESA Consultores team also included: Rigoberto Martell (programmer) y Sonia López (quality control). The Task Manager for the World Bank was David Warren and the liaison officers for the FHIS were Marcial Maier and Jacobo Lagos. The technical advisors were: Laura Rawlings (Research Dept., World Bank), Ximena Traa (World Bank), Gillette Hall (University of Oregon), John Edwards (Tulane University) and Rob Van Den Bogart (FHIS). The authors wish to thank all these people for their support during the design and execution of the study. As ever, surviving errors of commission or omission are the sole responsibility of the authors.

**Chapter V** discusses the impacts of the FHIS. In the first place, it provides an overview of the reduction in Unsatisfied Basic Needs (UBN) from 1990 to 1997, and then analyses FHIS' contribution to the overall change. It details the impacts of five types of sub project, which absorbed more than 70% of the program's resources: primary and pre-school classrooms; rural health centers (CESARs); water systems; sewerage systems; and latrines. For each area, the following subjects are covered:

- FHIS' contribution to the global change in social infrastructure during the nineties.
- The quality of the design and execution of FHIS' works, and an evaluation of their present condition, which reflects the adequacy of maintenance of the facility.
- The cost – effectiveness of FHIS investments.
- The quantity, quality and sustainability of the services produced using the infrastructure built by FHIS and the degree of community participation in its operation.
- The development impact of FHIS 2 projects at household level, covering the following variables: educational achievement, the take-up of primary health services; the coverage and cost of water and sanitation services; and the health status of the beneficiary population.

**Chapter VI** summarizes the conclusions and recommendations of the evaluation.

## II. Description of the FHIS

FHIS was established in 1990. It was originally conceived as an instrument of social compensation, to mitigate the impact in poor communities of the adjustment program initiated in the same year, through the generation of employment and income and through investments in the social infrastructure and roads. In parallel, a Family Assistance Program (PRAF) was created to distribute monetary bonds to low-income families. Both programs received strong support from the international financial organisms, which promoted the structural adjustment and state modernization program.

**Chart 1**  
**Resources mobilized by FHIS 2, 1994-98)**

| Source              | US\$m        |
|---------------------|--------------|
| Honduran Government | 8.8          |
| World Bank (IDA)    | 30.0         |
| IADB                | 40.6         |
| KfW (Germany)       | 10.0         |
| OPEC                | 10.0         |
| Others 1            | 12.0         |
| <b>Total</b>        | <b>111.5</b> |

**Source:** World Bank

FHIS developed a Poverty Map based on Unsatisfied Basic Needs and (later on) illiteracy, which was used for targeting purposes at municipal level. In order to ensure its operational efficiency, FHIS was exempt from a series of administrative and legal norms that limit the implementation capacity of traditional state entities:

- Project execution was through contracts with private firms, and FHIS was given the faculty to contract works directly, avoiding the requirements of the State Contracting Law. The program's unit costs are controlled through a cost system using information from the Chamber of Construction. During FHIS 2, works up to \$35,000 could be contracted directly; from \$35,000 to \$50,000 a private bidding process (three quotes) was required and only contracts above \$50,000 required a public bidding process<sup>2</sup>.
- FHIS was exempt from the salary restrictions normally imposed by the Civil Service Law. This made it possible to recruit high-level executives, capable of running the program with modern managerial techniques.
- To increase the participation of the community through the contracting of master builders, FHIS was exempt from the Law of the Professional College of Engineers, which stipulates minimum salaries for its members and specifies that public works costing above L.10,000 must be handled by a qualified engineer. FHIS was allowed to contract works above this limit with master builders and a system for the supervision and quality control was established.
- Since voluntary labor tends to be unreliable and result in delays in the completion of works, FHIS did not require donated labor from the beneficiary community. The labor force was paid, in order to ensure rapid execution of projects. This also had the effect of maximizing cash income generation for the workers.

FHIS has had three institutional phases corresponding, respectively, to the administrations of presidents Callejas, Reina and Flores (FHIS 1, 2, and 3). The present evaluation centers on FHIS 2 (1994-98), which was supported by the World Bank's Third Honduran Social Investment Project (CR2766-HO) for \$30 million, approved in 1995. Chart 1 summarizes the resources mobilized by FHIS 2. During 1998, the World Bank approved a Fourth Honduran Social Investment Project, for \$45 million, in support of FHIS 3.

<sup>2</sup> During FHIS 3 (1998-2002) the corresponding limits were increased to \$50,000 for direct hiring; \$50,000 to \$75,000 for a private bidding process and above \$75,000 for a public bidding process.

FHIS was originally conceived as a transitory organism and its formative legislation stipulated a fixed life of five years. In 1994, the legislation was reformed to extend FHIS' life to 2002 and its activities were reoriented towards the construction of social infrastructure related to human capital formation, with the aim of contributing to poverty reduction in the medium and long term. FHIS 2 effectively adopted the model of Demand driven social investment fund and discarded employment generation as an explicit program goal.

**Chart 2**  
**FHIS 1 and y 2 Investments, by sector**

| <i>Current Lempiras</i> | FHIS 1         |             | FHIS 2           |             |
|-------------------------|----------------|-------------|------------------|-------------|
|                         | L.'000         | %           | L.'000           | %           |
| Education               | 312,833        | 60%         | 655,474          | 56%         |
| Water & Sanitation      | 50,811         | 10%         | 179,767          | 15%         |
| Health                  | 71,311         | 14%         | 158,510          | 13%         |
| Municipality            | 58,049         | 11%         | 144,167          | 12%         |
| Social Assistance       | 17,938         | 3%          | 33,614           | 3%          |
| Environment             | 2,819          | 1%          | 7,793            | 1%          |
| Employment Generation   | 11,147         | 2%          | 0                | 0%          |
| <b>Total</b>            | <b>524,908</b> | <b>100%</b> | <b>1,179,325</b> | <b>100%</b> |

**Source:** FHIS. Data for FHIS 2 includes payments made in 1998 with FHIS 2 funds.

Under both FHIS 1 and FHIS 2, the program's resources were assigned to municipalities based on their populations and relative poverty levels, with more resources per capita going to the poorer municipalities. A "menu" of the types of projects that the FHIS could finance regulated the selection of projects at local level. In this way, investments were focused in the areas of pre-school and primary education, primary health, water and sanitation. Under FHIS 2 the targeting system was strengthened both at municipal level and through tightening of the menu

system. Chart 2 shows the sectoral distribution of the investments of FHIS 1 and 2.

FHIS 2 also developed new mechanisms for community participation and established better coordination mechanisms with the line ministries, *patronatos*, and other organizations that would operate the infrastructure provided by the FHIS. A new emphasis was given to gender considerations in the selection of projects and beneficiaries and a sub-program was created for ethnic groups. Finally, environmental control was strengthened in the project cycle and the FHIS supported the Natural Resources Secretariat, SERNA, in the development of projects designed to improve municipal environmental management.

### III. Key issues in study design

#### A. Scope of the study

The FHIS menu includes many different types of sub-projects. Due to the limitation of resources for the evaluation and the need for adequate sample sizes for each type of sub-project, to ensure the validity of the results, it was not possible to evaluate the impacts of all of the sub-projects. The evaluation was limited to the areas of water and sewerage, education and health, which absorbed 84% of the program's total resources. Within this, the study concentrated on the impact of infrastructure works, which represented 83% of the total value of these projects and 70% of the total investment of FHIS 2.

The types of project evaluated are: construction and rehabilitation of domestic water systems (10% of the FHIS 2 resources) and sewerage (9%); the construction, extension and rehabilitation of pre-school and primary classrooms (41%); the construction, extension and rehabilitation of rural health centers, CESARS (6%) and the provision of latrines (3%).

Training activities were not independently evaluated but regarded as complements that should be evaluated in the context of the investments they accompany. The study also ignored areas that received relatively few resources (e.g. wells, middle schools, mobile health centers and emergency hospitals).<sup>3</sup>

#### B. Study questions

A matrix of study questions was developed, showing the variable and indicator to be analyzed and the source to be consulted. (Annex 2). The main groups of questions identified in the matrix are the following:

- ¿How has the coverage of social infrastructure in Honduras changed in the nineties (reflected in the stock of social assets and in the proportion of households with different levels of Unsatisfied Basic Needs, UBN) and what proportion of this change can be credited to the FHIS?
- For each type of investment, ¿what evidence exists of positive impacts in the social conditions of the beneficiary households (greater educational achievement, better access to medical attention, better sanitary conditions and morbidity reduction)?
- ¿To what extent were the FHIS' resources channeled towards the poorest municipalities and households of the country?
- ¿Were the projects chosen in line with the community's priorities?
- ¿Were the works well built? ¿Has maintenance been provided?
- ¿Are they at present producing the contemplated services in a sustainable form? ¿Is there community participation?
- ¿Is FHIS cost - efficient in building infrastructure?

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<sup>3</sup> Shown in Annex 4, which deals with the methodology of the study, has the details of the project sample frame of the FHIS that was used to choose the projects to be studied, including the relative importance of each type of project. Chart 1 of the same Annex provides details of the expenses of the program on each type of project.

To answer these questions diverse analytical procedures, both quantitative and qualitative, were used, which are explained in detail in the sections where the results are presented. Among the main sources consulted were the following:

- The FHIS' Management Information System (MIS), Geographical Information of Social Statistics System (SIGES) and the Cost System.
- The bi-annual Household Survey of the Honduran Office of Statistics and Census (a survey with a designed sample of 7,200 households and an executed sample of 90%).
- A survey of 96 projects, divided into 48 that had received FHIS investment and 48 that were still in the pipeline for investment.
- A survey of 2,600 households in the area of influence of the 96 projects.
- A qualitative investigation of a subset of 15 projects, including 30 focus groups with women and men beneficiaries and non-beneficiaries. The participants were a sub-sample of the household survey sample. In depth interviews were also undertaken with key informants.

The fieldwork for the primary investigation was undertaken between July and September 1998.

### **C. The design of the primary investigation**

#### **1. Counterfactual proposition and the use of "pipeline" projects as a control group**

The central question that the study seeks to answer is: "¿Had the FHIS 2 not existed, what differences would we observe today in the social conditions of the population?" This is a *counterfactual* proposition that due to its nature cannot be answered directly through empirical observation, since FHIS 2, in fact, existed.

A normal solution for this problem is to execute a "baseline" study in the communities slated to benefit by the project and then study them again after the project intervention, using a control group to isolate the effects not attributable to the project as such. However, there are difficulties in applying this type of experimental design in the evaluation of social projects focused on poor communities, such as FHIS. The targeting system of such projects should result in all communities with similar conditions receiving similar support from the project. In this case, the group of communities in equal poverty conditions that do not receive support from the project would be an empty set and consequently it is impossible to define a control group that complies with the requirements of experimental design normally used in this type of study. In any case, no baseline study had been undertaken for FHIS 2 to generate a comparison point for the impact study. It was therefore necessary to develop an alternative methodology to establish a proxy for the situation that would have existed "without the project".

To solve this problem, the study postulated that the present situation of communities that were on the point of getting a FHIS investment should be similar to the pre-investment situation of the communities that were already beneficiaries. This would hold so long as there was a reasonable degree of homogeneity between the communities and projects selected towards the end of the program and the ones chosen during the first years. Since the same methodology for the selection of projects and resource distribution was applied consistently during FHIS 2, it was expected that this condition would hold.<sup>4</sup> Therefore, a control group was constituted of projects and their respective communities that were in the pipeline for FHIS investments at the time the study was undertaken. A household sample drawn from the areas

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<sup>4</sup> Note that important changes were made in the methodology of selection of projects and beneficiaries between FHIS 1 and FHIS 2. However, these changes (which, among other things, strengthened the local participation in decision taking and improved the targeting methodology) were made at the beginning of FHIS 2 and thereafter the program's policies were maintained stable.

of influence of these projects served as a point of comparison for the evaluation of impacts in the communities that were already beneficiaries. This control group of projects and communities is referred to throughout this report as the “without project” group.<sup>5</sup>

## **2. The evaluation of sub-project sustainability**

The household-level impact of FHIS 2’s investments depends ultimately not on the infrastructure works as such, but on the flow of services they produce. A health center or school has no impact unless it has a nurse or a teacher supplying health or education services to the target population. A water system has no impact if its operation deteriorates to the point where the water does not run. A sewerage system has no impact if no one connects to it. A latrine has no impact if no one uses it. These results depend, in turn, on the sustainable operation of the infrastructure by whatever entity is responsible for it. For this reason the impact evaluation studied indicators of sustainability of the production of services at project level, in order to be able to compare the impacts resulting from satisfactory and unsatisfactory operation.

## **3. Definition of the area of influence of the projects**

In order to study the household level impact of infrastructure projects it is necessary to have a precise definition of the area of influence the project, which defines the universe of households to be included in the sampling frame. For network services, the area of influence was defined by the extension of the network *per se* (that is, it included all households that could be connected to the network). For point services such as schools and health centers, it is not possible to reach such a clear definition, since there is no absolute limit to the distance that can be traveled to use this type of service. However, obviously, more remote households have inferior access to those close to the facility. In these cases, it was decided to limit the impact study to the households located in the village (rural) or barrio (urban) where the center was located. For latrine projects, the study was limited to the beneficiary households themselves.

## **4. Questionnaire design**

The *household questionnaires* covered the condition of the dwelling and basic socioeconomic information the household. The same basic questionnaire was applied to the beneficiaries of all the different FHIS sub-projects, to allow for comparability between them. The income module in this questionnaire was designed to exactly copy the definitions and concepts used in the EHPHM, in order to ensure that the resulting estimates of incomes would be precisely comparable with the estimates generated by the EHPHM. This was necessary because the analytical methodology of the study uses both sources together to study the targeting of the FHIS resources. Additionally, there were specialized modules for the beneficiary households of each sub-project type: education, health; and water and sanitation. These were designed to generate indicators for each of the impact variables specified in the design of the evaluation. These indicators are summarized in the matrix in Annex 2, which also identifies which survey question(s) generated each specific indicator. The *project questionnaires* were designed specifically for each project type. All the questionnaires were tested in two pilot exercises before being finalized. The questionnaires and instructions for their use are in Annex 3.

## **5. Determination of sample size and selection procedure**

The sample was designed to allow a comparison between households with FHIS projects and without them. To that end, the sample was divided in equal proportions between the FHIS 2

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<sup>5</sup> However, difficulties arose with the implementation of the methodology, because the study was executed towards the end of the disbursement of FHIS 2, when the *pipeline* contained a reduced number of projects. This limited the representativity of the selected projects. This point is discussed again in section C.5 below.

beneficiary households and those in the pipeline for FHIS 2 investments. In each case, a sample of households was drawn from the area of influence of the project and an institutional interview was undertaken in order to establish the characteristics of the project facility and the services provided.<sup>6</sup>

The size of the household sample for each type of sub-project was determined taking into account: a) the optimization of the estimates to be undertaken during the analysis phase, subject to the limit in resource availability of the field work and b) the proportion of expected incidence *ex-ante* for the different impact variables.

The first phase of sample selection was the definition of two sub-universes of FHIS 2 projects, separated into the ones that were already completed (“With project”) and those that were not yet completed (the pipeline group or “Without project” group). Within each sub-universe, the projects were stratified into urban and rural locations and then ordered spatially. Within each stratum, the required number of projects was chosen, using a random starting point with systematic selection. In total, 96 projects were selected (48 With Project and 48 Without Project), divided among the different types of sub-projects according to the total desired sample for each sub-project type to be studied (health, education, water, sewerage and latrine infrastructure).

Where possible, cartography for the area of influence of each project was obtained from the DGEC (or alternatively from the FHIS’ project files).<sup>7</sup> Twenty-seven dwellings were then selected from within the area of influence of each project, in nine conglomerates of three, for a total sample of 2,592 households. In order to avoid excluding dwellings that did not exist when the cartography was prepared (1988), the “starting points” for each conglomerate were defined by counting a random number of houses, from the corner of a block or another identifiable point in the map. With this methodology, all houses had equal probability of selection.

Annex 4 summarizes the designed sample and details the number of projects and households interviewed in each stratum and gives further details on the sample design. It also describes the corresponding estimation procedures and reports the estimation errors, which turned to be acceptable in almost all cases. Annex 5 contains a report of fieldwork implementation.

As a result of the lag between the design of the study and its field implementation, coupled with the speed of execution of the FHIS projects, in some cases, projects that were originally classified as “Without Project” for the purpose of sample selection had already been completed when the field team arrived. In these cases the survey was implemented but the project and its households were reclassified as “With Project” for analysis purposes. To complete the required number of cases for the analysis of the “Without Project” group, additional projects and households were selected to substitute those that had to be re-classified.

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<sup>6</sup> In the case of the projects of the “Without Project” group and where the FHIS investment involved the construction of a totally new facility, the project survey registered details of the school, health center, water system, etc., that the community was using prior to the completion of the FHIS investment.

<sup>7</sup> In cases where it was impossible to get cartography from any source, a systematic field selection procedure was implemented. See Annex 4 for details.

These problems of field implementation in the designed methodology and the substitution of some projects whose status had changed resulted in differences between the socioeconomic characteristics of the beneficiary communities of the “with” and “without” projects, despite the aforementioned stratification into urban and rural communities. Chart 3 shows that the “without project” group is noticeably more rural than the “with project” group (59% versus 47%), resulting in inferior average sanitary conditions, less schooling and lower average incomes.

**Chart 3**

**Comparison characteristics of households "with" and "without" project**

|  | With  | Without |
|--|-------|---------|
| Percentage of population which is rural                            | 47    | 59      |
| Percentage of population without sanitation (sewerage or latrine). | 16    | 21      |
| Average years of schooling of population aged >10 years.           | 5.1   | 4.3     |
| Average monthly household income, Lps.                             | 2,618 | 2,355   |

**Source:** Household Survey

“without project” group is noticeably more rural than the “with project” group (59% versus 47%), resulting in inferior average sanitary conditions, less schooling and lower average incomes.

Multivariate analysis was used to control for the impact of such differences on the dependent variables and to prevent them from interfering in the results of the study. To this end, the analysis specified as

independent variables those where systematic differences existed between the two comparison groups, such as the percentage of the population that is rural and household income.

**6. The design of the qualitative investigation**

The qualitative investigation was designed as a complement of the quantitative investigation. It was centered on focus groups in 15 of the 96 studied communities. The participants' households had been included in household survey (that is, they were a sub-sample of the household survey). Individual interviews were also undertaken with key informants. This section details the methodology for this study component.

a) Objectives of the Study

The objectives of the qualitative evaluation were the following:

- Evaluate community participation in the identification, prioritization and follow up of the works;
- Analyze the project's impact on the formation of social capital and community well-being;
- Analyze the community's perception of the FHIS and its intermediaries.

b) Size of the sub-sample for the qualitative study and the selection of the focus group participants<sup>8</sup>

The study design planned qualitative work in 15 finished FHIS sub-projects, with two focus groups in each (one male, one female). The goal of examining 15 sub-projects was achieved, but only 27 of the 30 planned groups were completed. Of these, 13 were of women, 12 of men and 2 mixed.<sup>9</sup> In addition, the results of the pilot focus group (Colonia 30 de noviembre) consisting of two focus groups (one male and one female), were included in the analysis.

<sup>8</sup> Annex 6 gives more detail on the characteristics of the location, type of project, type of focus group, number of individual interviews and dates of the qualitative investigation.

<sup>9</sup> The men's focus group of a sewerage project in one of the marginal neighborhoods of the capital city (“Colonia 14 de marzo”) was abandoned after two failed attempts to convene the members. In this case, the information gathered from the women's focus group and the individual interviews was sufficient for the required analysis. In two rural communities (Guanijiquil y Concepción Soluteca) the men and women were integrated into a single group. The communities requested this, because the first group was delayed and

The selection procedure for the focus groups was the following. 15 sub-projects were selected from the list of finished sub-projects (up to April 1998), which constituted the sample of the quantitative investigation or Household Survey<sup>10</sup>. In this selection, care was taken to reproduce, as far as possible, the composition of the sample universe by project type and geographical zoning. It sought to cover locations with diverse socioeconomic levels, based on the level of poverty of the respective municipality. These considerations are detailed in the following paragraphs. Annex 6 provides more details on the communities and projects that were studied.

*i. Project type*

The sub-sample included the same five types of sub-projects that were studied in the Household Survey. The most numerous projects within the project universe of the FHIS are education and health. For that reason, the distribution of the qualitative sample favored these projects.

*ii. Geographical area*

The ratio of FHIS sub-projects located in rural areas with respect to urban is approximately 3 to 1. This ratio was maintained by selecting 4 urban projects and 11 rural. As in the survey universe, the health projects are all rural. Chart 4 shows the final distribution by type of project and geographical zone.

**Chart 4**  
**Focus groups by geographical zone and project type**

| Type of sub-project | Urban           |               | Rural           |                |
|---------------------|-----------------|---------------|-----------------|----------------|
|                     | No. of projects | Type of group | No. of projects | Type of group  |
| Water               | 1               | M,W           | 2               | 2M,2W          |
| Sewerage            | 1               | W             | 2               | 2M,2W          |
| Education           | 1               | M,W           | 3               | 2M,2W,B        |
| Health              |                 |               | 3               | 2M,2W,B        |
| Latrines            | 1               | M,W           | 1               | M,W            |
| <b>Total</b>        | <b>4</b>        | <b>4M,4W</b>  | <b>11</b>       | <b>11M,11W</b> |

**M:** Men; **W:** Women; **B:** Both or mixed

*iii. Poverty level of the community*

The selection of the sub-projects also took account of socioeconomic diversity, based on the level of poverty of the municipality, using FHIS<sup>11</sup> poverty map. For *urban areas*, the selected projects were those in which the municipality's poverty index was closest to the average of the group. For *rural areas*, the sub-projects were selected as follows:

- *water and sewerage:* the two projects were drawn, one from the poorest and one from the wealthiest municipality in the group, according to the poverty index;
- *education and health:* the three projects were drawn, one from the poorest municipality; one from the median ranked; and one from the wealthiest municipality in the group.
- *latrines:* one project was selected, from the median ranked municipality.

*iv. Selection of the participants*

The selection procedure for focus group participants was the following:

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the participants of the second group would have had to travel a large distance to return to their homes. The interviewer was careful to animate the women's participation in these cases.

<sup>10</sup> The communities with unfinished projects (that is, the "without project" group), which constitute the control group for the quantitative analysis, are not important to the qualitative study because it is concerned with the change perceived by the community as a result of the presence of the project. The non-beneficiaries who participated in the focus groups might be regarded as a sort of "control group" for the qualitative component.

<sup>11</sup> This index determines the relative poverty at municipal level and not at the level of individual communities. Each community was assigned the poverty level of its respective municipality.

The focus group participants came from households included in the Household Survey sample, and were therefore *potential beneficiaries* of the sub-projects. The only exception to this rule came in the case of water, sewerage and latrine projects. In those cases, if it was found that any parts of the community had not received benefits from the project (due for example to the network not covering the whole community), representatives of these *non-beneficiaries*, who might not have been included in the household survey sample, were also invited to the session. For each of these a “Non-beneficiary Profile” was completed. The non-beneficiaries were 25% of the total invited.

The household survey questionnaires included a “Beneficiary Profile” which was used to select the focus group participants. The invitees were mainly, but not exclusively over 14 years of age, with one or more of the following characteristics: a permanent resident living in the community for at least four years; having children of pre-school or school age; a beneficiary of the PRAF Family Allowance Program; an employee in the construction of the project. In all cases, the focus groups excluded presidents of community organizations and any public employee related with the project being evaluated.

The aim was to achieve attendance of 8 to 10 people. Initially, to this end, 12 people were invited, but in some cases this led to an insufficient turn out. Therefore the number of invitees was increased to 15 and eventually invitations were made to all the households in the sample (between 20 and 25). Often, a man and a woman from the same household participated, respectively, in the male and female focus group.

In most cases the participants did not receive remuneration for participating in the discussions. However, in three communities where there was more apathy, especially among men (Santa Marta y Subirana and Las Metalias) payments of 30 lempiras (approximately \$2) were offered to the first ten people arriving at the focus group meetings.<sup>12</sup>

In total, 619 people were invited to the 30 focus groups, an average of 21 per group, of which 51% were women. In total 376 people attended the groups (61% of those invited), of which 203 (54%) were women. Attendance was stronger in rural communities and among women. This level of participation was considered satisfactory given that the projects were already completed and communities usually show less interest in evaluating existing projects than in lobbying for new ones.

### c) Topics and techniques

The topics discussed in the focus groups were congruent with the objectives of the qualitative component:

- Perceptions on community participation in the project
- Community perceptions on the impact of the project
- Community perceptions of FHIS and its partner organizations

#### *i. Community participation*

This section sought to characterize the community's participation in the project cycle. Were they consulted? How? Were they able to make decisions? What type of decisions? Would they use the facility? Did they assume responsibility for operating the project? Did they receive information or training relevant to the use and operation of the facility? How did FHIS' intervention at different stages affect the community's participation?

#### *ii. Impact of the project*

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<sup>12</sup> These payments were made to both men and women participants.

This component sought to establish the community's perception of the benefits and disadvantages of the project. The participants were asked to evaluate the priority (i.e. relative importance) and usefulness of the project, the quality of the installation, the benefits at household and community level, and those received by neighboring communities and the interaction (synergy) of the project with other projects.

*iii. The FHIS and its partner (intermediary) organizations*

Beneficiary communities were asked their opinions on the performance of FHIS and of the different intermediaries of the program (e.g., municipalities, contractors or construction companies, NGOs). They were asked: Was their overall opinion favorable or unfavorable? Were they efficient, accessible, trustworthy? Would they be willing to execute other projects with them? How much did they know about the procedures and mechanisms of the FHIS and its intermediaries? How have they used this knowledge?

*d) Pilot test*

A pilot test was undertaken in the Colonia "30 de noviembre" of Tegucigalpa<sup>13</sup>. Two focus groups were organized here, one male and one female. The results of this pilot exercise were included in the analysis, because no important changes were made in the methodology. However, some questions were improved and some changes were made to the project sample<sup>14</sup>. Annex 7 presents the final Topic Guide for the Focus groups.

*e) Interviews with key actors*

*i. Selection of the participants*

For each project, interviews were sought with the following actors:

- The Mayor or another leading figure of the current municipal corporation
- The Mayor or another leading figure from the previous municipal corporation
- Members of the board of the community organization (local associations, Patronatos)
- A representative of the most important NGO operating in the community
- A nurse or doctor from the health post (if there was one)
- A teacher from the local school (if there was one)
- The engineer or the master builder who built the project.

*ii. ¿Why these actors?*

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<sup>13</sup> In this community the FHIS granted financing for the execution of a Sanitary Sewerage Construction Project.

<sup>14</sup> Turns out that in the original sub-sample of sub-projects only two construction sub-projects appeared that had a sustainability training complements (Villafranca y El Naranjo). It was therefore decided to include three more (Las Metalías, San Miguelito y Guanijiquil), which meant removing a similar number of other projects. These removed projects were from communities whose poverty level was similar to that of the communities included with the new projects. These projects were also selected from the list that constituted the sample universe of the Home Survey. Therefore, of the 15 projects of the sub-sample there would be five with sustainability training component. ¿Why this change? The pilot experience provided elements for the hypothesis that in the absence of a complementary sustainability training project it would be difficult to see changes in human capital (knowledge, attitudes, abilities).

The Mayor or another leader of the municipal corporation is a key intermediary of the FHIS. The municipality is responsible for promoting, negotiating and supervising the projects submitted for FHIS funding and reporting to FHIS on the participation of the community in the identification, negotiation and maintenance of the project. They must follow FHIS' procedures to obtain approval of a project and their opinion on FHIS' performance and on the strengths and weaknesses of the resource allocation procedures is therefore important. They also have relationships with the communities that request projects and with the executing companies. This multiple role makes them a key informant for evaluation purposes. Since the evaluation exercise was undertaken at the start of a new period of municipal government, some of the new corporations did not have full knowledge of the history of the projects or of FHIS' operations. For this reason the municipal authorities from the previous administration were also interviewed. These were supposed to be completely familiarized with the FHIS program. Mayors and other municipal officials normally belong to the socio-economic elite; so their points of view reflect both their function as political authorities and their relatively privileged social position.

The community leaders are the most direct representatives of the villages and districts. Though exceptions exist, they usually express the opinions of the majority. They gather information on the community's needs and negotiate solutions, more or less effectively, with the municipal authorities, with NGOs and even with representatives of the central government. These leaders normally have detailed knowledge of the projects being evaluated.

NGO's have little presence among the poorest and isolated communities but are sometimes important actors in the more developed and accessible communities. Their roles include project execution; and support to the community in the identification and formulation of projects to be submitted to the municipal corporation or FHIS . NGO's were expected to provide information on the community's characteristics and on the performance of the municipal authority, and on other projects in the area whose influence could affect the impact of the FHIS projects.

Health staff (including the midwife) and teachers' principal expertise relates to their specialty field. They were asked about the quality of the installations and of the present state of the services provided by the health post or school, and about past and present community participation. It was also expected that they would be well informed about the community in general and especially in the case of teachers would often act as community spokesmen to the municipal or national authorities.

The engineer, master builder or plumber (for water projects) would have detailed knowledge of the works. During FHIS 1, the contractors played the role of promoters and negotiators of the projects that is now played by the municipal authorities. However, under FHIS 2, their

**Community characteristics of the projects studied in the qualitative component**

In discussions of the qualitative data throughout the study, there are references to specific cases. To guide the reader on the characteristics of the communities where they are located, this text box presents a summary of the type of location and poverty level of each project – community pair.

It should be noted that the definitions of "urban" and "rural" and of relative poverty used in this table are not those used by FHIS itself. The urban-rural distinction is based on the DGEC's definitions and the poverty classification in a relative measure internal to the study group, which was defined by the study team.

| Project type | Rural                   |                         | Urban                                |
|--------------|-------------------------|-------------------------|--------------------------------------|
|              | Poor                    | Less poor               | Poor                                 |
| Water        | San Miguelito           | Las Metalias            | Subirana                             |
| Letrines     |                         | El Naranjo              | Villafranca                          |
| Education    | La Empalizada; Guanijil | El Guayabo              | Las Mercedes                         |
| Health post  | San Francisco           | Potrerillos; Concepción |                                      |
| Sewerage     | Marale                  |                         | Santa Marta; 14 de marzo; 30 de nov. |

role was limited to the construction of the facility. No constructors were found to be present by the field team and due to their reduced importance under FHIS 2 no attempt was made to locate them.<sup>15</sup>

In all 62 interviews were completed: 9 with current mayors or their representatives; 11 with previous mayors; 13 with community leaders; 3 with NGO representatives; 5 with health post staff; 10 with teachers; 11 with other informants.<sup>16</sup>

These interviews helped to verify and to provide valuable context for the information obtained from the focus groups. In general, in the opinion of the study team, the information obtained was sufficient to provide a good overall perspective on the history of the project. However, it should be noted that the absence of interview with contractors may have led to an imbalance towards negative opinions of the quality of the works, to which they were unable to respond.

### *iii. Topics*

The topics varied with each category of actor. Annex 7 presents the topic guide for each group.

### f) Analysis

Analysis was undertaken with *The Ethnograph*, a computer program developed for the analysis of textual data (qualitative data). The transcribed text was coded by topic and the program was then used to group the information thematically, combining two or more codes (e.g.: women's comments on rural water projects; men's comments on project quality; mayors' comments on resource distribution; etc.). Complete transcriptions of all the focus groups and key informant interviews are available through ESA Consultores and in the World Bank project files.

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<sup>15</sup> Since the projects were finished, the contractors would not normally be in the community.

<sup>16</sup> For reasons of time and cost no effort was made to locate key informants who were not present at the time of the field visit.

## IV. The targeting of FHIS 2 towards poor communities

This chapter analyzes the distributive impacts of FHIS 1 and 2 at municipal level and of FHIS 2 at household level. FHIS seeks to target a greater proportion of its resources towards the poorest municipalities, through the use of a poverty map.<sup>17</sup> At the same time, program resources are channeled towards the poor through the use of a limited menu of project types, for which the “self-selection” of relatively poor users is expected, regardless of the municipality’s average poverty level.

The evaluation of FHIS 1 undertaken in 1994 found that the program did not meet its goal of sending more resources to the poorer municipalities. As a result, in the design of the World Bank’s support to FHIS 2, efforts were made to strengthen the targeting system.<sup>18</sup>

During the present evaluation, a detailed study was made of the resource distribution of FHIS 1 and FHIS 2 at municipal level, leading to the conclusion that, although resource distribution pattern at municipal level has improved, compared with FHIS 1, the proportion of resources received by the poorer municipalities is still not greatly above the average. However, the results of a *benefit incidence analysis* at household level show a more progressive resource distribution pattern, which sustains the hypothesis that the users of the FHIS projects are relatively poor people.

This exercise also reveals some important differences between different types of project. Health projects’ distributive impacts are found to be very progressive, in contrast to sewerage projects, which are regressive. Benefit incidence is not apparently associated with gender, as captured by the sex of the household head. FHIS’ beneficiary population has a headship structure similar to the national average and its resource distribution is therefore apparently gender-neutral.<sup>19</sup> Sewerage projects are the type that most favors households with female heads (at the same time as being the least progressive in distributive terms). The least favorable projects for this group are the health projects (which are the most progressive in distributive terms). This is probably because most households with female heads are in urban areas, where there is less poverty and where the sewerage projects were concentrated. In contrast, all the health projects studied were located in rural areas where the incidence of female headship is lower.

The aforementioned analysis deals with the distribution of the program’s resources among municipalities and households with different poverty levels. However, real benefits will only be derived if the resulting investment generates services needed by the community. For this reason, demand driven social investment programs such as FHIS remit project selection to local decisions. This is seen as the best way to ensure the optimization of the benefits. The present chapter goes on to ask to what extent program resources were assigned in line with the priorities of the beneficiary communities. If the resource distribution between the different types of projects corresponds with the priorities of the beneficiaries, it can be considered as evidence *a-priori* that the benefits perceived are important.

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<sup>17</sup> FHIS allocates resources at municipal level taking account of: a) the municipal poverty level, and b) population. The poverty map has been updated several times. The reference population during FHIS 1 and 2 was taken from the census of 1988. For FHIS 3, the population estimates have been adjusted using official projections.

<sup>18</sup> See Staff Appraisal Report - Honduras - Third Social Investment Fund Project. World Bank, June 16<sup>th</sup> 1995. Report 14181 - HO, pp 10-11.

<sup>19</sup> It should be emphasized that household headship is not the only indicator that can be used to analyze gender considerations. Some project benefits are received mainly by women, regardless of who is the household head. Chapter V., on FHIS impacts, discusses the types of benefits derived from the program.

As already mentioned, FHIS 2 did not allow a totally free selection of projects by the local community; rather, it limited the local decision within a menu of projects. It is also possible that the consultation mechanisms were not sufficiently well developed to ensure the selection of the project preferred by the majority. The interests of politicians or contractors might have distorted the choice. The study sought to determine to what extent these factors lead to sub-optimal choices from the community’s point of view. For this reasons, the household and project surveys and the qualitative consultation all included questions designed to establish up to what point project selection coincided with community priorities.

The second part of this chapter reports the study’s findings on this point. It concludes that project selection within the FHIS menu generally corresponded with the expressed priorities. Nevertheless, an important number of beneficiaries would have preferred other projects, not available in the menu, such as road projects. This leads to the conclusion that there is a tension between the policy of limiting the project selection to a menu and maximization of community utility derived from the investment, which would be best assured by allowing the beneficiary communities to make an unconstrained choice. However, it is not easy to resolve this tension in a program like the FHIS, since the logic of developing sustainable and efficient social infrastructure brings into play network planning considerations, and must in some degree respond to national judgments on the social benefits expected from the different types of investment and on the optimization of the spatial distribution of such resources.<sup>20</sup> In addition, there is no doubt that the limited menu used by FHIS 2 had a positive impact on targeting. The tension between the competing objectives of *economic efficiency* (via free project selection by the local community) and *effective targeting* (via a restrictive menu which constrains local choice) is a real one.

## A. Resource distribution of the FHIS

### 1. At municipal level

FHIS 2 distributed its resources among municipalities according to their poverty levels and populations. Five categories of municipality were defined: Very Poor, Poor, Deficient, Regular and Acceptable and goals were established for the proportion of resources to be assigned to each group.

Chart 5 reports what resources were assigned to each group under FHIS 1 and FHIS 2, compared with the proportion of the population they represent, and compares this result with the target adopted in each case. FHIS 2 did better than FHIS 1 in meeting the established goals, especially for the “very poor” group, where FHIS 1 reached only 70% of its goal, assigning fewer resources than would have been indicated by the simple population proportion (19% versus 20%). Under FHIS 2 this group received 27% of total resources and, in general, the assignments were in line with targets.

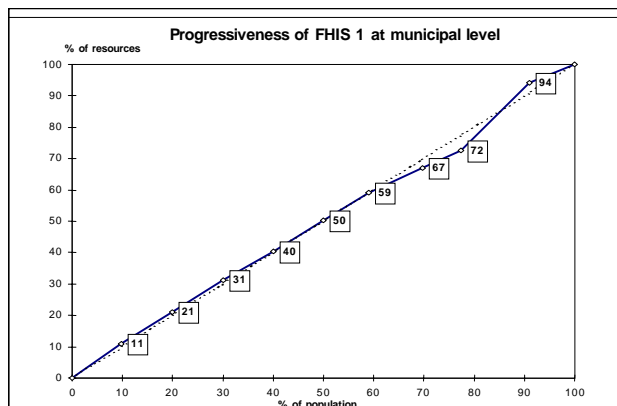
**Chart 5**  
**Resource distribution among municipalities, by poverty level**

| Group <sup>1</sup> | % of population | FHIS 1 |      |           | FHIS 2 <sup>2</sup> |      |           |
|--------------------|-----------------|--------|------|-----------|---------------------|------|-----------|
|                    |                 | Goal   | Real | Real/goal | Goal                | Real | Real/goal |
| Very poor          | 20              | 27     | 19   | 70%       | 27                  | 27   | 100%      |
| Poor               | 21              | 24     | 22   | 92%       | 23                  | 24   | 104%      |
| Deficient          | 24              | 23     | 22   | 96%       | 23                  | 21   | 91%       |
| Regular            | 26              | 20     | 29   | 145%      | 21                  | 22   | 105%      |
| Acceptable         | 9               | 5      | 6    | 120%      | 6                   | 6    | 100%      |

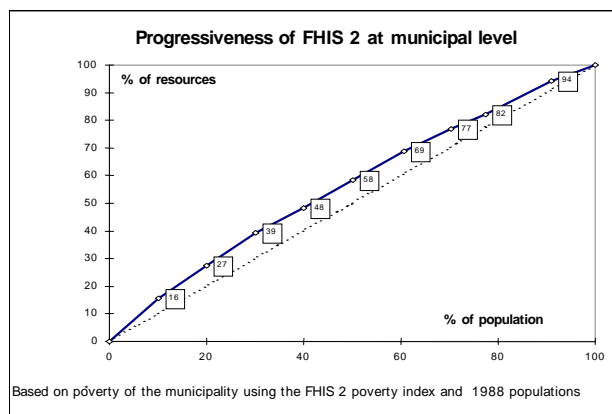
**Notes:** 1/ The poverty categories used in this table as those used in the FHIS’own targeting system and differ from those used in the text box on page 15. up to 12/97. 2/**Source:** FHIS.

<sup>20</sup> In this sense, FHIS and PRAF represent alternative strategies. PRAF distributes money to households and assigns the expenditure decision to the individual beneficiary, while the FHIS assigns resources to communities, limits the local choice in project selection to a menu and requires approval from the Ministry or other agency which is to be responsible for the operation of the infrastructure.

However, the municipal level resource distribution goals defined by FHIS 2 were not in themselves markedly progressive. Only for the richest group of municipalities was the programmed resource assignation significantly inferior to its participation in the population (6% versus 9%). However, the historical pattern of public investment distribution in Honduras before the creation of the FHIS was deeply regressive. Therefore, even a relatively neutral distribution constitutes an important step forward.



In order to establish a clear measure of the progressiveness of FHIS, the present study looked resource distribution of FHIS 1 and 2 by population decile, ordered by poverty. In order to determine how sensitive this indicator is to the technical definitions used in the analysis, the exercise was repeated with various alternative definitions of poverty and population



First, resource distribution was analyzed at municipal level. This analysis was repeated several times for FHIS 1 and 2, using three different poverty indicators<sup>21</sup> and two different population estimates<sup>22</sup>. Any difference in the results given by these different definitions would be indicative of the extent to which the program's resource allocations might have been influenced by the technical decisions about the definition of poverty and populations. The results of the analysis are presented in the graphs on this page, which show the cumulative resource distribution among the populations of municipalities with different levels of

poverty.<sup>23</sup> The results confirm that FHIS 1 did not distribute its resources very progressively, while FHIS 2 achieved a more progressive distribution.<sup>24</sup>

<sup>21</sup> The three poverty indicators used were: the Poverty Indicator of FHIS 2; that of FHIS 3; and an indicator based on the incidence of the Unsatisfied Basic needs in the 1988 Census.

<sup>22</sup> The population estimates used were: the 1988 Census (which is the same used in the FHIS 1 and 2 programming) and a population estimate of 1997 taken from official projections.

<sup>23</sup> The municipal populations are accumulated in the horizontal axis, from the poorest municipality to the richest. These are grouped in approximate deciles of the total population. The approximation is due to the fact that an individual municipality cannot be divided between two deciles, and there are some very large municipalities. In the case of Tegucigalpa, the population sums up to 15% of the total population. The FHIS resources received per decile are accumulated on the vertical axis. If at any point the resulting curve is above the 45° line, the municipalities accumulated to that point have received a proportion of the total resources, superior to their participation in the population. The higher the curve is above the 45° line, more progressive is the distribution. When the curve coincides with the 45° line, each decile receives an equal quantity of resources (zero progressiveness) and when it is below the 45° line, the distribution is regressive (insofar as the richer deciles receive more program resources than the poorer ones).

Chart 6 details the per capita resources assigned to each decile under FHIS 1 and 2, expressed as a percentage of the resources assigned to the poorest decile.<sup>25</sup> In each case, an index number is calculated to summarize the distributive impact. FHIS 1 was found to be regressive under all definitions, while FHIS 2 is slightly progressive in each case. We can conclude that the results of this analysis do not vary significantly between the three poverty and two population definitions used here.

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<sup>24</sup> Note that the graphics presented here are based on the FHIS 2 Poverty Indicator and the 1988 population. However, the results are very similar when alternative poverty and population definitions are used. The other graphs are shown in Annex 8.

<sup>25</sup> For example, when the 1988 population is used and the municipalities are ordered according to the FHIS 2 Poverty indicator (first column of the chart), under FHIS 1 you find that the ninth decile received 44% more resources per capita than the first decile; in contrast, under FHIS 2, the ninth decile received only 57% of the resources per capita which went to the poorest decile.

**Chart 6**  
**The progressiveness of FHIS resource distribution, at municipal level, using different poverty and population definitions**

| Decile /2  | Poverty indicator FHIS 2 |             | Poverty indicator FHIS 3 |             | Poverty according to UBN |             |
|--|--------------------------|-------------|--------------------------|-------------|--------------------------|-------------|
|  | Popln. 1988              | Popln. 1997 | Popln. 1988              | Popln. 1997 | Popln. 1988              | Popln. 1997 |
| <b>Resources per capita as a % of those received by the poorest decile<sup>1</sup></b> |                          |             |                          |             |                          |             |
| <b>FHIS 1</b>  |                          |             |                          |             |                          |             |
| 1  | 100%                     | 100%        | 100%                     | 100%        | 100%                     | 100%        |
| 2  | 91%                      | 95%         | 101%                     | 100%        | 93%                      | 99%         |
| 3  | 90%                      | 92%         | 109%                     | 118%        | 94%                      | 96%         |
| 4  | 83%                      | 98%         | 92%                      | 95%         | 92%                      | 98%         |
| 5  | 88%                      | 83%         | 89%                      | 95%         | 99%                      | 108%        |
| 6  | 90%                      | 97%         | 86%                      | 88%         | 80%                      | 83%         |
| 7  | 67%                      | 69%         | 78%                      | 81%         | 82%                      | 86%         |
| 8  | 64%                      | 66%         | 76%                      | 77%         | 66%                      | 67%         |
| 9  | 144%                     | 149%        | 62%                      | 67%         | 122%                     | 127%        |
| 10   | 59%                      | 63%         | 148%                     | 153%        | 61%                      | 65%         |
| Redistribn Ind. <sup>3</sup>   | -0.01                    | -0.01       | -0.05                    | -0.05       | -0.02                    | -0.02       |
| <b>FHIS 2</b>  |                          |             |                          |             |                          |             |
| 1  | 100%                     | 100%        | 100%                     | 100%        | 100%                     | 100%        |
| 2  | 76%                      | 82%         | 107%                     | 109%        | 89%                      | 93%         |
| 3  | 77%                      | 83%         | 86%                      | 88%         | 98%                      | 105%        |
| 4  | 56%                      | 59%         | 87%                      | 93%         | 87%                      | 86%         |
| 5  | 66%                      | 71%         | 77%                      | 84%         | 82%                      | 87%         |
| 6  | 63%                      | 67%         | 67%                      | 69%         | 74%                      | 76%         |
| 7  | 54%                      | 56%         | 73%                      | 76%         | 65%                      | 75%         |
| 8  | 48%                      | 52%         | 67%                      | 68%         | 101%                     | 70%         |
| 9  | 57%                      | 60%         | 46%                      | 50%         | 69%                      | 71%         |
| 10   | 41%                      | 45%         | 68%                      | 71%         | 53%                      | 56%         |
| Redistribn Ind. <sup>3</sup>   | 0.12                     | 0.12        | 0.09                     | 0.09        | 0.08                     | 0.08        |

1/ Based on the total resources of the program, according to SIG

2/ Population deciles, ordered by level of municipal poverty, according to different criteria.

3/ The index has a value of zero when each decile receives equal amounts (zero progressiveness) and a value of one when all the resources go to the poorest (maximum progressiveness). When it is negative, the program is regressive, in the sense that the richest receive more than the poorest. If the cumulative distribution curve crosses the 45 degree line the interpretation is ambiguous.

## **2. At household level**

This section presents the results of a benefit incidence analysis at household level for FHIS 2, based on information drawn from the household survey on the characteristics of the beneficiary communities and of the households that use the project facilities.

The analysis in the previous section was based on the average poverty level of each municipality. However, there is a diversity of social conditions within each municipality, so the distributive impact at household level might be very different from that observed at municipal level. Various factors might lead to differences in the degree of progressiveness at household level from that at municipal level. On one hand, FHIS 2 worked with project menu tending to "self-select" poor beneficiaries. On the other hand, the delegation of project selection to the

municipality could have a regressive impact, if the local authorities give priority to the municipal capital at the expense of the rural poor, who might lack influence in the municipal political process. For this reason, it is important to determine the characteristics of the beneficiary households.

The analysis is based on: a) Unsatisfied Basic Needs (UBN); b) per capita income and; c) gender of the family head, compared in each case with the respective national averages, taken from the national household survey. The study analyzed all the households in the area of influence of the FHIS projects (i.e. households which could use the service if they wished to); and also, separately, the households who really did use it or expressed the intention to do so (in the case of pipeline projects).

#### a) Resource distribution by UBN

Chart 7 compares the level of UBN<sup>26</sup> of the FHIS beneficiary population and that of the national population. In total, 46% of the Honduran population has no unsatisfied basic need, 26% have one UBN, 17% has two UBNs and 11% has three or more UBNs. On this measure, the poverty level in the households in the area of influence of the FHIS 2 projects is somewhat above the national average. A smaller proportion (42%) have no UBNs; while the proportion with three or more UBNs is greater, at 16%.

According to the results of the ESA survey, 64% of the population in the areas of influence are direct beneficiaries (users) of the projects (Chart 8). This proportion varies between the different projects. Some 59% of the households have a boy or girl in school, 84% use the health center, 89% have a FHIS latrine, 89% have connection to the water system and 41% are connected to the sewerage system. Of these households, only 37% have no UBNs and 22% have three or more UBNs (double the national average).

These data confirm that the FHIS: a) sends relatively more resources to somewhat poorer communities and, b) promotes projects targeted towards the poorer residents of such areas.

The poverty level of the beneficiaries varies markedly by project type. The beneficiaries of education, health and latrine projects are much poorer than the beneficiaries of water and sewerage projects. This result reflects the concentration of FHIS 2's water and sanitation projects in the urban sector, where there is less

**Chart 7**  
**UBN of FHIS beneficiaries and users, compared with the national population (percentages)**

| No. of UBN:   | 0    | 1    | 2    | 3/ more |
|---|------|------|------|---------|
| <b>a) UBN of the total country population<sup>1</sup></b> |      |      |      |         |
| Total   | 45.8 | 25.5 | 17.3 | 11.4    |
| <b>b) UBN of popln. with access to FHIS projects</b>      |      |      |      |         |
| Total   | 41.9 | 25.4 | 16.3 | 16.3    |
| Education   | 44.9 | 24.3 | 14.0 | 16.7    |
| Health  | 22.1 | 36.2 | 24.0 | 17.7    |
| Water   | 47.5 | 25.6 | 17.3 | 9.6     |
| Sewerage  | 47.1 | 25.4 | 21.1 | 6.4     |
| Latrines  | 18.6 | 28.2 | 29.9 | 23.3    |
| <b>c) UBN of users of FHIS projects<sup>2</sup></b>       |      |      |      |         |
| Total   | 37.3 | 22.7 | 18.1 | 21.9    |
| Education   | 38.5 | 20.0 | 16.8 | 24.7    |
| Health  | 19.1 | 36.5 | 24.6 | 19.8    |
| Water   | 51.1 | 26.2 | 14.3 | 8.4     |
| Sewerage  | 80.0 | 15.0 | 5.0  | 0       |
| Latrines  | 19.6 | 30.8 | 28.4 | 21.2    |

1/ Source: EPHPM 1997

2/ Source: ESA Survey

**Chart 8**  
**Households in area of influence that are users of project FHIS/1**

| Type of project | %    |
|-----------------|------|
| Education       | 59.4 |
| Health          | 84.4 |
| Water           | 89.3 |
| Sewerage        | 40.7 |
| Latrines        | 88.7 |
| Total           | 64.1 |

Source: ESA Survey BENEF04.XLS

Note: see text for the definitions of users

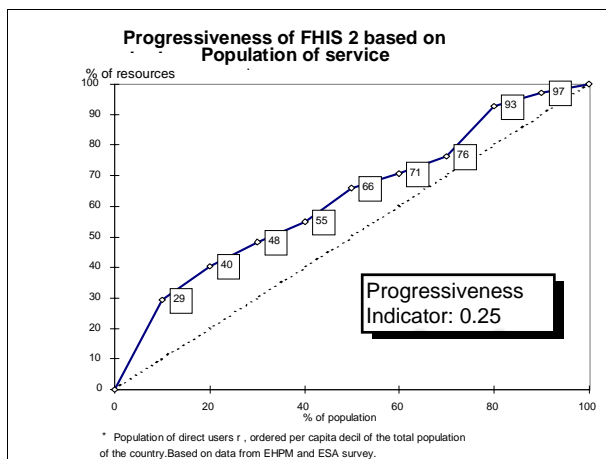
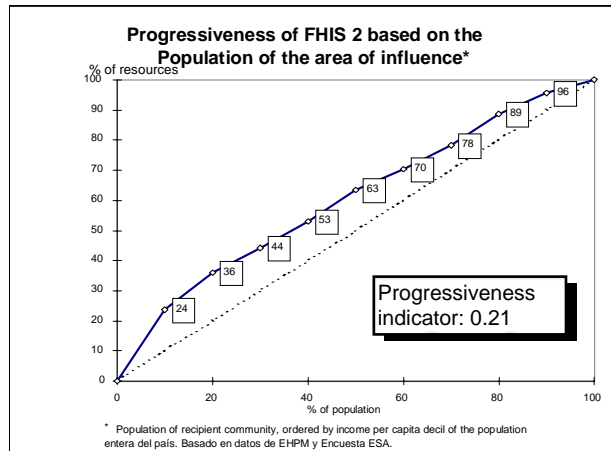
<sup>26</sup> Section V.A.1 below presents a detailed definition of the concept of UBN as applied in this study.

poverty.

b) Resource distribution by per capita income

In the previous paragraph, UBN was used to define poverty levels. In this paragraph, the criteria used is per capita income.

The Permanent Multi Purpose Household Survey (EPHPM) was used to establish the ranges of incomes pertinent to each decile of households at national level. The ESA survey used this definition to locate each beneficiary household in the national population decile to which it corresponds. The FHIS' SIG provided information on the amount of investment for each project, and this was allotted among population deciles according to the income distribution of the beneficiary households.<sup>27</sup>



This analysis was undertaken separately for each type of project and a global estimate was made for the totality of the beneficiary communities, taking account of the relative importance of the different types of projects within the FHIS portfolio, according to SIG. The results of this analysis are reported on Chart 9 (where details of the estimation methodology are given) and the two graphs on this page.

This exercise reveals a considerably more progressive pattern of resource distribution at beneficiary household level, compared with the results of the municipal level analysis. For the area of

influence, the general progressiveness indicator is 0.21, compared with 0.12 for the municipal level analysis (reported in Chart 6). When only direct beneficiary households are considered, the indicator goes up to 0.25. According to this analysis, the poorest household decile receives 29.5% of the total program resources, which is a very positive finding.

<sup>27</sup> It was supposed that each beneficiary of a given project receives an equal proportion of its resource. That is, if 20% of the identified beneficiaries in decile1, 20% of the project's resources were received by decile1.

**Chart 9****Benefit incidence of the FHIS 2 resources, based on per capita household income**

|                            | Household deciles in the national population, from poor to rich /1   |             |            |            |             |            |            |             |            |            |
|----------------------------|--|-------------|------------|------------|-------------|------------|------------|-------------|------------|------------|
|                            | 1  | 2           | 3          | 4          | 5           | 6          | 7          | 8           | 9          | 10         |
|                            | % of the <b>potentially beneficiary population</b> of FHIS 2 in each decile /2   |             |            |            |             |            |            |             |            |            |
| <b>By % of population</b>  | 19.0   | 13.0        | 9.7        | 8.9        | 7.6         | 7.7        | 12.0       | 10.4        | 7.2        | 4.4        |
| <b>By % of resources</b>   | % of the <b>resources</b> of FHIS 2 received by each decile, <i>based on the potentially beneficiary population</i> /2 |             |            |            |             |            |            |             |            |            |
| Education                  | 25.9   | 11.1        | 6.6        | 8.2        | 9.7         | 7.1        | 6.9        | 11.0        | 8.9        | 4.5        |
| Health                     | 36.0   | 17.1        | 12.3       | 8.3        | 8.3         | 4.3        | 4.3        | 4.9         | 2.0        | 2.5        |
| Water                      | 17.3   | 15.0        | 13.0       | 12.5       | 9.5         | 4.8        | 9.8        | 11.2        | 2.5        | 4.4        |
| Sewerage                   | 8.7  | 10.7        | 5.1        | 8.3        | 13.6        | 11.1       | 16.9       | 12.2        | 7.7        | 5.8        |
| Latrines                   | 22.1   | 18.7        | 14.8       | 11.5       | 14.0        | 7.6        | 3.5        | 4.7         | 1.6        | 1.4        |
| <b>Tot. of resources/4</b> | <b>23.7</b>  | <b>12.4</b> | <b>8.1</b> | <b>8.9</b> | <b>10.3</b> | <b>7.1</b> | <b>7.9</b> | <b>10.3</b> | <b>7.1</b> | <b>4.3</b> |
|                            | % of the <b>potentially beneficiary population</b> of FHIS 2 in each decile  |             |            |            |             |            |            |             |            |            |
| <b>By % of population</b>  | 22.0   | 15.3        | 11.8       | 8.9        | 6.9         | 8.3        | 11.8       | 7.5         | 4.0        | 3.5        |
| <b>By % of resources</b>   | % of the <b>resources</b> of FHIS 2 received by each decile, <i>based on the potentially beneficiary population</i> /2 |             |            |            |             |            |            |             |            |            |
| Education                  | 36.0   | 10.0        | 6.2        | 5.1        | 10.5        | 3.9        | 4.9        | 16.0        | 5.1        | 2.3        |
| Health                     | 36.0   | 14.7        | 12.7       | 7.0        | 14.2        | 2.7        | 4.3        | 4.6         | 1.2        | 2.6        |
| Water                      | 18.2   | 13.1        | 13.1       | 12.8       | 10.0        | 5.2        | 10.4       | 9.6         | 3.1        | 4.6        |
| Sewerage                   | 6.3  | 7.2         | 5.4        | 5.7        | 8.7         | 6.6        | 7.6        | 42.5        | 6.0        | 4.1        |
| Latrines                   | 12.9   | 16.7        | 15.8       | 13.3       | 19.4        | 10.2       | 4.5        | 4.4         | 1.2        | 1.5        |
| <b>Tot. of resources/4</b> | <b>29.5</b>  | <b>10.8</b> | <b>8.0</b> | <b>6.6</b> | <b>11.0</b> | <b>4.6</b> | <b>5.8</b> | <b>16.5</b> | <b>4.4</b> | <b>2.7</b> |

## Notes

1/ The household deciles at national level were established from the per capita income reported on the EPHPM (Sept 1997) applying the IPC to update it to July 1998. The information on income of beneficiary households was taken from the ESA survey (July 1998), using definitions consistent with the EPHPM methodology. On each case (both in the ESA survey analysis as well as the EPHPM analysis) the unknown incomes are excluded from the calculation of the total household income – no imputation of income is made.

2/ Potential beneficiaries are the households located within the immediate influence area of the project, according to the sample frame of the ESA survey.

3/ Real beneficiaries are households that use or declare the intention of using the project services, according to the ESA survey. Excluded from this analysis were the projects in planning phase where it was not possible to establish which households would use them.

4/ The total is calculated from the sub-totals of each type of project, and is weighted to reflect the distribution of the FHIS 2 resources between the 5 types of projects analyzed. The resources used for other types of projects are not included in the analysis. (Source files: \datfhis\benefiia for resources and \benefiib for population).

As for the UBN analysis, the income based analysis reveals important differences in the progressiveness of resource distribution by type of projects. Health projects have the most progressive pattern in benefit distribution; while sewerage projects report a very regressive pattern. Annex 9 shows graphs of the distributions for each type of project.

### c) Distribution according to gender

A gender analysis of the benefit distribution was made, based on the sex of the head of the beneficiary household (Chart 10). Overall, FHIS' beneficiary population has a headship pattern much the same as the national pattern.

However, sewerage projects report a greater proportion of beneficiaries with female heads; and the health projects a lower proportion, compared with the national average. This result probably reflects the fact that health projects studied here are all rural (where there is a lower incidence of female headship) and the sewerage projects are totally urban. It is also possible that in the urban sector there is a greater probability of connecting to the sewerage system in households with women family heads.

### 3. Excluded groups

The results reported above confirm that FHIS 2 did well in targeting its resources towards poorer households. Nevertheless, there were some poor households in the beneficiary communities that did not benefit from the projects. In the qualitative study, an effort was made to characterize this problem.

In point service projects such as education and health posts (CESAR's), no one considered themselves excluded from the potential use of the services. The exclusion problem was limited to network services (water and sewerage) and latrines. It related, in general, to recent arrivals (immigrants) and/or inhabitants of peripheral areas who were relatively poor and less influential in the community.

The incidence of this sort exclusion cannot here be estimated precisely, as it is based on the data gathered in the qualitative investigation or on the FHIS file registers of beneficiary numbers, which are in many cases not credible. The number of households reported as excluded varied from virtually zero (Subirana) to 500 (Marale y Villafranca). The ratio between the excluded and beneficiary households<sup>28</sup> varied from zero to almost ten. High proportions of exclusion (where the number excluded exceeded the number that benefited) were observed in only three cases, where the project was deliberately designed to benefit only one sector of a relatively large population (the sewerage projects in Marale and Colonia 30 de Noviembre and a latrine project in the capital's Colonia Villafranca). In the rest of the cases, the original intention was to benefit the whole population, but immigration kept changing the panorama. *Part I of Annex 15 gives details of the study's findings on exclusion by project type.*

## B. Choice of project and community participation

This section presents findings on the process of project selection in beneficiary communities. The findings confirm that in the majority of cases, the remission of project choice to municipal level resulted in the selection of projects in line with community priorities. It presents first the findings of the household survey followed by the results of the qualitative consultation.

**Chart 10**  
**Benefit distribution according to gender**

| Percentages         | Family head |       |
|---------------------|-------------|-------|
|                     | Man         | Women |
| National population | 77.9        | 22.1  |
| Influence zone      |             |       |
| Total               | 76.2        | 23.8  |
| Education           | 76.0        | 24.0  |
| Health              | 84.8        | 15.2  |
| Water               | 74.5        | 25.5  |
| Sewerage            | 68.1        | 31.9  |
| Latrines            | 77.9        | 22.1  |
| Direct users        |             |       |
| Total               | 79.3        | 20.7  |
| Education           | 79.9        | 20.1  |
| Health              | 86.6        | 13.4  |
| Water               | 75.3        | 24.7  |
| Sewerage            | 60.4        | 39.6  |
| Latrines            | 78.0        | 22.0  |

Source: EPHPM and ESA Survey

<sup>28</sup> For this calculation, the estimated number of people per household was taken to be five.

### 1. Consultation and participation

#### a) Quantitative evidence

The household survey (module 4) registered all the health, education, water, sewerage and latrine projects that had been executed in the zone since 1994. For each project that was identified, it asked: who organized the project; were the interviewee or their family consulted about it; did they participate in any way in the project; and did they use or intend to use the project's services. This permitted the analysis of the consultation and participation pattern in FHIS projects, compared with other projects in the community.

Projects where FHIS was involved registered more consultation with the community, compared with other projects. On average, 73% of the households were consulted on FHIS projects, compared with 50% for other projects (Chart 11). This pattern is consistent among all types of projects, which suggests that it is the product of the program methodology.

FHIS uses private contractors to execute its works, which limits the scope for community participation in the construction phase.<sup>29</sup> However, the evaluation found evidence of a variety of mechanisms to incorporate community contributions, which in turn has a positive impact on the subsequent demand for the service. According to the household survey, 58% of households had participated in some way in FHIS projects, versus 30% in other agencies' projects. The main forms of participation were donations of labor, money and materials. (Chart 11).

#### b) Qualitative evidence on consultation and participation

According to the qualitative study, there was normally ample community participation in project selection. Most of the projects studied originated in a community initiative. However, the study also found evidence of the intervention of intermediaries during the negotiation and execution phases, leading in some cases to a lack of transparency about the development of the project in the community.

The community's knowledge of a project's history is a good indicator of the degree of their commitment to it and participation in it. The study sought to establish if group participants knew how the project was negotiated, the name of the contractors, basic data (dimensions, quantities, costs) and information on the operation of the infrastructure. Almost all of the communities showed good general knowledge of the project and credited FHIS' role. Two cases were found where the community had little knowledge of the project: Barrio Las Mercedes (urban/education) and San Miguelito (rural/water). In each case, the community's lack of knowledge of the project was due to its direct negotiation by individuals, without consultation with the community. This may have arisen because these projects were to improve existing facilities and not to build new ones.

**Chart 11**  
**Impact of FHIS' presence on consultation and participation**

|   | FHIS Projects | Other Agencies' Projects |
|---|---------------|--------------------------|
| <i>% that were consulted on the project</i> |               |                          |
| School                                      | 68            | 39                       |
| Health center                               | 75            | 34                       |
| Water system                                | 66            | 73                       |
| Sewerage                                    | 85            | 36                       |
| Latrines                                    | 86            | 60                       |
| Total                                       | 73            | 50                       |
| <i>% that participated in the project</i>   |               |                          |
| School                                      | 54            | 29                       |
| Health center                               | 53            | 25                       |
| Water system                                | 54            | 68                       |
| Sewerage                                    | 64            | 38                       |
| Latrines                                    | 75            | 41                       |
| Total                                       | 58            | 30                       |
| <i>Principal types of participation</i>     |               |                          |
| Labor force                                 | 36            | 26                       |
| Money                                       | 17            | 13                       |
| Materials                                   | 6             | 2                        |
| Other                                       | 8             | 4                        |

**Note:** FHIS Proj. = where the interviewee identifies FHIS as one of the agencies involved. The total includes all projects executed by any agency since 1994, according to the interviewee.

**Source:** ESA Survey CO4M4.LST

<sup>29</sup> See page 3 for details on FHIS' policy regarding the use of paid labor in its projects.

Detailed knowledge of project histories, including the original negotiations, construction details, of the final operating agreements, tends to be restricted to the community boards in charge of the project. The more urban the community, the more this holds true. In the residential areas of the largest cities, such boards often grow distant from the residents and the residents are less inclined to seek information. In such situations, the restriction of flows of information may become a source of power and an effective mechanism to avoid criticism from rivals.

In all but four of the projects studied in the qualitative exercise, a community organization had taken the leadership in developing the project proposal. The exceptions were Las Mercedes (urban/education); San Miguelito (rural/water), Marale (rural/sewerage); and La Empalizada (rural/education). However, in later stages, the experience of community participation was varied. Half the cases complied with the expected model in which the community originates the proposal and submits it to the municipality, justifying its case in an open meeting, following which the municipality submits the project to the FHIS. This pattern was observed in Las Metalias (rural/water), Santa Marta (urban/sewerage), La Empalizada (rural/education), Guanijiquil (rural/education), Concepción (rural/health), Potrerillos (rural/health) and El Naranjo (rural/latrines).

However, in many cases, other mediators were also involved in the process. In one case, a teacher was involved. In two cases, the mayor acted on his personal initiative. In two cases, an engineer interested in getting the contract was involved; and local politicians were involved in three cases. In two cases, the community dealt directly with the FHIS, without going through the municipality. This was observed in El Guayabo: (rural/education) and Potrerillos (rural/health). In the latter case FHIS opposed the original project request that emerged from the community. Details of these cases are given in part II of Annex 15.

The presence of intermediaries in the negotiation and execution phases was not found to be associated with any particular type of project or socioeconomic conditions. Their involvement was sometimes related to the lack of community initiative, which might in turn reflect an authoritarian style of municipal administration. In other cases the community deliberately involved a politically influential intermediary as part of their negotiation strategy. The institutionalization of the new methodology adopted by FHIS in 1998 for project prioritization and selection in municipal open meetings, should tend to reduce the future role of political intermediaries in obtaining approval for projects.

## **2. Community opinions on the priority of FHIS projects**

### **a) Quantitative evidence**

The previous section showed that the community had a relatively high level of involvement in the orientation of FHIS 2's investment decisions. However, collective consultations may be dominated by unrepresentative individuals and the resulting choice need not necessarily coincide with the desires of the majority of individual community members.

To find out if the choice of FHIS 2 projects coincided with the real preferences of the community, the household survey asked whether the project elected by the FHIS was the most needed from the available options *among the group of FHIS projects being evaluated*. They were also asked if they would have preferred another type of project, *not included in this group*; and if so, what type of project would they have preferred. Chart 12 presents the findings on this point.<sup>30</sup>

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<sup>30</sup> The field procedure used to generate this information was as follows. First, the interviewee was shown a card with images and words to identify the five types of projects being studied in the present evaluation. They were told that FHIS could have funded any of these project types and which of them was chosen. The interviewee was then asked which type project on the list they personally would have preferred at that time. They were then asked if there was any another type of project, not included in the card, which they

Where FHIS funded water, education and health projects, these generally coincided with the community's priorities. The water projects were the preference of 64% of beneficiaries; education projects, of 47%; and health projects, of 35%. In these three cases, the chosen project received far more support than any other type of project. In contrast, sewerage and latrine projects often did not correspond with the community's priorities. Only 4% and 7%, respectively, said they would have chosen this type of project.

The study revealed considerable demand for projects not included in the group being evaluated. 33% of the interviewees would have preferred other type of projects, their main priorities being roads and electricity.

**Chart 12**  
**Opinions on the suitability of the chosen projects**

|  | Type of project FHIS built or is building |           |           |           |           | Average   |
|--|---|-----------|-----------|-----------|-----------|-----------|
|  | Health                                    | Edn.      | Water     | Sewer     | Latrine   |           |
| % of the interviewee households                          |   |           |           |           |           |           |
| <b>Type of project the interviewee would have chosen</b> |   |           |           |           |           |           |
| <b>Evaluated project types</b>                           | <b>55</b>                                 | <b>69</b> | <b>72</b> | <b>38</b> | <b>45</b> | <b>56</b> |
| Health   | 35  | 11        | 3         | 18        | 6         | 15        |
| Education  | 1   | 47        | 1         | 6         | 5         | 12        |
| Water  | 4   | 7         | 64        | 10        | 23        | 22        |
| Sewerage   | 9   | 3         | 3         | 4         | 5         | 5         |
| Latrines   | 6   | 1         | 1         | 0         | 7         | 3         |
| <b>Other project types /1</b>                            | <b>40</b>                                 | <b>22</b> | <b>14</b> | <b>48</b> | <b>42</b> | <b>33</b> |
| Electricity /Public lights                               | 13  | 0         | 3         | 1         | 15        | 7         |
| Roads and bridges  | 8   | 11        | 5         | 28        | 6         | 12        |
| Secondary education                                      | 8   | 0         | 0         | 0         | 0         | 2         |
| Kindergarten   | 3   | 0         | 0         | 1         | 14        | 4         |
| Other  | 8   | 10        | 6         | 19        | 7         | 10        |
| Does not know / no opinion                               | 5   | 9         | 15        | 13        | 13        | 11        |

1/ Note that some of these types of projects could be financed by FHIS 2, for example, roads and bridges. However, they were not included in this evaluation.

b) Qualitative evidence

The qualitative study sought to determine to what extent influential groups or individuals managed to impose their priorities on the rest of the community in the process of project choice. Obviously, collective ventures are usually initiated by relatively prosperous and successful community members (for example, the members of the *patronato*). However, it is important to establish to what extent the consultation process resulted in the adoption of the leaders' priorities by the collectivity, or at least by a majority; or whether, alternatively, the local leaders had imposed their agendas on an unwilling community.

The findings on this point were positive for the FHIS. Almost all the focus groups and key informants consulted considered that the FHIS projects were "priorities". Only in two of the 16 cases studied (including the pilot case) were testimonies presented that indicated other preferences of the community: a school project and a sewerage project. In each of these cases, the first preference was a water project. The text box on the next page details what happened.

would have preferred at that time over any of the projects on the card. If the answer was yes, the type of project mentioned was recorded.

**The selection of a non-priority project: two case studies**

In the village of **La Empalizada** in Olancho, a new school was built. The community would have preferred a drinking water system (Men Focus group) or a health center (Women Focus group). The water project proposal arose before the school proposal and had the Mayor’s support, but was blocked by the refusal of a neighboring village to share its water source. Meanwhile, the teacher of the deteriorated school had mobilized community support for including the new school in the municipality’s request to the FHIS. The school proposal was finally preferred to the Health Center proposal since the teacher’s post already existed so there would be no need to lobby the ministerial approval for hiring personnel.

*“For me, the school is in second place. The health center should be first...”* (Schoolteacher).

In **Marale**, in Francisco Morazán, a sewerage system was constructed. However, a large part of the community would have preferred a new drinking water system or agricultural production support projects. According to the ex-mayor, the sewerage project was chosen in order to take advantage of the additional resources from a Swiss Fund, which was limited to this type of project..

*“Now that you mention the water project, I think that here they do things backwards. First, we have a deficient water system.... The tubes leak and when a storm comes, we drink water with mud... It is a system that is over twelve years, old, I think...Unfortunately no survey was made in the village..... How can a sewerage project work without drinking water? Not having drinking water....there will be a terrible epidemic with the faeces...”* (Men’s Focus group).

**3. Community participation in the project**

Contributions of money, in kind or of labor are therefore known to contribute to community “ownership” of the project, where they perceive themselves to be the owners and assume responsibility for the operation of the service. Community participation in project costs is expected to increase the probability of a high rate of use of the project. At the same time, knowing that they will later have to pay for the operation of the service through a tariff should result in the community considering what technical option maximizes the cost-benefit relation. The best sort of participation is unforced; and arises from good communication resulting in the

*“When we arrive at a community and we give away everything, that is definitely destructive... (the best projects) are those where the community has contributed, either with money or with voluntary work; they take care of them, they give them follow-up, you can see a clear difference.”* (Virgilio M. Padilla, Mayor of El Progreso).

motivation of the community.

The household survey provides firm evidence of a correlation between participative methodologies and high levels of usage of the projects. For all types of projects, both the FHIS’ involvement and prior consultation increase the usage rate of the service (Chart 13).

The effect of participation on usage is especially marked: in all cases, more than 85% of the homes that have participated in the execution of the project were service users and normally this figure is close to 100% (Chart 14).

**Chart 13**  
**Impact of the FHIS and consultation on the use of the services**

| Type of project | Total   | FHIS Proj. | Other Proj. | Consulted | Not consulted |
|-----------------|---|------------|-------------|-----------|---------------|
|                 | <i>% of households that use or will use the project</i> |            |             |           |               |
| School          | 80  | 80         | 79          | 87        | 70            |
| Health Center   | 89  | 92         | 87          | 96        | 83            |
| Water           | 93  | 97         | 92          | 99        | 78            |
| Sewerage        | 85  | 90         | 78          | 98        | 62            |
| Latrines        | 74  | 82         | 66          | 81        | 55            |

**Note:** FHIS = projects where the interviewee identifies FHIS as one of the agencies involved in the project. Consulted = Households that say they were consulted on the project.

**Source:** ESA Survey C05M4.LST

**Chart 14**  
**Impact of participation on the proportion of households that use the project services**

| Type of project | % of households that use or will use the project |       |                          |           |       |
|-----------------|--|-------|--------------------------|-----------|-------|
|                 | Did not Participate                              | Labor | Participated with: Money | Materials | Other |
| School          | 71   | 93    | 87                       | 98        | 94    |
| Health Center   | 84   | 100   | 99                       | 88        | 91    |
| Water           | 82   | 99    | 98                       | 96        | 93    |
| Sewerage        | 76   | 99    | 97                       | 100       | 90    |
| Latrines        | 40   | 99    | 98                       | 100       | 96    |

Source: ESA Survey C06M4.LST

The qualitative study allows a better understanding of the concrete participation mechanisms that have emerged. Half of the projects visited (8 of 16)<sup>31</sup> received a variety of material contributions from the community, including land, voluntary work, transportation of materials, payment of connection rights and the purchase of furniture. Communities had also given indirect contributions, which in some cases amounted to

considerable sums, such as the payment of transportation costs, per diems and paperwork of its representatives during the negotiation of the project, and expenses related to the maintenance of the work. In summary, the majority of the communities had given counterpart resources. Generally, rural and poorer communities offered voluntary work and small monetary contributions, including land. Urban communities were less inclined to offer voluntary work but showed more capacity for monetary contributions and some services (eg materials warehousing). *For details, see Annex 15.*

**4. FHIS and the formation of social capital: training for sustainability and of “ownership” of the project**

The answer to the question: “To whom does this project belong?” is a straightforward indicator of the degree of ownership of the projects. In this sense, 12 of the 16 projects studied in the qualitative exercise were considered “owned” by their respective communities. Factors which might be expected contribute to a sense of ownership include: firstly, the community’s participation in the identification, prioritization and negotiation of the project; secondly, the FHIS and/or the constructor’s efforts to increase the community’s involvement, through detailed and clear information and training; and thirdly, the community’s participation in the project’s administration. When a project ends up being effectively operated and managed by “others”, the community’s sense of ownership is weakened.

*Interviewer:* Lets see, Don Antonio, for you, ¿to whom does this project belong?  
*Don Antonio:* It belongs here, it’s ours, to the community; everything belongs to the community.  
*Interviewer:* ¿Do you really feel it is yours?  
*Don Antonio:* Yes, yes.  
 (Men’s Focus group, Aldea San Francisco, municipio de Langué, departamento de Valle)

The previous section showed that the majority of communities had played an active role in project identification and prioritization and that the majority had participated in an indirect or direct manner in the project’s costs. So the first factor tending to generate a sense of ownership was present in most cases.

What about the second condition? Ideally, each project should be preceded by an effort to inform the community on how, where and by whom the project will be built, and what is expected of the community. The way this sort of information is transmitted is also important: is the community simply informed, or is there an opportunity for feedback and for proposals to change the plans? The study found that eight communities had been informed and/or trained regarding the project, but that there was little flexibility or openness to changes<sup>32</sup>. This process

<sup>31</sup> These projects were located in the following communities: La Empalizada, El Guayabo, San Francisco, Potrerillos, Santa Marta, Subirana, Villafranca and El Naranjo.

<sup>32</sup> On the subject of training, see *Chapter V, sección E, 6.*

is therefore likely to have done little to reinforce ownership and in some cases, might even have weakened it.

The communities that responded that the project belong to “others” had a common denominator. They were sewerage projects where the community paid for the connection rights to the national water company (SANAA) or the municipality. The community did not administer the project or have the technical expertise needed to do so and it would not be responsible for future investments. This led to the conclusion that the project does not belong to them.

*We paid for the connection right, consequently, from this moment on, the project passes to SANAA, that is the institution in charge of maintaining the sewerage and drinking water networks.*

Men’s Focus group, Colonia 30 de noviembre.

However, in many of the other projects studied here the community perceived itself to be the owner even though involved state agencies such as the education and health ministries and municipalities were involved in their administration. This happened, in general, because efforts had been made to involve the community in the definition and later operation the projects.

For example, community Water Boards and Health Committees had been formed. Water Boards managed several of the drinking water systems studied, with responsibility for collecting tariffs, project maintenance and the protection of water sources. The health committees support the health post personnel in the maintenance of the CESARs and in community hygiene activities and preventive health. In the case of schools, the feeling of ownership was strengthened where teachers encouraged co-government of the school and stimulated parent organizations. The Guanijiquil example is typical. See box.

*Participant:* Yes, the community should ... take care of the school, because if it collapses, they wont come to put it up again.

*Interviewer:* So how have you responded? ¿What have you done to start taking care of this school?

*Participant:* In first place, some tiles had fallen down after a gale, so the Parents’ Association requested that we all bring a tile to replace the fallen ones.

*Interviewer:* I understand that something else was organized here...

*Participant:* Yes, a board called ORMA

*Interviewer:* ORMA, What does that mean? The Rebel Organization of Anonymous Husbands?

*Participant:* (Laughs..) No, it means Organization Responsible for the Maintenance of the School.

Mixed Sex Focus group, Aldea de Guanijiquil.

Latrine projects have a somewhat different dynamic. Their ownership is obviously individual; the problem is how well this individual property is managed. Self-esteem and respect for others are critical here and both are strongly attached to moral and civic values. This type of citizenship responsibility is easier to generate in less complex rural communities than in urban barrios. *For more discussion on this point, see Annex 15.*

In summary, the projects with higher “ownership” were those with community participation in the project initiative as well as in the management or co-management of the facility and where the community was informed on the details of the construction of the works. In this sense, the projects with most elements of ownership were:El Naranjo or in Las Metalias, El Guayabo, Potrerillos and Villafranca. It is noteworthy that all of these projects, except Villafranca, are rural.

### C. Conclusions

This chapter has presented evidence on FHIS’ targeting results and on the community participation mechanisms promoted by the program. The findings suggest that FHIS 2 achieved a more progressive distribution pattern than FHIS 1 and that it had a more participative methodology for project and beneficiary selection, compared with other agencies present in the same communities, leading to a good match between community priorities and FHIS investment choices. As a result, in the majority of the cases, an acceptable level of project

ownership by the community is observed. However, there are clear areas of concern. Sewerage and latrine projects were found not normally to be the first priority of the community and in the case of sewerage, the projects' distributive impact was markedly regressive.

## V. The impact of FHIS

The findings reported in Chapter IV augur well for FHIS 2's impact on social conditions in Honduras. A large proportion of the program's resources reached the poor and there was a good correspondence, at local level, between the choice of project and the community's priorities. There was also reasonable level of community "ownership" of the projects, which should favor their sustainable operation. Both theory and experience tell us that these factors should contribute to a program's developmental effectiveness. In order to establish to what extent this expectation was fulfilled in the case of FHIS 2, the present chapter presents findings on the program's development impacts of at household level.

### A. The FHIS and Basic Needs

#### 1. Trends in basic needs in the nineties

One method for measuring poverty is the analysis of Unsatisfied Basic Needs (UBN). Data from the bi-annual multi-purpose household survey (EPHPM) of the Honduran government's statistical office (DGEC) allow us to trace changes in the level of UBNS through the 1990s.<sup>33</sup> For this exercise, basic needs were defined as follows:

#### Water

- Access to drinking water in the property (urban households);
- Access to water from a piped system or well (rural households)

#### Sanitation

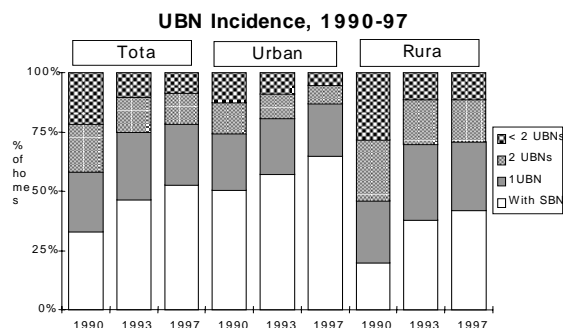
- Have a WC other than a simple pit latrine (urban households)
- Have at least a simple pit latrine (rural households)

#### Primary Education

- Children with primary age are enrolled in school (urban and rural households)

#### Subsistence capacity

- The family head has 3 or more years of primary education and is employed; otherwise, that there is at least one person employed for each three household members (urban and rural households).



**Table 15**  
**Global incidence of UBNS**

|                       | 1990            | 1993 | 1997     | 90/93 | 93/97 |
|-----------------------|-----------------|------|----------|-------|-------|
| <b>National Total</b> | % of households |      | % change |       |       |
| With SBN              | 33              | 47   | 53       | 42    | 13    |
| 1 UBN                 | 25              | 28   | 26       | 12    | -9    |
| 2 UBN's               | 20              | 15   | 13       | -25   | -9    |
| > 2 UBN's             | 22              | 10   | 8        | -55   | -20   |
| <b>Urban/1</b>        | % of households |      | % change |       |       |
| With SBN              | 50              | 57   | 65       | 14    | 14    |
| 1 UBN                 | 24              | 23   | 22       | -4    | -4    |
| 2 UBN's               | 13              | 11   | 8        | -15   | -27   |
| > 2 UBN's             | 13              | 9    | 5        | -31   | -44   |
| <b>Rural/1</b>        | % of households |      | % change |       |       |
| With SBN              | 20              | 38   | 42       | 90    | 11    |
| 1 UBN                 | 26              | 32   | 29       | 23    | -9    |
| > 2 UBN's             | 26              | 19   | 18       | -27   | -5    |

**Source:** Data base, EPHPM, DGEC. **SBN** = Satisfied basic Needs.

1/ Note that the definitions of "urban" and "rural" used in the present analysis are those of DGEC, not of FHIS.

<sup>33</sup> The UBN analysis methodology for Honduras is defined in: Honduras Libro Q - Pobreza, Potencialidad y Focalización Municipal, published by SECPLAN in January 1994 (Second revised edition), pages 12 and 13., which was based on data from the 1988 Census. In two cases, the EPHPM registers used in the present study are different from those of the Census. In these cases, the closest possible definitions to those of Libro Q have been adopted. The differences are the following: 1) The need for water is defined in Libro Q as satisfied in urban areas when there exists tube water within 100 meters of the home. 2) Overcrowding is calculated in Libro Q based on a total of rooms which excludes the kitchen as well as the bathroom.

**Table 16**  
**Incidence of each type of UBN**

|                     | 1990                   | 1993 | 1997 |
|---------------------|------------------------|------|------|
| <b>National</b>     | <i>% of households</i> |      |      |
| Water               | 27                     | 15   | 8    |
| Sanitation          | 34                     | 17   | 17   |
| Education           | 12                     | 7    | 7    |
| Sustenan.Cap.       | 27                     | 21   | 17   |
| Crowding            | 34                     | 26   | 26   |
| Household Condition | 9                      | 6    | 5    |
| <b>Urban</b>        |                        |      |      |
| Water               | 18                     | 16   | 7    |
| Sanitation          | 13                     | 7    | 6    |
| Education           | 6                      | 4    | 3    |
| Sustenan.Cap.       | 17                     | 14   | 9    |
| Crowding            | 24                     | 21   | 19   |
| Household Condition | 19                     | 14   | 11   |
| <b>Rural</b>        |                        |      |      |
| Water               | 33                     | 15   | 9    |
| Sanitation          | 50                     | 26   | 26   |
| Education           | 16                     | 9    | 10   |
| Sustenan.Cap.       | 35                     | 27   | 25   |
| Crowding            | 41                     | 30   | 32   |
| Household Condition | 1                      | 0    | 0    |

Source: Data base, EPHPM, DGEC.

**Table 17**  
**Trends in UBN affected by FHIS**

|                       | 1990                   | 1993 | 1997 | 90/93           | 93/97 |
|-----------------------|------------------------|------|------|-----------------|-------|
| <b>National Total</b> | <i>% of households</i> |      |      | <i>% change</i> |       |
| UBN FHIS              | 72                     | 39   | 31   | -46%            | -20%  |
| UBN no-FHIS           | 69                     | 53   | 49   | -22%            | -9%   |
| <b>Urban</b>          |                        |      |      |                 |       |
| UBN FHIS              | 37                     | 27   | 17   | -28%            | -38%  |
| UBN no-FHIS           | 59                     | 48   | 39   | -18%            | -19%  |
| <b>Rural</b>          |                        |      |      |                 |       |
| UBN FHIS              | 100                    | 50   | 45   | -50%            | -10%  |
| UBN no-FHIS           | 76                     | 57   | 57   | -25%            | 0%    |

Source: Our analysis with EPHPM, DGEC data bases

### Overcrowding

- No more than three persons per room, excluding bathrooms (urban and rural households)

### Condition of the dwelling

- Dwelling is not improvised and does not have a dirt floor (urban household)
- Dwelling is not improvised (rural household)

Honduras experienced an important reduction in the proportion of its population with unsatisfied basic needs during the nineties. In 1990, only 33% of the population had all their basic needs satisfied (SBN); (50% of the urban population and 20% of the rural population). By 1997, the proportion with SBN had increased to 53%; (65% urban and 42% rural) (Table 15).

In parallel, the proportion of the population with more than two UBNs was reduced. In 1990, 22% of the national population had more than 2 UBNs; (13% urban and 29% rural). By 1997, only 8% of the population had more than two UBN (5% urban and 11% rural).

The rate of improvement slowed during 1994-1997 compared with the period 1990-93. The probable explanation for this is that in general it is easier to lower UBNs when the absolute level is high. Additionally, during 1990-93, the targeting of public programs (including FHIS 1) towards the poorest rural sectors was still relatively weak, and more resources were dedicated to the urban sector. Urban UBNs are easier to correct than rural ones, due to concentration economies in the provision of network and point services. During 1994-97, when more resources were sent to rural areas, the rhythm of improvement slowed.

## 2. Impact of FHIS in the reduction of

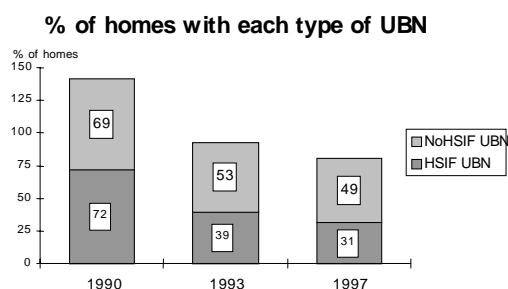
### UBNs

The aforementioned data evidence a significant reduction in poverty, as measured by UBN.<sup>34</sup> ¿How much of this improvement can be credited to the FHIS ?

As a first step, it is important to distinguish between the basic needs that are directly affected by FHIS programs and those which are not. Of the six needs mentioned above, FHIS 2

<sup>34</sup> UBN defines poverty in terms of the stocks of private capital and of social infrastructure. The trend of the poverty as measured by income is less positive. The proportion of the population defined as poor from the real income perspective, fluctuated around 70% throughout the decade. During 1990-95, the GNP per capita in Honduras increased in an annual average of 0.7%; for 1995-97, the rate increased to 1.7%. Total GNP increased at the rates 3.6% and 4.3%, respectively. (FUMANITAS, 1998).

intervened directly in three of them: water, sanitation and education.<sup>35</sup> Table 16 reports the trend of each type of Basic Need, and Table 17 groups the totals for the UBNs potentially affected by FHIS and the ones not affected by FHIS.



The improvement in the UBNs affected by FHIS is clearly superior to the improvement of the other UBNs. Between 1990 and 1997, the percentage of households without water or sanitation or access to education (UBNs affected by FHIS) decreased from 72% to 31%; while the percentage with deficient subsistence capacity, overcrowding or an unsatisfactory dwelling decreased less, from 69% to 49% (Table 17).<sup>36</sup> In both groups, the most pronounced improvement was registered

between 1990 and 1993 and the pattern of change is similar in the urban and rural sectors.

These data are consistent with the hypothesis that the FHIS had a positive impact in the reduction of UBN. However, during the nineties, many programs adopted a similar focus to that of FHIS and FHIS represented only 9.5% of the country's social sector public expenditure<sup>37</sup>. In order to determine the specific impact of FHIS in this regard, it is necessary to analyze FHIS's investments in different sorts of social infrastructure, in relation to the available data on the global expansion of each type of service. The next section presents evidence on this point.

## B. FHIS impact on the expansion of the social physical infrastructure

This section estimates FHIS's contribution to the increase in coverage of social infrastructure between 1994-1998. For each sector (education, health, water, sewerage and latrines), data for the overall change in coverage are compared with data for FHIS constructions during the same period, in order to estimate the relative contribution of the program.

### 1. Primary schools and classrooms

The construction and improvement of primary schools was FHIS 2's main activity, consuming over 40% of program resources. FHIS completely replaced the School Construction Division of the education ministry, which was closed in 1996.

Between 1995-1998, there was an increase of 11.4% in the number of primary schools and 15% in the number of primary classrooms in Honduras (Table 18). The greater increase in the number of classrooms reflects the effort to transform one-teacher schools into multi-teacher schools through programs oriented towards the improvement of the quality of basic education. The increase in classrooms reduced the national ratio of students per classroom from 45 in 1993 to 37.1 in 1998, and the student-teacher ratio fell from 39.9 to 33.5 in the same period. There condition of the installations also tended to improve, with the proportion of classrooms classified as in "bad shape" falling from 9% to 4% between 1993 and 1996.

<sup>35</sup> FHIS 1 aimed to increase the subsistence capacity, via employment creation; but FHIS 2 did not include this as a specific goal.

<sup>36</sup> Note that in Tables 2 and 3, the totals do not add 100% because one home can have various UBNS.

<sup>37</sup> World Bank – Report 17778-HO, Table 4. Data for 1995 and 1996. FHIS participation in social investment was probably more higher than 9%, but the official data on this point are rather confused.

**Table 18**  
**FHIS2's contribution to the capital stock for primary education, 1995-1998**

| a) Total classrooms             | 1995           | 1998 <sup>1</sup> | % inc. | Num. Made by FHIS 2 <sup>2</sup>  | % of owed to FHIS 2                     |
|---------------------------------|----------------|-------------------|--------|-----------------------------------|---|
| Num. of primary schools         | 7,873          | 8,743             | 11.4%  | 503                               | 58%                                     |
| Num. of classrooms              | 25,558         | 29,355            | 15%    | 2,326                             | 61%                                     |
| Num. of teachers                | 25,757         | 32,519            | 26%    | n.a.                              | n.a.                                    |
| Num. of students (Gross enroll) | 935,855 (1993) | 1,089,06          | 16%    | n.a.                              | n.a.                                    |
| Relation Student/ teacher       | 39.9 (1993)    | 33.5              | -16%   | n.a.                              | n.a.                                    |
| Relation Student/classroom      | 45.0 (1993)    | 37.1              | -18%   | n.a.                              | n.a.                                    |
| b) Condition of classrooms      |                |                   |        | Num. Impr. By FHIS 2 <sup>3</sup> | % of total impr. by FHIS 2 <sup>4</sup> |
| Good                            | 68%            | 62%               | -6%    | 3,182                             | 11%                                     |
| Regular                         | 24%            | 34%               | +10%   | n.a.                              | n.a.                                    |
| Bad                             | 9%             | 4%                | -5%    | n.a.                              | n.a.                                    |

**Sources:** Data from 1995 taken from SIGES; other data from SEP and our estimates from SIG data. See notes for the estimation procedures. The data of number of students and the teacher/student ratio for 1993 is taken from the SAR 14181-HO. Due to loss of data in the SEP during Hurricane Mitch, no information is available for 1995.

**Notes:** All data in this table should be used with reservation, due to the difficulties encountered in making the estimations. 1/The data for classroom condition is for 1996 (the latest available). 2/ The number of primary schools built by FHIS 2 is taken from SIG (it is the category of schools built or completed by FHIS) FHIS made a detailed analysis of its project files to estimate the total number of classrooms built. 3/ The number of classrooms brought into good condition by FHIS 2 is estimated as the total classrooms in schools built, finished, replaced or restored plus the number added in the enlargement of existent schools. This figure was provided by FHIS based on an analysis of project files. 4/ This relation gives the total of improved classrooms by FHIS 2, as % of the total primary classrooms existing in Honduras in 1998, according to the SEP and as reported in the superior part of the Table.

These improvements are due in large degree to FHIS 2's investments. The program built 503 new schools and 2,326 new classrooms and improved the condition of 1,828 existing schools. It is estimated that 58% of the new schools built between 1993-98 and 61% of the new classrooms are directly attributable to FHIS 2. Some 15% of all primary classrooms which existed in 1998 had benefited from a FHIS 2 investment. In lieu of this, the proportion of classrooms in good condition would have been 48% instead of 63%.<sup>38</sup>

## 2. Rural Health Centers (CESAR)

FHIS has also been an important source of resources for primary health. According to a recent World Bank analysis of health finance in Honduras, in 1995 the FHIS channeled L.55mn (US\$5.9 mn) for health programs, totally oriented towards the primary-ambulatory network of the Ministry of Public Health (MPH). This represented 15% of external funding for health, 5.5% of all resources received by the MPH and 2% of all resources for health from public or private sources in 1995 (World Bank, 1998 pp. 62-64).

<sup>38</sup> See Table for explanation of the methodology used to make these estimates. Many experts consider that FHIS' contribution to the increase in the number of classrooms in this period was greater than 61% of the total. Unfortunately, in 1992 FHIS stopped recording in the SIG the number of classrooms it built and repaired, It is recommended that this indicator should be registered in the future.

Analysis of the SIG reveals that 6% of FHIS 2's resources were assigned to the construction of 127 new CESARs and remodeling 90 existing CESARs<sup>39</sup>. FHIS 2 also constructed 40 new CESAMOs (urban health centers with a doctor), improved 108 CESAMOs, constructed one mother and child clinic and improved eight of them. During 1994-98, FHIS 2 built 72% of all new CESARs and 56% of new CESAMOS (Table 19), thereby having an important impact in the expansion of health sector infrastructure.

### 3. Drinking water

In the case of water, Table 16 (in Section IV) showed a reduction in the proportion of the population without access to water from 27% in 1990 to 15% in 1993 and 8% in 1997.<sup>40</sup>

Taking into account the change in coverage and data for population growth it is estimated that between 1993 and 1997, new water accesses were established for 81,000 rural households and 109,000 urban households, a grand total of 191,000 (Table 20). To estimate FHIS 2's contribution to this improvement, 24 water projects were analyzed, including both new systems and extensions of existing systems, in order to establish how many new connections had resulted.<sup>41</sup> The resulting coefficient for FHIS investment per new connection was applied to FHIS 2's total water investment, to estimate the program's global impact. On this basis, it is estimated that FHIS 2 created 1,417 new urban water connections and 1,398 rural ones.<sup>42</sup> This is a tiny proportion of the increase in coverage during the same period: just 1.7% of all new rural connections, 1.3% of all urban connections,

**Table 19**  
**FHIS support to the health sector, 1990-98**

|         | CESAR                      | CESAMO |
|---------|----------------------------|--------|
|         | Total for each type of UPS |        |
| 1990    | 516                        | 177    |
| 1994    | 637                        | 197    |
| 1998    | 812                        | 236    |
|         | Increase %                 |        |
| 1990-94 | 23%                        | 11%    |
| 1994-98 | 27%                        | 20%    |
|         | % of increase due to FHIS  |        |
| 1990-94 | n.d.                       | 90%    |
| 1994-98 | 72%                        | 56%    |

Sources: MSP y SIG

**Table 20**  
**FHIS contribution to increased water coverage, 1994-97**

| <i>Thousands and percentages</i>         | Rural | Urban | Total |
|--|-------|-------|-------|
| New connections or accesses <sup>1</sup> | 81    | 109   | 191   |
| New connections made by FHIS 2           | 1.4   | 1.4   | 2.8   |
| FHIS 2 connections as % of increment     | 1.7%  | 1.3%  | 1.5%  |

Sources: Change in global coverage is our estimate, based on EHPM data and population projections of SECPLAN. The estimate of FHIS 2 connections is based on observations of the project survey, to establish connections per lempira and SIG information on the total FHIS investment in urban and rural water.

Note: 1/ Urban access = household connection; rural access = water through pipes or wells

<sup>39</sup> The FHIS's SIG indicates that FHIS 2 restored 96 CESARs and constructed or extended 163 CESARs, giving a total of 259. Data in the text reflect a reclassification made by ESA Consultores, to iron out some project duplications and the reclassification of some cases as CESAMOS category, leaving a total of 217 CESARs.

<sup>40</sup> The definition used for water access is different for urban and rural homes. See page 33.

<sup>41</sup> The data on the number of beneficiaries on the SIG is not reliable because it is normally based on a projected beneficiary population over the next 20 years, who are not necessarily receiving the service yet. Also, it does not distinguish between new and pre-existing connections.

<sup>42</sup> SIG data were used to calculate the investment cost per new FHIS connection, which averaged L.7,063 (\$550 approx.) in the urban sector and L.7,378 (\$570 aprox.) in the rural sector. According to SIG data, FHIS 2 spent a total of L10.0 millions in urban water and L.10.3 millions in rural water, implying a total of 1,417 new urban connections and 1,398 rural. The detailed calculations are presented in Annex 10. It is important to bear in mind that this ratio is not an *indicator of unit costs*, but is simply a multiple derived to allow the estimation of the total number of new connections made by FHIS from global data for its water investment. Most of this expenditure was not directed towards new connections but was used to improve the quality of the system and improve the service. On page 47 (check) there is an estimate of the unit cost of new connections in FHIS projects.

and 1.5% of the national total. We can conclude that FHIS 2 contributed little to the improvement of water coverage.

In the urban sector, FHIS 2's water projects were oriented to system rehabilitation and improvements in service quality through the construction of new production systems, more than to increasing the distribution network coverage. It is estimated that FHIS 2 upgraded 46,000 water connections nationwide. This represents 5% of all the connections in the country in 1997<sup>43</sup>.

#### 4. Sanitation

The UBN data show a big improvement in sanitation coverage in 1990-93. During 1994-97, coverage did not improve, but sufficient WCs were built to maintain coverage stable in the face of population growth, both in urban and rural areas (see Table 16 above).

FHIS intervenes in sanitation through sewerage projects (mainly in the urban sector), simple pit latrines (rural) and hydraulic latrines (urban and rural)<sup>44</sup>. To determine the program's contribution to the sanitation sector during 1994-97, a similar methodology was followed to that used for water coverage. EPHPM data were used to estimate the number of households that acquired a sanitation service (latrine or WC) between 1994-97. The estimate for sewerage connections and latrines constructed by FHIS 2 was based on data in the project survey and cost data in the SIG. The results are shown on Table 21 and the details of the calculation are in Annex 11.

**Table 21**  
**FHIS 2's contribution to increased sanitation access, 1994-97**

| <i>Thousands and percentages</i>          | Rural | Urban | Total |
|---|-------|-------|-------|
| Absolute increase in sanitary services /1 | 34    | 98    | 132   |
| New connections made by FHIS 2:           |       |       |       |
| <i>Sewerage</i>                           | 0.4   | 1.4   | 1.9   |
| <i>Latrines – hydraulic</i>               | 0.2   | 1.0   | 1.3   |
| <i>Latrines - simple pit</i>              | 7.3   | 12.4  | 19.8  |
| FHIS 2 total new connections              | 8.0   | 15.0  | 23.0  |
| FHIS 2 relative contribution              | 23%   | 15%   | 17%   |

**Sources:** Change in global coverage is our estimate based on data from EHPM, 1993 and 1997. The estimate of connections made by FHIS 2 is based on observations of the project survey to establish connections per lempira of investment and SIG data on the total FHIS investment in urban and rural sanitation.

**Notes:** 1/ The absolute number of households that acquired a sanitary service during the period. Includes latrines and WCs.

Even though at national level there was little advance during 1994-97 in the proportion of households with access to sanitation, in absolute terms, 34,000 sanitary services were constructed in rural areas and 98,000 in urban areas, for a total of 132,000. Within this total, FHIS 2 played a relatively important role. In rural areas, FHIS latrines represented 23% of the total increase. In urban areas, FHIS 2 investments represented 15% of the total increase. Overall, FHIS contributed 17% of new sanitary services established in this period (Table 21).

<sup>43</sup> FHIS 2 also dedicated some resources to the construction of public stand pipes, which are not included in this analysis..

<sup>44</sup> To analyze the FHIS 2 contribution to the sanitation situation of the country, all the sanitation services constructed by the program between 1994-97 have been taken into account. Please note that the definition of UBN actually used for urban homes does not consider acceptable a simple pit latrine, therefore, FHIS only registers an impact in the urban UBN on this subject when it constructs hydraulic latrines or sewerage systems. However, the construction of a simple latrine in the urban sector improves the sanitary condition of the home, compared with the alternative of not having any type of service.

## C. The quality of the design and construction and state of repair of FHIS 2 projects

### 1. Education

The project survey reveals a similar pattern of quality for FHIS education constructions, compared with non-FHIS works (Table 22). However, water closets proved to be a problem area. Some 28% of the w.c.s. and electric installations built by FHIS were not working, compared with 4% of those built by other agencies. Normally, the problem was that the contractor had not been given responsibility for making the connection to the water supply and leave the facility operating. In the future, it is recommended that FHIS adopt a “turnkey” approach for w.c.s, to ensure that a working facility is delivered to the client. This has been adopted for FHIS 3.

**Table 22**  
**Physical evaluation of schools and CESARs made by FHIS and other agencies**

|                                 |              | Schools             |                    |                   |          | Health centers |                 |                   |         |
|---------------------------------|--------------|---------------------|--------------------|-------------------|----------|----------------|-----------------|-------------------|---------|
|                                 |              | Original Constr     | Furniture Donation | Decorati Conditio | Cleanlin | Origina Constr | Furnit. Donatio | Decorati Conditio | Cleanli |
| <b>Supported by FHIS /1</b>     |              | % of each condition |                    |                   |          |                |                 |                   |         |
| Design                          | Good /2      | 44                  | 30                 | 30                | 53       | 67             | 8               | 0                 | 36      |
|                                 | Regular      | 39                  | 45                 | 42                | 19       | 30             | 67              | 20                | 44      |
|                                 | Bad          | 17                  | 25                 | 27                | 29       | 3              | 25              | 80                | 20      |
| Sanitary Instal/<br>Electric    | Operates     | 72                  | n.a.               | n.a.              | n.a.     | 66             | n.a.            | n.a.              | n.a.    |
|                                 | No operation | 28                  | n.a.               | n.a.              | n.a.     | 34             | n.a.            | n.a.              | n.a.    |
| <b>Not supported by FHIS /1</b> |              |                     |                    |                   |          |                |                 |                   |         |
| Design                          | Good /2      | 38                  | 28                 | 24                | 40       | 4              | 0               | 0                 | 46      |
|                                 | Regular      | 49                  | 43                 | 45                | 36       | 58             | 73              | 15                | 29      |
|                                 | Bad          | 13                  | 28                 | 31                | 24       | 39             | 28              | 85                | 25      |
|                                 |              | 100                 | 100                | 100               | 100      | 100            | 100             | 100               | 100     |
| Sanitary Instal/<br>Electric    | Operates     | 96                  | n.a.               | n.a.              | n.a.     | 62             | n.a.            | n.a.              | n.a.    |
|                                 | No operation | 4                   | n.a.               | n.a.              | n.a.     | 38             | n.a.            | n.a.              | n.a.    |

**Source:** Project Survey. **Notes:** 1/ On each school and CESAR studied, it was determined which of its designs and installations had received direct support from the FHIS project and which had not. The data shown on this Table reports the findings for the total designs and installations supported by FHIS *versus* the total that did not receive such support. This methodology allows to focus on what the FHIS actually made, avoiding the danger of crediting achievements or failures to the program, not related with its direct activities. The engineer investigator assigned to the project survey made the evaluation between “good “,” regular and bad. The same engineer evaluated all the projects on the same manner, to ensure uniformity of criteria.

FHIS 2 used a standard design for schools, approved by the education ministry (SEP). The design has been criticized because it included a kitchen-storehouse which has no great utility for rural centers; while the classroom design was not well suited to multi-grade education (normal in rural mixed schools). The design also specified a perimeter wall, thought unnecessary for rural schools, and a standard length was contracted. When the real perimeter turned out to be greater, it was left unfinished, nullifying any security value. Since the design was approved by the SEP, FHIS, as constructing agency is not necessarily at fault.

However, it seems clear that these inflexibilities were product of a contracting procedure on which the specific conditions of the locality were left out of account and where the SEP and beneficiary community – the eventual owners of the works – had insufficient influence. Another factor which contributed to some of these problems were arbitrary adjustments made of the work order to keep the contract value within the total allowed for direct hiring. If the community had been involved in negotiating the contract it might have been possible to find more rational ways of reducing costs. For instance, where there wasn't enough money to pay for a whole wall, it would have been better to have no wall at all.

In FHIS 3, both the warehouse-kitchens and the perimeter walls have been eliminated from rural school designs, evidencing FHIS' capacity to respond to criticism and improve its performance.

### 2. Health Centers

The project survey reveals that the CESARs made by FHIS 2 are generally superior in quality to facilities not constructed by the program (Table 22). Regarding the original construction, 67% of the rooms made by FHIS were qualified as "good" and only 3% "bad". For the non-FHIS rooms, the respective proportions were 4% "good" and 39% "bad". Regarding the provision of furniture, decoration and cleanliness, no important differences were observed between the two groups.

Once again, a high proportion of w.c.s and electric installations were found not to be working (34%). Although a similar proportion (38%) was observed in the non-FHIS group, this reinforces the conclusion already reported for the primary schools, that FHIS 2 had a systematic problem with the construction of inoperative w.c.s. This finding has been incorporated into FHIS 3 through the adoption of turnkey contracts for w.c.s, under which the contractor must deliver a fully operational facility.

### 3. Water and sanitation solutions

Table 23 reports the findings of the project survey regarding the original quality and present condition of the FHIS' water and sanitation works, compared with those of other programs. The provision and maintenance of electromechanical equipment is also assessed. For water projects, the assessment of the FHIS works is generally positive (70% good and only 6% bad); however, the non-FHIS projects report better results. In maintenance of works and donation and maintenance of equipment, FHIS has better results than the rest of the projects. In sewerage, both FHIS projects and those of other agencies have a very positive evaluation. The latrines built by FHIS compare well with privately-built ones and those of other agencies, both for their original construction and their present state of maintenance and cleanliness.

| Chart 23   |                  |             |                |             |                  |             |                  |             |               |             |
|--|------------------|-------------|----------------|-------------|------------------|-------------|------------------|-------------|---------------|-------------|
| Evaluation of water and sewerage projects built by FHIS and other agencies |                  |             |                |             |                  |             |                  |             |               |             |
|  | Drinking water   |             |                |             | Sewerage         |             | Latrines         |             |               |             |
|  | Original constr. | Maintenance | Equipm. Supply | Maintenance | Original constr. | Maintenance | Original constr. | Maintenance | Door and seat | Cleanliness |
| <b>FHIS</b>  | % of each state  |             |                |             |                  |             |                  |             |               |             |
| Good   | 70               | 69          | 61             | 53          | 96               | 91          | 95               | 80          | 56            | 54          |
| Regular  | 23               | 28          | 35             | 46          | 4                | 5           | 5                | 17          | 26            | 33          |
| Bad  | 6                | 3           | 3              | 2           | 0                | 5           | 0                | 3           | 18            | 12          |
| <b>NO FHIS</b>   |                  |             |                |             |                  |             |                  |             |               |             |
| Good   | 91               | 50          | 60             | 46          | 100              | 0           | 25               | 45          | 35            | 23          |
| Regular  | 9                | 50          | 40             | 51          | 0                | 100         | 44               | 25          | 6             | 51          |
| Bad  | 0                | 0           | 0              | 3           | 0                | 0           | 31               | 30          | 59            | 27          |
| * The sewerage projects evaluated did not include equipment supply         |                  |             |                |             |                  |             |                  |             |               |             |
| Source: Project Survey. For definitions, see Chart 22.                     |                  |             |                |             |                  |             |                  |             |               |             |

**Table 24**  
Quality of works according to the household survey

|                         | Health               | Educa-tion | Water | Sewerage | Latrines |
|-------------------------|----------------------|------------|-------|----------|----------|
|                         | % of each assessment |            |       |          |          |
| <b>FHIS (Completed)</b> |                      |            |       |          |          |
| Good                    | 88                   | 73         | 46    | 61       | 78       |
| Regular                 | 9                    | 19         | 11    | 15       | 15       |
| Bad                     | 0                    | 6          | 23    | 0        | 3        |
| Na                      | 3                    | 2          | 20    | 24       | 4        |

The data on project quality from the household survey (reported in Table 24) broadly correspond with the engineers' evaluations reported on Tables 22 and 23. The beneficiaries of the health projects assessed the FHIS solutions as "good" in 88% of the cases; for schools, the figure was 73%, for latrines, 78%, sewerage, 61% and for water, 46%

(Table 24). In the beneficiaries' opinion, water projects are the ones with most problems: 23% assessed them as "bad".

For both the school and CESAR projects, it was possible to compare the quality on the FHIS works in "completed" project with the quality of the installation used by the pipeline group where the FHIS investment had not yet materialized. The condition of these installations was "good" on in only 38% of the health centers and 44% for education (data not tabulated). This confirms that FHIS investment was likely to lead to a considerable improvement in the conditions of the facility in most cases.

The FHIS' Management Information System (MIS) is another source of information on project quality. The system reported that at the end of 1997, 67% of finished projects matched or surpassed the expected norm. This confirms that the majority of projects are satisfactory. However, it also re-confirms that there is a significant minority of projects with quality problems.<sup>45</sup>

#### **4. Faults in the works: evidence from the qualitative study**

The focus group discussions were asked to identify the main of problems with the FHIS project being evaluated; many participants seized the opportunity to mention problems with other FHIS projects in their community or that they had observed in other places. Many different faults were mentioned, but they can be summarized in two groups: design faults and use of poor quality materials. The design faults included the following:

- Water systems: problems with sand filters; high pressure leading to frequent breakage of pipes; and storage tanks with leaks and with weak support structures
- Sewerage systems: insufficient consideration of topography, leading to problems with the flow of effluents from some areas in the absence of punping; and poor network planning leading to high private connection costs for some houses.
- Latrines: unsuitable soils for digging a latrine or for the adequate filtration of liquids.
- Schools and health centers: septic tanks without proper drainage fields, and the lack of water supplies.

Examples of bad quality materials included: wood which had not been dried and cured or which was inappropriate for the local conditions; and the use of cheap, poor quality accessories such as latchkeys, hinges, faucets, and washbasins. These problems are detailed in *part V of Annex 15*.

#### **5. The supervision problem**

The foregoing data suggest a positive overall picture regarding the quality of FHIS investments, compared with other programs. However, various projects were badly constructed and minor quality problems persist across the board. Many ascribed these problems to weaknesses in the supervision system. A high percentage of beneficiaries interviewed in the household survey and focus groups believed that the supervision was not efficient, and the opinions of those responsible actually for the project operation confirm this problem (Table 25).

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<sup>45</sup> FHIS, Performance Indicators, Task Program 1997, p.6.

**Table 25**  
**Opinions on supervision of the project survey**

|                           | "Was there supervision....?" |           |       |          |          |
|---------------------------|------------------------------|-----------|-------|----------|----------|
|                           | Health                       | Education | Water | Sewerage | Latrines |
|                           | <i>Percentages</i>           |           |       |          |          |
| 1. Yes, and efficient     | 23                           | 58        | 54    | 88       | 67       |
| 2. Yes, but not efficient | 54                           | 25        | 31    | 13       | 33       |
| 3. No Supervision         | 23                           | 0         | 15    | 0        | 0        |
| 4. Does not know          | 0                            | 17        | 0     | 0        | 0        |

**Source:** Survey of completed projects. **Note:** The opinions here reported were expressed by the main interviewee – that is, the person actually responsible for the administration of the facility being studied.

Most people agreed that there had been supervision, but a high percentage believed that the supervision was not efficient. This problem is especially marked in health, where 54% expressed this opinion; in education it was 25%, in water, 31% and in latrines, 33%. In health projects 23% believed there had been no supervision of any sort; and

for water projects 15% thought this. In contrast, in sewerage projects the supervision was relatively good. In most of these cases SANAA or DIMA (which would become the eventual owners of the works) were involved in the supervision, by agreement with the FHIS.

The MIS shows that at the end of 1997, FHIS had 19 supervisors working, against a target figure of 20 and that the average number of projects per supervisor was eight, compared with the target of nine.<sup>46</sup> This suggests that at a global level, FHIS assigned enough resources for supervision. However, the task load was unevenly distributed: some supervisors were in charge of as many as 27 projects, compared with others with only one. This suggests that in some parts of the country there may be insufficient resources available for supervision. Part of the explanation of the apparent overload of some of the supervisors, is the presence in the system of completed projects which have not formally been delivered to their eventual owners. The system still requires the assignment of a supervisor, but the task is nominal. The indicator for the supervisor / project ratio generated by the MIS should be adjusted to permit the exclusion of such projects from the calculation.

<sup>46</sup> FHIS, Performance Indicators, Task Program 1977, Dec. 31 1997, p. 4

**Supervision problems:  
two points of view**

**Virgilio Padilla, Mayor of El Progreso and Engineer**

“Before becoming mayor, I was a contractor to the FHIS. Before judging the works, you have to look at the quality standards that we have in the market. I am civil engineer, so maybe I have a broader ample vision. The pinewood you can get today is not the same as it was 30 years ago, that came from a real old tree. But if you buy cured wood, then you do meet the quality requirements”

*Interviewer:* The impression is that sometimes the contractors use inferior materials; for example, places third class hinges, or does not use enough concrete ...

*Mayor:* IU find that hard to believe, because there is constant supervision by the community, through the Patronato and the municipality.”

**Marlon Díaz, municipality of San Pedro Sula**

I am Chief of the Construction and Maintenance Department of the Direction of Engineering and Infrastructure of the Municipality. During the past administration I was the FHIS project coordinator of the municipality.\

I think that, in the end, the contractor is responsible for the quality of the solution. There is not only one quality of pinewood available. Some executors are tempted to use the cheapest one. But cured wood also presents problems. The pine must be well cured, under pressure, so it gets to the heart of the wood to avoid the introduction of parasites.

*Interviewer:* ¿Is it normal that a concrete tank for water storage should fissure in a short time?

*Eng. Díaz:* If that happens, definitely the tank is badly constructed. If there is deterioration within one year, the supervisor is responsible – his job has not been done effectively.

**6. The principal - agent relation**

The supervision problem can be viewed as part of a more general problem in the institutionality of the FHIS: the lack of an adequate specification of the principal – agent relationship.

FHIS is an *agent* which contracts works from a private firm, on behalf of some party. The works are handed over to FHIS and then passed on to the final owner, or *principal*.

The department of the Education Ministry charged with the custody of real estate complained that, although it would be the future owner of the schools, it was involved neither in the supervision nor in the reception of the works, and said this resulted in poor quality in some cases.

In other cases (eg water and sanitation works) where the community or local government would be the eventual owner, these often were not effectively involved in the execution of the

works.

FHIS has advanced a long way in developing the community’s role as auditor of the construction process and FHIS 3 has taken big steps to strengthen this process. However, the local community will not, in all cases, be the formal owner of the works. In the case of schools and health centers, the owners will be the respective ministries; while many water and sewerage systems will be owned by a municipality. It is recommended that there should be formal participation of the future owner in the supervision and reception of the works. This would be consistent with the principle that FHIS is the agent of a client or principal and that the latter should be involved in the regulation of its activities.

In this context, the FHIS-ministry and FHIS- municipality relationships should be strengthened as appropriate, going beyond the type of agreements which were made under FHIS 2, which were rather general in scope. They could be substituted with contracts from the “principal” to the FHIS for the execution of works, coupled with the creation within the “principal” of the necessary capacity to supervise the implementation of the contract. Similarly, when the eventual “owner” of the works will be a community organization or the municipality (in the case of water and sanitation), these should have a right to reject the works when they do not meet the specifications and should have a role in the supervision process.

The issue of the principal-agent relationship for the management of FHIS is intimately related to the urgent need to decentralize the social ministries of Honduras. During FHIS 2, these ministries remained highly centralized. At present they are undergoing a process of modernization, which includes important elements of decentralization. This should allow the

definition of “principals” (or clients) for the FHIS at a local level, in the form of the ministries’ decentralized agencies, which should, in turn, maintain close contact with community representatives and (where relevant) the local government.

## **D. Cost-effectiveness of the FHIS**

The previous sections showed that FHIS 2 did well on targeting its resources towards the poorest households and had an important impact on the improved coverage of social infrastructure in Honduras during 1994-97. It also established that the selected projects in most cases corresponded with the local community’s priorities and that it achieved community participation, producing a satisfactory level of project ownership on the part of the beneficiaries. However, they also concluded that there are problems in quality control and that it is necessary to clarify the FHI’ role as *agent* for the construction of infrastructure, on behalf of the *principals*, who will receive and operate the works (especially when these are line ministries).

The present section presents evidence on the FHIS 2’s cost-effectiveness, in an effort to establish to what extent these results were achieved at a reasonable cost, compared with alternative mechanisms for constructing social infrastructure.

### **1. Methodological problems**

#### a) The difficulty of comparing costs between FHIS and other programs

FHIS operates through private contracting. This way of working gives the program a high execution capacity and avoids the Government having to management a direct labor force or stocks of materials which might easily be wasted. This approach is congruent with the modern vision of the state as regulator and financing source for social infrastructure programs, instead of being direct executor of projects. However, all this also implies some important differences in costs, compared with traditional programs:

- *There are greater expenses on labor, compared with models that promote labor donations by the community.* The private contractors normally insist on having a hired labor force, to be able to control the advance of the works. In any case, it is an explicit FHIS policy to pay for labor in order to generate employment and income.
- *There are no savings from the bulk purchase of inputs.* Some traditional construction programs managed supply warehouses, and inputs were acquired through public bidding with important savings in the unit costs. However, on the other hand, many of these resources would be lost through poor warehouse management so it is not clear that this results in real savings. In the FHIS model, the contractors buy the inputs in the market and FHIS controls the process through a cost system using local information on the market costs.
- *The use of local inputs is more difficult.* Many social infrastructure programs promoted by NGOs emphasize the use of local materials (such as adobe) to reduce expenses on construction materials. But the nature FHIS’s contracting mechanism (and also, sometimes, the technical design specifications given by ministries) inclines it towards the use of standardized industrial inputs.
- *It implies paying profit and indirect cost margins.* Traditional state “in house” state programs have no allowance for profit margins, and although indirect costs exist, they are not recorded.

These differences make it difficult to reach a valid comparison between the financial costs of FHIS and other programs, because the comparison is not between similar variables. In this context, it is important to remember that traditional project financing tends to not record many of real costs of the society as financial costs of the project. In this sense, the FHIS mechanism is more transparent and satisfactory, because all costs are identified.

b) The lack of information on outputs

A second problem for the evaluation of the FHIS' cost-effectiveness is the lack of reliable information on the unit costs of the outputs of FHIS itself and of other programs with similar outputs. In the case of FHIS, although the cost system has detailed information on the input costs and the contract value, the MIS contains no information on outputs in unitary terms (for example, the number of classrooms constructed). This makes it difficult to reach conclusions on the unit cost of the product, which is necessary to analyze the cost-effectiveness.

## **2. Findings of the evaluation on cost-effectiveness**

In spite of the difficulties mentioned in the previous paragraphs, this section presents the available findings on FHIS' cost performance. In the first place, we ask whether FHIS gets negotiated as well as it could as a contractor of private firms. That is: is FHIS an efficient contracting agency? In the second place, we present evidence on unit costs for some types of FHIS projects, compared with other similar projects. Finally, we report the subjective impressions of the interviewees on the "cost-effectiveness" of the FHIS.

a) The efficiency of the FHIS as a contracting agency

The majority of FHIS 2 projects (around 70%) were undertaken through the direct hiring of private contractors. The reason for this was the relative agility of execution, compared with the alternatives of private or public competitive bidding. The average time between project approval and contract letting is 14 days for direct hiring, compared with 112 for private competitive bidding and 78 days for public competitive bidding. The direct hiring option also results in savings in management costs for the letting process.

To determine the price of contracts under direct hiring, FHIS uses a cost system that combines standard quantities for the different inputs with their respective unit costs. The price data is gathered quarterly by FHIS in all municipal capitals. The allowed margins of 10% for general expenses and 6% for profits are very low compared with construction industry norms. For price adjustments due to inflation, polynomial formulas are used, based on indicators provided by the Honduran Chamber of Construction, CHICO, under agreement with FHIS.

FHIS produces data on contract costs that result from the different mechanisms it uses (direct hire, private bidding and public bidding). This allows us to form an impression of the cost of not having a competitive bidding process<sup>47</sup>. Analysis of the MIS shows that, up to the end of 1997, the hiring cost on private competitive bidding was, in average, only 5% below the amounts that would have been assigned by cost system for direct hiring. However, in the case of public competitive bidding, the difference was 20.5%. This suggests that there are important elements of over-estimation of costs in water and sewerage projects. School and health center projects are almost without exception hired directly and for that reason, this comparison cannot be made for those cases.

A possible cause for the low price of publicly let contracts is that the offerors submit low bids to win the project, hoping to negotiate a subsequent price adjustment. This type of behavior would be understandable, since the financial agencies (including the World Bank) have insisted that the FHIS should always choose the lowest evaluated bid which meets the technical requirements of the Terms of Reference.<sup>48</sup> Analysis of MIS data shows that of 243 projects let

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<sup>47</sup> However, it should be borne in mind that part of the higher cost of smaller contracts let by direct hiring may be related to the absence of scale economies. This element would prevail even under competitive bidding.

<sup>48</sup> Many public letting procedures exclude both bids which are too low compared with the average or compared with the indicative budget, as well as those that are too high. The reason for excluding the low bidder is that he will not be able to complete the contract adequately without losing money and therefore there is a risk that he will abandon the job.

under public bidding in FHIS 2, 181 later negotiated a price adjustment. These increases (which are separate from the automatic inflation adjustments) totaled 7% of the value of these 243 projects, so that the final cost of the projects let through public bidding was 13.5% below that stipulated by the cost system (the 20.5% initial difference mentioned above, less the average adjustment of 7%).

According to the manager of the FHIS' Cost Unit, this difference arose because the cost system used a list price for PVC pipes which significantly above the market price during 1997, because of a price war. Since then, the market price has been incorporated into the system. He also argued that the offerors' margins in public lettings were very low in 1997 due to the recession in the construction industry. (*Interview with Oscar Callejas, November 1998*).

FHIS 3 has established the goal of lowering the proportion of contracts let through direct hiring to 30%. However, it seems unlikely that this will be achieved and it is certain that direct hiring will continue being an important mechanism for FHIS. Therefore, it would be advisable to review the methodology used to determine unit prices in the cost system, to ensure that it reflects the real local market situation. Of special concern is the generalized use of retail prices in the cost system, when the majority of engineers have access to wholesale prices.

#### b) FHIS costs compared with other programs

FHIS does not systematically gather information that would allow us to compare its costs with those of other programs. However, the findings of the present study include the following points:

- Data from the project survey for the construction cost of health posts was analyzed, revealing an average cost per square meter of L.1,044. As a point of comparison the cost that would have resulted from applying the unit costs recommended by the Chamber of Construction was calculated, resulting in an estimated cost of L.1,053 per square meter (without including any indirect cost margin). The detailed calculations are in Annex 17. We may conclude that the FHIS 2's unit costs in building health posts were very reasonable. Also, the standard deviation in the 10 cases analyzed was only 17% of the average, which is an indicator of a very satisfactory standardization of the unit costs through the FHIS cost system.
- A similar analysis was made for the cost of the square meter in the construction of schools, revealing an average of L.2,609 in the 19 studied projects, with a standard deviation of 20.5%. Again, this is very reasonable compared with the average calculated from the unit costs recommended by the Chamber of Construction (L.2,184).
- The Ministry of Public Health (MSP) also finances the construction of some health posts with funds from the World Bank's Nutrition and Health Project (N&S Project). The costs of these projects are another useful point of comparison with the FHIS' costs. Analysis of unit costs of inputs used in two projects executed by the N&S Project and four projects executed by FHIS shows that in 9 cases, the average cost authorized by FHIS was below the N&S average; in 2 cases the FHIS paid more and in one case, the costs were almost equal. We can conclude that FHIS tends to acquire its construction inputs at very economical prices, compared with the direct construction by the N&S project.<sup>49</sup>
- It is generally agreed that the defunct division of School Construction of the SEP had lower budgetary costs for building school installations, compared with FHIS, although no precise figures are available. However, the difference is due in part to the disguised subsidies for

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<sup>49</sup> The engineer responsible for the N&S project thinks that the quality of the FHIS works is inferior, compared with those of his project. He attributed this to the lack of supervision and the specification of inferior inputs. (*Interview with Astul Soto, N&S Project, MSP*). On the other hand, the findings of the present study on the quality of FHIS works, as reported in section V.C, show that the quality of the works is in general acceptable.

the administrative costs within the SEP; there was an important element of community contribution; adobe was used to lower costs; and execution times were much longer (interviews with Olga Mendez, ex Director of National Public Goods, SEP and now Assistant Director, FHIS; and with Delia Valladares, ex Chief of the USAID – SEP project for school construction).

- The cost of the FHIS water projects included in the sample of the present study was analyzed, only including the construction of totally new systems (8 cases, all gravity fed). The average investment per new connection was \$845, equal to \$169 per person. This is a relatively high unit cost. In 1996, the SANAA proposed to FHIS to construct 700 water systems, with a per-capita cost for gravity fed systems of only \$47. Together with the evidence (cited above) that the direct hiring of water and sanitation works could be resulting in high prices, this yet is another argument for using competitive letting in water projects.

#### c) Value for money: survey opinions

In the water and sanitation survey, the person in charge of operating the works was asked if the investment represented good value for money. (In the other types of projects, the interviewee normally did not know how much it cost and therefore could not give opinion). In the case of sewerage, 100% said it was a good investment; but in the case of water, 58% said it was not a good investment, due either to poor implementation (43%) or to operational problems (43%)<sup>50</sup>. However, most interviewees had difficulty separating the notion of value for money from that of quality and normally did not have a clear notion of what would be a reasonable cost for doing a good job.

### 3. Conclusions

The main conclusions and recommendations of this section are as follows:

- Analysis of the prices arising from competitive letting, compared with the prices generated from the cost system, suggests that the latter could be assigning higher prices for water and sanitation projects than would arise under competitive letting. However, the difference is not great (around 13%) and could possibly be corrected without resorting to competitive letting (for example, by using wholesale prices rather than retail prices when the contractor is an engineer).
- Analysis of the costs per m<sup>2</sup> of CESAR and school construction suggests that FHIS costs are very reasonable compared with industry norms.
- Analysis of the unit costs of standard inputs authorized by FHIS, compared with the ones paid under N&S Project (World Bank – MSP), reveals that FHIS is very economical.
- Analysis of the cost per connection of new water projects covered in the project survey, reveals a cost per connection three times above what is normally expected in other programs to expand the coverage of potable water in rural and urban-marginal communities. Due to the relative technical complexity of this sort of project and the divergence in local conditions regarding sources, topography and population density, water and sewerage projects are much more difficult to standardize than those to build schools, health centers and latrines. It is recommended that FHIS study alternatives to change the scheme used for design and contracting of water and sewerage projects in order to increase community participation.

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<sup>50</sup> On Annex 12 the details of questions and answers of the project survey are presented.

### E. The output of services from FHIS projects

FHIS is a program for the production of social infrastructure. This investment is not an end in itself; its purpose is to provide health, education, and water and sanitation services. Therefore, the evaluation gathered data on service production from the infrastructure and the sustainability of the same, in social terms (community participation), technical terms (the adequacy of operation and maintenance activities) and financial terms (the sufficiency of the available resources from either cost recovery or budgetary provision).

Obviously, any problems found in these areas are not necessarily attributable to FHIS as the constructing agency. Rather, they would usually correspond to the entity responsible for the service's subsequent operation (SEP, MSP, municipality, Water Boards, etc). Nevertheless, the rationality of the FHIS program as an instrument for extending the coverage of basic services would clearly be in question if its investments were not being used to the anticipated ends. In this case, the expected development impacts would be very few.

This section presents the evaluation's findings on service production from FHIS investments. It is based mainly on the findings of the Project Survey for finished projects (detailed in Annex 12). However, when possible, data from larger samples was used (for example, from the MSP records).<sup>51</sup>

#### 1. A global vision of the operation of projects executed by FHIS 2

The simplest question that can be asked about the infrastructure built by FHIS is: "Is it being used, or not?"

In total, 46 completed FHIS projects were visited for this evaluation: 12 health posts, 12 primary schools, 14 water and 8

sewerage projects.<sup>52</sup> It was found that 44 of these projects were operating (96% of the total) and only 2 were not functioning. One of these was due to delays in the assignment of personnel by the MSP for a rural health post. The other arose because a sewerage system had not yet been connected to the mains, because the community had not paid the connection right to SANAA. They were in the process of making the respective payment.

**Table 26**

**Global vision of the operation of the projects executed by FHIS 2**

|   | Health | Education | Water | Sewer. | Total |
|---|--------|-----------|-------|--------|-------|
| Total studied   | 12     | 12        | 14    | 8      | 46    |
| Number operating  | 11     | 12        | 14    | 7      | 44    |
| % operating   | 92     | 100       | 100   | 88     | 96    |
| <i>Why is it not operating?</i> (only for inoperative projects) |        |           |       |        |       |
| 1. Lack of personnel  | 1      |           |       |        |       |
| 2. Lack of connection to sewer main                             |        |           |       | 1      |       |

**Source:** Completed Project Survey

<sup>51</sup> It should be borne in mind that, in the methodological design for this study, the purpose of gathering project level data was to be able to control for project-related considerations in the analysis of household-level impacts. For this reason, the sample design sought to assure the reliability of the household-level inferences and not those at project level. In consequence, the project sample for the present study was relatively small. A sample with 48 completed projects and 48 uncompleted projects was designed, divided between five different types of projects: 12 each for health and education and water and six each for sewerage and latrines. This sample size is too small to permit much confidence about the inferential validity of the findings at the level of project sub-groups. However, the data reported here are of interest insofar as they provide an initial impression of some quantitative aspects of the operational sustainability of FHIS investments.

<sup>52</sup> Latrine projects are not included here are the latrine projects, since these operate at household level and not as a community facility. Note also that the executed sample for completed water and sewerage projects is, in each case, two more than the designed sample, because some projects originally selected as unfinished were found to have been completed and placed in operation between the moment of the sample selection and the execution of the field work. See Annex 4 for details.

We can conclude that in almost all cases, the FHIS projects had enough personnel to operate and provide some kind of service. However, the adequacy of staffing and resources was variable and in some cases service production was unsatisfactory. The following sections, provide details on service operation and production of the sampled projects.

## 2. Rural health posts

### a) Personnel disposition

As mentioned in the previous section, one case was found among the completed health posts where there was still no nurse assigned and the post remained closed. The rest of the facilities were operating. However, staffing was generally deficient, since on only one of the 11 posts<sup>53</sup> had the prescribed assignment of two medical professionals. Of the rest, six had a qualified nurse and three had one auxiliary nurses.

**Table 27**  
**Staffing in CESARs**

|                                   | Number of CESARs |
|-----------------------------------|------------------|
| One doctor plus a qualified nurse | 1                |
| One qualified nurse               | 6                |
| One auxiliary nurse               | 3                |
| No medical staff                  | 1                |
| Total                             | 11               |

**Source:** Survey of completed projects

### b) Productivity

In recent years, concerns have been expressed that FHIS might be promoting an over-expansion of the primary health network, establishing rural health posts in communities with populations that are too small for network rationality and which will therefore be under-utilized.<sup>54</sup> However, the results of the present evaluation do not support this hypothesis. They suggest that the productivity of the health posts funded by FHIS is generally acceptable. Among rural posts financed by FHIS, there were an average of 7.5 attentions per nurse/day.<sup>55</sup> This is similar to the figure of 6 per day reported for all rural health posts in Honduras reported in a recent World Bank study.<sup>56</sup>

<sup>53</sup> Of the 12 Health Centers visited in the "Completed" group, one of the CESARs turned out to be a CESAMO, due to a classification error in the MIS database. Because the operational considerations of a CESAMO are completely different from those of a CESAR, the CESAMO case was excluded from the analysis, which concentrates therefore, on the 11 CESAR cases.

<sup>54</sup> This subject is discussed in: "Honduras - como lograr salud para todos?", World Bank, 1988, February, chapter 4.

<sup>55</sup> The figure recorded is 12 attentions per day when the post was open, but on average there were 1.9 closed days per week – see Table 29 on page 50.

<sup>56</sup> Op. Cit. Table 4.1, p.32.

**Table 28**  
**Productivity of health posts supported by FHIS, 1997**

|        | Posts with FHIS 2 support            |          |       | All Posts<br>of the MSP |
|--------|--------------------------------------|----------|-------|-------------------------|
|        | Constructed                          | Restored | Total |                         |
|        | <i>Average attention / UPS / day</i> |          |       |                         |
| CESAMO | 64.2                                 | 52.5     | 54.1  | 34.4                    |
| CESAR  | 8.1                                  | 10.9     | 9.4   | 9.2                     |

**Source:** Our analysis of the MSP and MIS data bases

**Note:** Based on the total annual attentions, including vaccinations and a norm of 250 service days per year.

To generate more reliable data on the productivity of health posts supported by FHIS 2, an analysis was undertaken of all the CESARs and CESAMOs that received FHIS support, based on MIS and MSP data (Table 28).<sup>57</sup> The FHIS-supported CESAMOs have considerably higher productivity levels than the average for all the

CESAMOs of the system (54.1 attentions per day, versus 34.4), and the FHIS-restored CESARs have an above average productivity level (10.9 versus 9.2). However, the new CESARs built by FHIS have below-average productivity, of 8.1, confirming that there may be a problem of diminishing marginal productivity when the primary network expands.

c) The sustainability of the rural health posts supported by FHIS

Table 29 summarizes the operational condition of the rural health posts (CESARs) in the project survey. In general, the CESARs that received FHIS support have a similar operational sustainability to those still waiting to receive such support. 38% of the completed CESARs still did not have water service; and as a result, only 60% had working sanitation services. A similar situation exists in the "non-FHIS" group. In all cases there was some income from co-payments; however, this normally was insignificant (below L.500 per month in 78% of the cases for the "with project" group and 82% of the "without project" group). In total, 63% of CESARs in the "with project" group received technical support from an NGO or development agency, versus 45% in the "without project" group.

**Table 29**  
**Sustainability indicators in CESAR operations**

|  | FHIS | Non- FHIS |
|--|------|-----------|
| Number of cases  | 11   | 7         |
| % with piped drinking water                                | 62   | 64        |
| % with monthly incomes from co-payments >L.500             | 23   | 18        |
| % that receive technical support from an NGO or similar    | 63   | 45        |
| Number of volunteers (average)                             | 19   | 8         |
| % of volunteers that worked (last month)                   | 66   | 64        |
| Days closed (average, last week)                           | 1.9  | 1.5       |
| % of medicines of the basic list of 38 available (average) | 42   | 44        |
| % of equipment of the basic list of 17 available (average) | 53   | 59        |

**Source:** Project survey. "FHIS"= completed projects; "Non-FHIS"= incomplete projects.

Apart from the one post that had no medical staff, all the rest of the CESARs gave a complete range of normal services and provided attention in the morning and afternoon. However, both groups (with and without project) reveal an alarming incidence of closures, respectively, of 1.9 and 1.5 days in the previous week, for reasons such as: meetings with the municipality, vacations and health committee meetings.

The CESARs were found to have many volunteer workers and there were more volunteers in the "with project" group: an average of 19, versus 8 for the "without

project" group. In each case, the majority of volunteers were reported to be active.

A register of available medicines and equipment revealed that, on average, the FHIS (or "with project") CESARs have only 16 of the 38 medicines on the basic list (42%) and 9 of the 17

<sup>57</sup> To this end, it was necessary to compatibilize the two databases, since the FHIS does not include in the MIS the UPS code used by MSP. It was possible to identify within the MSP database approximately 60% of all the CESARs and CESAMOs supported by FHIS 2. The average number of attentions for this group is compared with the general average for all the UPS in the system. It is recommended that in the future, FHIS should include in its database the MSP and SEP codes for the UPS and schools that receive its support, to facilitate impact evaluation.

pieces of standard equipment they should have (53%). An almost identical situation occurs in the “No FHIS” facilities. According to the person in charge of the CESAR, the main problems of the group that had received FHIS support were the lack of equipment and materials (54% mentioned this), followed by water (38%) and faulty installations (25%). For the non-FHIS group, the main problem is lack of equipment and materials (30%).

In sum, there is little evidence that the FHIS’ intervention results in improved sustainability: the patterns observed in the group “with project” are very similar to those in the “without project” group.

d) Findings of the qualitative investigation

According to the qualitative study, in all cases, the operation of the health centers seemed to satisfy its users, who, as a general rule, come from the lower income groups. The most frequent complaint was the lack of basic medicines. The new health centers have attracted more users, especially pregnant women and children; apparently for two motives: because they have shortened the journey to reach the health center; and because they have involved community members as health volunteers, through training of midwives, first aid and others. The communities expressed pride in the installations, which normally contrasted in solidity and aesthetic virtue with the panorama of humble huts and improvised dwellings that characterizes most Honduran villages. When the FHIS project was an extension of a existing center (e.g., Concepción), the interviewees said the main advantage was the availability of more space, and a better organization of the facility.

**Testimonies: the impact of the CESARs supported by FHIS 2**

**San Francisco**  
 Interviewer: ¿Where did you go before (before having the CESAR) when you had a health problem?  
 Ana: To Langué, and it took all day.  
 Marina: We suffered the sun and rain.  
 Esperanza: I have three kids and wasted a whole day.  
 Sonia: Suffering hunger because we went with only the two lempiras to pay for the doctor's appointment.  
 (Women's focus group).  
 “We've just done a Public Health survey, which shows that... San Francisco is doing better than expected. In other parts (health) is failing (because) there is malnutrition. But San Francisco is doing well, as we can see.”. (Mayor of Langué, Valle).

**Potrerillos**  
 “We have one of the best health centers, because, in truth, it has everything, we even have a cholera clinic, already with all its equipment prepared and it has a clinic and a pharmacy”. (Women's focus group).  
 “We have very few medicines for a population of 1500 inhabitants... Generally, we get 108 bottles of Acetaminophen...Much too little for our population! There have been times when in two and a half months there is no medicine. So the attention is not as it should be. The Health Ministry has very few economic resources to distribute so many medicines in the different health centers. This is not the only health center with problems, there are many others”. (Nurse in charge of Health Center).

**3. Primary schools**

a) Personnel assignment

The quantitative study found a generally satisfactory level of personnel assignment in the schools supported by FHIS. (Table 30). The student / teacher ratio in the morning shift was 31, but a less satisfactory ratio was found in the afternoon (37). The ratio of students per classroom was 30 in the morning and 28 in the afternoon; however, in the afternoon, only 80% of

**Table 30**  
**Students per teacher and per classroom**

| Shift           | Students per Teacher | Students per Room | Teachers per room |
|-----------------|----------------------|-------------------|-------------------|
| Morning         | 31                   | 30                | 1.0               |
| Afternoon       | 37                   | 28                | 0.8               |
| General average | 34                   | 30                | 0.9               |

**Source:** Survey .of completed education projects.

the classrooms had a teacher.

b) Usage and sustainability indicators of schools “with project”

All the schools visited were found to be operating. As in the health sector, there is little difference in operating patterns between the group of primary schools “with” and “without” project. However, there is an important exception to this conclusion, in the availability of desks, where the “FHIS” group had a better coverage (Table 31). Regarding textbooks, both groups are almost identical.

In 92% of the schools that had received FHIS support there was a committee or board in charge of maintenance and 70% financed their expenses through donations, while 30% organize fund-raising activities. 70% said they did not receive any technical support; but 15% had municipal support, 8% from the government and 8% from an NGO. In total, 93% of the teaching staff was found to be working on the day of the visit to FHIS schools. However, the previous week, the morning shifts had lost, on average, 32% of the days and the afternoon shift, 17%. The main causes of closure were a parents strike in one of the schools (55%), followed by staff leave (20%) and holidays (14%). Of the six rural schools studied, one offered only first and second grade; others offered up to fourth and the rest are multigrade, but offer up to sixth grade. The five urban primary schools all offer six grades, except one.

Table 32 summarizes the operational problems of “FHIS” and “Non-FHIS” schools. The main problems in the “FHIS” group are: lack of materials (58% mentioned this); lack of personnel (33%); security (33%), faulty installations (25%), lack of physical space (25%) and lack of parental interest (25%). It is interesting that the level of dissatisfaction expressed by the “Non-FHIS” group is much lower, in general. This could reveal an objectively better situation; alternatively, it is possible that the FHIS’ intervention has increased expectations, resulting in greater dissatisfaction with an objectively similar situation.

**Table 31**  
**Availability of desks and textbooks**

|                       | FHIS | Non-FHIS |
|-----------------------|------|----------|
| Desks per student     | 1.12 | 0.88     |
| Textbooks per student |      |          |
| <i>Spanish</i>        | 0.73 | 0.78     |
| <i>Science</i>        | 0.74 | 0.79     |
| <i>Mathematics</i>    | 1.00 | 0.86     |
| <i>Social Studies</i> | 0.71 | 0.74     |
| Total                 | 3.18 | 3.17     |

**Source:** Project survey

**Table 32**  
**Operation problems in schools**

|                                | FHIS | Non-FHIS |
|--------------------------------|------|----------|
| % with piped water             | 75   | 83       |
| Main problems:                 |      |          |
| <i>Lack equip /materials.</i>  | 58   | 26       |
| <i>Lack of personnel</i>       | 33   | 7        |
| <i>Faulty Installations</i>    | 25   | 15       |
| <i>Security</i>                | 33   | 15       |
| <i>Lack of physical space</i>  | 25   | 4        |
| <i>Lack of parent interest</i> | 25   | 7        |

**Source:** Project survey

c) Qualitative evidence on the schools’ operations

The qualitative study found that all the schools were in use. Apart from primary education, they were also being used for adult education (La Empalizada), day care (El Guayabo) and community meeting place (all cases). The growth of the school population had led, in some cases, to the hiring more teachers (La Empalizada) and in one case the school is now too small for its student population (El Guayabo). According to some respondents, the construction or improvement of the school had contributed to increasing students’ productivity and lowering the desertion rate, via improved parent and student motivation.

**Testimonies: the impact of primary schools supported by FHIS 2**

**Guanijijil**

“...From this sector, including those on the riverside and Guanijijil, many children out of school, because it was too far away. I had two kids that were in school but they dropped out because it was too far.... The distance was about 8 to 10 kilometers...they could not go because they were too small; some paths were through a stream that would flood. That is why I stopped sending them. One got up to fourth and the other only got to second grade. *Woman, in Mixed focus group.*

**La Empalizada**

Well, I think that the children study today in a better environment and because they are in a nice classroom, they put more care into learning; they are freer to do that. Before, they used to walk in tight groups and now they move about more freely and go out happily to play. The classroom looks nice and it stands out in the community. It is a good piece of work, yes.... In the old school there was lots of desertion of the older kids, now all the children are still coming. About 30 adults are attending the literacy course with the PRALEBAH. *President of the Patronato .*

**4. Water projects**

a) Qualitative evidence

To the respondents in the qualitative study, the benefits offered by the water projects were clear. In Barrio Subirana, the project ended the population’s dependence on contaminated well water. In Las Metalias, there was an old system, which was outgrown by the population, forcing many households to drink river water and last year there were cases of cholera. In San Miguelito there was an old system that had been damaged by the rains; and the FHIS paid to repair the dam and purchase new pipes. The interviewees agreed that these projects had improved health conditions.

b) Evidence from the project survey on the usage and sustainability of completed water projects

FHIS had invested in production systems (50% of cases); distribution tanks (37%); secondary conduction lines (16%), secondary networks (15%) and well fields (13%). However, in the systems studied, the investment led on average to only a 7% increase in connections.

All the systems studied were operating. 50% of them were in the charge of a community water board (*junta de agua*); 42% were municipal and 8% were run by the SANAA. All had a cadastre of users and only one of the 12 systems had no income of any kind. However, 83% reported that their incomes did not cover their operational costs. 25% of the systems received support from an NGO and 25% received support from SANAA; the others had no technical assistance.

Income performance was generally mediocre. Where FHIS had invested, the average monthly income per connection was L.10 (Table 33), which is below the average for systems operated by community water boards (L.11.6) and municipal systems (L.14.2) reported in a recent study (ESA / FRISA 1998). However, the incomes of systems where FHIS had invested were much better than those who are still pending investment (L.5.6).

**Table 33**  
**Income of the water systems**

|   | FHIS  | Non-FHIS |
|---|-------|----------|
| Income per connection / month, L. (average) | 10.0  | 5.6      |
| Total income /months, L. (average)          | 5,420 | 5,117    |

Source: Project survey

**Table 34**  
**Staffing of water systems**

|                             | FHIS | Non-FHIS |
|-----------------------------|------|----------|
| <i>Per 1000 connections</i> |      |          |
| Paid                        | 2.35 | 2.33     |
| Volunteers                  | 1.07 | 0.78     |
| Total                       | 3.42 | 3.11     |

Source: Project survey

The system’s operation, in all cases, was charged to plumber; no engineers were employed within the sample of projects visited. The average staff per thousand connections is very low, at 3.4 for the “FHIS” group and 3.1 for the “Non-FHIS” group (Table 34). The rural systems depend more on volunteers and there are more volunteers in the “FHIS” group than in the “Non-FHIS” group. These staffing levels are similar to those normally found in this type of systems in Honduras. According to a recent study, water boards have an average of two employees per thousand connections and municipal systems have four. (ESA / FRISA 1998).

**Table 35**  
**Operational problems in water systems**

| <i>% mentioning each problem</i> | FHIS | Non-FHIS |
|----------------------------------|------|----------|
| <i>Low production</i>            | 50   | 21       |
| <i>Network problems</i>          | 25   | 21       |
| <i>Low pressure</i>              | 0    | 13       |
| <i>Lack of accessories</i>       | 19   | 4        |
| <i>Source contamination</i>      | 19   | 13       |

**Source:** Project survey (opinion of the person in charge of operating the system).

The main problems in the systems which had received FHIS investments, according to the person in charge of running the system, were: low water production (50% stated this); design problems or an obsolete network (25%); lack of equipment (19%) and source contamination (19%) (Table 35).

**Testimonies: impact of FHIS water projects**

**Subirana**

You know that water is part of health. In the past, the children here suffered from the chest, and with malaria. Sometimes you made a small well and as soon as you hit water you used it and that was not good water. Now (today) children do not suffer anymore, there is water for even taking a bath. Well, yes, we have seen a change.  
*President of the Patronato.*

**Las Metalias**

Well, it turns out that there wasn’t enough water and during summer it would fill with frogs and that was a problem. We used to drink water from the first dam we built. *Men’s focus group.*  
...an old dam...some families did not receive water. The community started growing, and families drank water from the river... There were some cholera cases last year. *Women’s focus group.*  
Now we have good quality water... It has been purified completely, ...the idea is that water has to be chlorinated” *President of the Patronato.*

**San Miguelito**

The drinking water project was very good for this community because before we had many problems with water shortage. Thanks to the institutions that collaborated...like FHIS, ALAS 8620 and the neighbors...*Primary School Director.*

**5. Sewerage projects**

Seven of the eight sewerage projects visited in the “with project” group were operating.

The exception was the case of 14 de marzo, where SANAA’s authorization of the connection to the main collector was on hold, pending payment of the connection fee. The target date to complete payment was September 1998 (fieldwork was done in July of that year). SANAA had reportedly promised to authorize the connection so long as the majority of the community had paid by that date.

In all but one of the cases evaluated, the local informants said there was no problem with the system’s operating; one case mentioned overflowing problems in winter which is probably indicative of a lack of separation between the sanitary and rainwater drainage systems. However, beyond this simple statement, it is difficult to say much about the sustainability of FHIS’ sewerage works.

Four of the investments studied were located in Tegucigalpa, operated by SANAA and two were in San Pedro Sula, operated by DIMA. In each case FHIS had built new local collection networks that formed part of the metropolitan system. It makes little sense to think about the “sustainability” of these separately from that of the metropolitan system, and the latter is beyond the scope of the present study. In these cases, local community leaders knew nothing about the operation of the system.

Community water boards operated the other two FHIS investments studied. These were simple gravity collector systems, with neither pumping, treatment or other complex elements related to their operation and maintenance, so that there was neither a technical nor a financial problem of sustainability to address.

In almost all the cases reviewed in the qualitative study, the sewerage investment was made in order to replace obsolete latrines. The latrines were full and overflowed into the street during the rainy season, producing bad odors and a proliferation of mosquitoes with the concomitant risk of malaria and other illnesses. In many of the dwellings there was insufficient space to build new latrines.

In three cases, there were problems with relatively low rates of connection to the systems (14 de marzo, Marale and Santa Marta). Those not connected generally said that this was due to the lack of money to cover connection costs (both the payment of the right to connect and the cost of the pipework and purchase of a w.c.). In 14 de Marzo there was the further complication of the need for some households to raise their w.c.s above the level of the sewer, and to negotiate with neighbors to run the pipes over their land. In Marale, where two years had passed since the completion of construction, the municipal authorities argued that the problem of low connection rates arises from the “negligence” and “conformism” of the population. In the men’s focus group it was suggested that problems with the potable water system would lead in future to problems with the operation of the sewerage system (due to insufficient volumes of water to maintain the flow).

#### **Testimony: FHIS 2 sewerage projects**

##### **Colonia 14 de marzo**

“Many of us had full latrines and we had no more space to build others. We live at the bottom of the hill and the wastewater from the houses above ran down to our houses.” *Women’s focus group.*

“At this moment the sewerage system is still not in use, because the connection to the collector has not been made. It is practically finished, but no one is using it.” *Women’s focus group.*

##### **Marale**

*Interviewer:* Some neighbors have told us that they don’t have enough money to pay for the materials and labor needed to connect to the sewer. Others have told us that there is lack of enthusiasm from the people to make the connection. How do you see this?

*Ex-Mayor:* The second version is correct. There is lack of motivation. It is not poverty because you don’t need thousands of lempiras for the connection.... We made a study of the economic conditions of households and there are few, maybe 2% of the population that would have difficulties.

## **6. Latrine projects**

Once constructed, latrines do not require social organization of resources for their operation, so many of the themes related to sustainability are not relevant. However, it remains valid to ask whether they are being used and are adequately maintained.

The usage of latrines will be discussed in section F.3, below. The quantitative findings on maintenance were reported above in Table 23 (p.40). Eighty per cent of the latrines inspected during the project survey were found to be in good condition. However, the condition of doors and seats was more problematic (only 56% were in good shape) and cleanliness was assessed as “good” in only 54% of the cases; suggesting the need for more training on the use of the latrines.

The qualitative study found that the operational adequacy of latrines varies between localities and that the training given to the users is an important factor. Where the community has been trained for the adequate use, a better panorama of hygiene and appropriate usage was observed. In the case of El Naranjo training was planned as part of the project; in Barrio Villafranca, this was not the case.

**Testimony: the impact of FHIS 2 latrine projects**

“The situation here was terrible because, people went to the toilet in the open air. This project has been of great benefit to us, because before you could see feces in the water sources... but thank God now it is different.” *Men’s focus group, El Naranjo.*

Latrines operate better and last longer where the soil is absorbent (non rocky) and dry and can be a last solution if the households have enough space to replace them as they fill up. The cases of Villafranca and El Naranjo illustrate

two extreme situations in this regard. In Villafranca the soil is rocky and not absorbent. When the field work for this study was carried out, the latrines there were already coming to the end of their useful life and overflowed easily in the rainy season, causing a risk of infection. The plots were so small that some latrines were located in odd places such as side streets, household entrances and even in the kitchen. In El Naranjo, the soil had allowed the construction of deeper pits and the housing plots were big enough for replacement. Since there was now a good drinking water system (thanks to the joint work of the community and a local NGO), many of the replacement latrines would be flushable.

**7. Impact of FHIS projects social capital formation: training for the sustainability**

It is to be expected that infrastructure projects will have a positive impact on social capital when they offer appropriate training to establish a social control of the construction phase and to leave an organizational legacy that will give continuity to the collective learning process and thereby guarantee the maintenance of the works. The evaluation sought to establish to what degree FHIS projects are contributing to the accumulation of social capital in this sense.

The qualitative investigation found that training had been provided in six of 15 cases. Only in one case was there *ex-ante* training geared to establish community participation in the construction phase (El Naranjo). In the other five cases (Las Metalias, San Miguelito, Guanijquil, San Francisco and Villafranca) *ex-post* training was given, aimed to assure the maintenance of the works<sup>58</sup>.

Some communities were satisfied with the training received, but others considered it deficient. The best results were obtained where the training left an organizational legacy, such as a Water Board, Parents Committee or Health Committee. These had become fundamental to the sustainability of the projects, channeling the participation of the communities. In general, the communities felt they needed more training, especially when they were in charge of maintenance and administration (as the case of many rural water projects).

The study team found that the projects without a “training” component contributed little to human capital formation in the areas of organizational capacity, knowledge and attitudes relevant to maintenance (repairs) and sustainability (optimum operation, accumulation of funds to finance future extensions) of the project<sup>59</sup>. *For details on the training and human capital formation experience of both FHIS and non-FHIS projects see part VI of Annex 15).*

**8. Maintenance of the works: qualitative evidence**

There is a long step between the community declaring itself the owner of the project and even understanding in theory the basic rules of maintenance, and putting all this into practice. In this

<sup>58</sup> As explained in the methodological notes, the sample originally included only two projects that had a training component. To deepen the study of the effect of training, it was decided to add another three, increasing to five the number of projects deliberately chosen because they had a training component. The sixth case where training had taken place was the health post project of San Francisco where the community had received *ex-post* training. It was not clear whether this training was part of the FHIS project or was an initiative of the Health Ministry.

<sup>59</sup> Of course there is a medium and long term contribution in the form of life improvement and opportunities that the projects make possible, for example, the effect of a school on the education of the population.

regard, none of the cases studied showed fully satisfactory results. In many cases, problems remained unresolved and even tended to deteriorate, reflecting the community’s practical inability to resolve them either directly or through appeal to the competent authority. This incapacity arose from some combination of lack of initiative, lack of organization and lack of economic resources. The following paragraphs illustrate some of the maintenance problems that were observed by the field team.

**Drinking water projects:** In urban areas maintenance was mainly charged to national or municipal entities and financed (inadequately) through the tariff, without any community involvement as such. In rural areas, the administration tends to be in hands of Water Boards that generally receive training in basic plumbing and administration. Here, there was normally a clear shortfall between the tariff and the system’s maintenance costs. In some cases, problems collecting the tariff aggravated the situation further, due to the Water Boards poor capacity for either persuasion or sanction. Another problem they face is watershed deforestation. The Water Boards resent their lack of authority, other than moral, to stop this process (see box).

**Managing the watershed**

We spoke to Suyapa (the trainer), when she formed the micro watershed committee. (I told her) what you are saying is unreasonable, because protecting the watershed is not only up to us but also up to the government bodies responsible for these things.

Up above they have destroyed the whole forest to cultivate *pataste*. The system for cultivating *pataste* is that they cut down all the trees... and afterwards they scatter the *pataste* seed so it spreads...

I don’t know if they last one or two years, but then (the cycle is repeated) they start cutting all the trees again, two or three hecatres, and sow *pataste* again.... Then the desert appears.

Like I said, this is not only our problem, we feel incapable of solving it.... We started trying to talk to these people (owners of the land being cultivated for *pataste*) and they showed us their shotgun.... It is dangerous.

*Men’s focus group, Las Metalias*

**Sewerage projects:** All but one of the cases studied are located in towns and cities where specialized entities exist to operate them without the need for community organization. In Marale, this is a new role for the municipality, and up to the moment of the study it had proved weak in persuading people to connect to the system.

**School projects:** Traditionally the teachers have been responsible for organizing school maintenance and they have the main role in persuading the community to get involved in this. However, not all teachers were clear on the importance of organizing Parent Associations, and in other cases the teacher had attempted to manipulate the organization and reduce its independence. There was, in general, a lack of clarity of the division of responsibility between the community and the municipality for school maintenance.

**Health projects:** What goes for schools is also valid for health centers, but substituting the nurse for the teacher and the health committee for the parents committee. A particular problem is that of poor medicine supply, which is usually out of the hands of the community, apart from lobbying the Health Ministry.

**Latrine projects:** As already mentioned, in the cities, the main problem was the limited space to replace the latrine once it has exhausted its useful life; this problem gets worse when the ground lacks absorption capacity. Both for the urban and rural communities, the insufficiency of the training programs was clear. Many still use the latrine inadequately or use it for other purposes (see box).

**Testimony: latrine maintenance**

This project has partially resolved the problem. For the people who needed one, a latrine has been built. But his has only solved the problem for a time. If the latrines are built in summer, during winter they give problems, because in some places they overflow and cannot be used.

This causes problems between neighbors because the overflow and stench affects other houses. About a month ago, we had complaints from 10 neighbors, that two latrines had broken, and feces were overflowing and they could not stand the bad smell”.

*Director of Health Center, Colonia Villafranca.*

## F. Impacts of FHIS 2 at household level

Part V of this report has dealt thus far with: FHIS's impact on the coverage of social infrastructure in Honduras (sections A and B); the quality of FHIS works and the problem of supervision (C and D); and with the production of services and its sustainability (E). This final section of Part V addresses the question: what are the measurable development impacts of the program at household level?

As explained in Chapter III, where the evaluation methodology was outlined, the basic analytical procedure used in this exercise is a comparison between households which are receiving services from a health post, school or water and sanitation system improved by FHIS and households whose services have not yet been improved, the latter being drawn from the *pipeline* of projects still under construction at the time of the evaluation. Expected impacts were defined for each project type and the corresponding indicators were gathered in the household survey. The matrix presented in Annex 2 shows the variables, indicators and sources for each expected impact. Chapter III gives more detail on the methodology.

### 1. Education

It was hypothesized that FHIS investments on building or improving primary schools would have a positive impact on the gross enrollment rate (that is, on educational coverage) and on the age-for grade statistics, which show what proportion of children are in the grades they should have reached a their age, compared with the situation in similar places where FHIS had not yet intervened. The improvement in age for grade was the expected product of improved enrollment rates coupled with reduced desertion and failure rates due to the improved quality of the educational environment. The specific indicators chosen for analysis were the following:

- % of children aged 6 to 12 years enrolled in school, in the households "with" and "without" project, based on the household survey data; and
- % of children with a satisfactory age-for-grade performance, defined as follows: a child of 8 years of age should have completed at least the first grade; a child of nine, the second grade; a child of 10, the third grade, etc. Once again, the evaluation is based on a comparison of households "with" and "without" project, based on the household survey data.

#### a) FHIS' impact on the probability of being enrolled in a primary school

The hypothesis is that the FHIS intervention would result in an increase the gross enrollment rate for children between the ages of 6 to 12. The survey results reported in Table 36 show that the gross enrollment rate in households "with" project is exactly the same as that for those "without project" (89%), which suggests that there is no impact of the project in the gross enrollment rate.

Multivariate analysis was undertaken to check for the possibility that a positive impact of the FHIS on enrollment rates was being hidden by the effect of differences in the impact of other independent variables between the comparison groups. To this end, a logistical regression was run including a variety of independent variables that might be expected to affect the probability that a child attends school (the dependent variable).

The variables analyzed were: FHIS / non-FHIS school; the poverty level of the household, measured by income (expected to be ositively correlated with enrollment), sex of the household

**Table 36**  
**Gross primary enrollment rate for children aged 6 to 12 in communities "with" and "without" FHIS project**

|                      | FHIS       | NonFHIS | Total |
|----------------------|------------|---------|-------|
|                      | Percentage |         |       |
| Not enrolled         | 11         | 11      | 11    |
| Enrolled             | 89         | 89      | 89    |
| <i>Num. of cases</i> | 384        | 375     | 759   |

Source: ESA Survey CO5m62

head, sex of the student, and urban or rural location.<sup>60</sup> The results of the multivariate analysis suggest that the following factors have a significant impact on the enrollment rate (Table 37)<sup>61</sup>

- In rural locations, the probability of being enrolled decreases (Exp B = 0.34, Sig = .00)
- Household income is correlated positively with the probability of being enrolled (Exp. B = 1.16, Sig = .01)

The other variables included in the model (including the presence of a FHIS investment) had no statistically significant impact on enrollment.<sup>62</sup> We may conclude that FHIS investments had no measurable impact on the enrollment rate, even when other inter-household differences in socio-economic conditions were taken into account.

**Table 37**  
**Results of logistical regression of FHIS impact on the gross enrollment rate for children aged 6 to 12**

| Independent variable   | Type. | Value/1 | Exp B | Sig | R    |
|------------------------|-------|---------|-------|-----|------|
| FHIS support present   | Cat   | No      | 1.34  | .50 | .00  |
| Sex of child = female  | Cat   | Yes     | 1.15  | .57 | .00  |
| Household head = woman | Cat   | Yes     | 1.19  | .56 | .00  |
| Zone = rural           | Cat   | Yes     | 0.34  | .00 | -.14 |
| Percap. H.hold income  | Cont  | n/a     | 1.16  | .01 | .10  |

**Notes:** The SPSS results are in annex 13. Cat= categorical, cont. = continuous. Sig = significance of Log LR when the term is removed from the model. Number of cases: 733. 1/ This is the value assumed by the categorical variable.

b) The impact of FHIS on grade for age in primary education

Honduras has a high gross enrollment rate for primary education (close to 100% in most of the country). However, enrollment alone is not enough. For educational success, children must be kept in school through the year and pass the grade. Once a child is enrolled, this outcome depends in large part on the quality of primary education. In recent years, the SEP has worked to improve primary education quality, with the support of agencies such as USAID, KfW, and the World Bank. This program aims to reduce the number of single-teacher / multi-grade classrooms and improve the supply of classrooms, desks, and educational materials. These are expected to lead to reduced desertion and failure rates. FHIS has participated in this program through the building of additional classrooms to facilitate the reduction of the number of single-teacher schools, by supplying desks and by renovating deteriorated buildings.

The desired outcome of these efforts is an increase in the proportion of children who are up to date with their education (that is, at the right grade for their age). For this reason, the evaluation sought to establish whether there was any difference in the proportion of children who were up to date with their primary education between households “with” and “without” a completed FHIS education project. The analysis was undertaken for children aged between the ages of 8 (when at a minimum they should have completed first grade) and 13 (when they should have completed sixth grade). It was hypothesized that the FHIS investment would increase the proportion of children at the right grade for their age.

<sup>60</sup> Various independent variables that might be expected to affect enrollment rates were excluded from the analysis, for the following reasons. A) Childcare responsibility for a younger sibling. Only 1.5% of the children of school age were found to have childcare responsibilities for younger brothers or sisters that might keep them out of school, so this factor is unlikely to have an important impact on the enrollment rate and was not included in the multivariate analysis. B) In general, independent variables that might be auto-correlated with the FHIS’s intervention, such as the condition of the building, were not included in the analysis. C) It was decided not to use UBN as a poverty proxy since UBN reflects the school attendance rate, which would result in circularity. For this reason, income was chosen to represent poverty.

<sup>61</sup> The statistic that measures size and direction of the impact of each independent variable on the dependent variable is Exp (B). When Exp B = 1, the independent variable does not tend to reduce or increase the probability of being enrolled. If Exp B > 1, an increase in the value of the independent variable increases that probability, and when Exp < 1, it reduces it.

<sup>62</sup> When Sig > 0.1, the impact of the independent variable (as reflected in the Exp B statistic) is not statistically significant

**Table 38**  
**Proportion of children up to date with their primary education**

|                                       | Age                         |           |           |           |           |           | Aver      |
|---------------------------------------|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
|                                       | 8                           | 9         | 10        | 11        | 12        | 13        |           |
| <i>% of the children in the group</i> |                             |           |           |           |           |           |           |
| <b>Completed grade level:</b>         | <b>With FHIS project</b>    |           |           |           |           |           |           |
| None.-Pre.-Alph.                      | 9                           | 0         | 3         | 0         | 1         | 2         |           |
| Primary 0 Year                        | 19                          | 11        | 10        | 4         | 4         | 4         |           |
| Primary 1 Year                        | 38                          | 10        | 18        | 9         | 6         | 5         |           |
| Primary 2 Years                       | 35                          | 56        | 27        | 16        | 5         | 16        |           |
| Primary 3 Years                       | 0                           | 22        | 24        | 27        | 13        | 19        |           |
| Primary 4 Years                       | 0                           | 1         | 18        | 22        | 15        | 8         |           |
| Primary 5 Years                       | 0                           | 0         | 1         | 22        | 37        | 5         |           |
| Primary 6 Years                       | 0                           | 0         | 0         | 0         | 2         | 3         |           |
| Secondary-Superior                    | 0                           | 0         | 0         | 0         | 17        | 37        |           |
| <b>% not up to date</b>               | <b>28</b>                   | <b>21</b> | <b>57</b> | <b>57</b> | <b>44</b> | <b>59</b> | <b>44</b> |
|                                       | <b>Without FHIS project</b> |           |           |           |           |           |           |
| None.-Pre.-Alph.                      | 8                           | 0         | 7         | 0         | 0         | 0         |           |
| Primary 0 Year                        | 39                          | 17        | 1         | 10        | 1         | 0         |           |
| Primary 1 Year                        | 35                          | 29        | 8         | 12        | 2         | 0         |           |
| Primary 2 Years                       | 18                          | 35        | 46        | 24        | 19        | 7         |           |
| Primary 3 Years                       | 0                           | 19        | 28        | 12        | 15        | 25        |           |
| Primary 4 Years                       | 0                           | 0         | 9         | 22        | 30        | 10        |           |
| Primary 5 Years                       | 0                           | 0         | 2         | 17        | 13        | 35        |           |
| Primary 6 Years                       | 0                           | 0         | 0         | 0         | 6         | 5         |           |
| Secondary-Superior                    | 0                           | 0         | 0         | 3         | 15        | 18        |           |
| <b>% that is not up to date</b>       | <b>47</b>                   | <b>46</b> | <b>61</b> | <b>58</b> | <b>66</b> | <b>77</b> | <b>59</b> |

**Source:** ESA Household Survey. **Note:** The gray shadow indicates the combinations of age for grade that are below the desired norm; that is, children that are not up to date.

**Table 39**  
**Results of logistical regression of factors that influence being up to date in primary education for children aged 8 and 9**

| Indep.Variable           | Type | Value | Exp B | Sig  | R    |
|--------------------------|------|-------|-------|------|------|
| FHIS support             | Cat  | No    | 0.38  | .099 | .05  |
| Sex of h/hold head       | Cat  | Fem   | 0.267 | .003 | -.15 |
| Per capita h/hold income | Cont | n/a   | 1.004 | .00  | .20  |
| Geographical zone        | Cat  | Rural | 2.46  | .02  | .11  |
| Sex of child             | Cat  | Fem   | 1.33  | .42  | .00  |
| Attended pre-school      | Cat  | No    | 0.56  | .13  | -.03 |
| Education of h/hold head | Cont | n/a   | 1.28  | .00  | .17  |

**Note:** SPSS output tables are in Annex 13. Note: Cat= categorical, cont = continuous. Num. of cases: 570.

0.38, Sig. 0.099) Other factors which were found to have an influence on grade-for-age included: the sex of the head of household; household income; geographical location (urban or rural); the child's sex (girls were found to do better, but the Sig is very low); the education of the head of household; and preschool attendance. The coefficients for these variables are generally consistent with those reported in other recent studies of the factors which affect success in Honduran primary education, except for the counter-intuitive value registered for the impact of being in a rural area (Table 39).<sup>63</sup>

The results, shown in Table 38, suggest that FHIS has a strong positive influence on grade-for-age. In the area of influence of schools that had not received FHIS support, 59% of the children were behind the expected grade level, compared with only 44% in areas "with" a FHIS project.

The effect is especially marked in children aged 8 and 9, who had most chance to avoid getting behind due to the investments undertaken by FHIS 2 in the two previous years. For these cohorts, the percentage of children who are behind in areas where FHIS had invested is barely half that registered in other areas (28% and 21% versus 47% and 48%, respectively).

Once again, multivariate analysis was undertaken to establish whether these differences are attributable to factors other than the FHIS investment. This analysis was undertaken for the cohorts aged 8 and 9 years where the program had most chance of making a difference and where the difference observed in the descriptive statistics was most marked

The results of this analysis confirm that the observed difference is indeed attributable to FHIS, even after taking account of other factors. The probability of being up to date is much lower in communities which had not received FHIS support (Exp B =

<sup>63</sup> Singh Bedi, A and J. Edwards (1977)

## 2. Health

It was hypothesized that FHIS investments in rural health posts would improve the quality of the service, as perceived by the users, and that this would lead to increased take-up of the health services offered by the clinic. The specific variables to be evaluated were the following:

- % of those who had suffered an acute health problem in the past month, who had sought professional medical help
- % of children under one year old who are up to date with their vaccines<sup>64</sup>

### a) FHIS impact on seeking medical attention for health problems

When FHIS constructs a new rural health post or improves an existing one, it is expected that there will be an increase in take-up of the services of the health post, for both preventative and curative care. In Honduras, a large proportion of preventative procedures are carried out when families visit a health center due to an illness. Therefore, the take up of curative medical care is likely to be correlated with the take up of standard preventative procedures and controls.

However, an increase in the use of services of any health post could be due in part to the diversion of some users from other centers (private doctors or other public health centers). To the extent that the users are diverted from other centers, the benefit from the FHIS investment is smaller, compared with stimulating the use of professional services by people who otherwise would have treated themselves.

For these reasons, the variable chosen for analysis was the overall probability that a person will seek curative medical attention when facing a health problem (not the probability that they will use the particular health post supported by FHIS). This assures that FHIS is not credited for “crowding out” demand from other centers, but only for increasing the total take up of primary health services.

### i. Descriptive statistics

The household survey recorded the health problems of each household member during the past month. Altogether, 837 problems were identified. For each case, a detailed record was made of the response to the illness (table 40).

Where FHIS had invested in rural health posts, 51% of people with problems had sought medical attention, compared with only 41% where the FHIS investment had not yet been carried out (table 40). Therefore FHIS’ investment apparently led 10% of the sick to use professional medical services who otherwise would not have done so.

In addition, in the group “without FHIS” 29% of sick people traveled to a health center located in another village to seek attention. In the group with FHIS almost

**Table 40**  
**FHIS impact on the decision to seek medical attention for acute health problems**

|                                       | FHIS              | No FHIS    |
|---------------------------------------|-------------------|------------|
|                                       | % of total with a |            |
| Did not seek attention                | 49                | 59         |
| Sought attention                      | 51                | 41         |
| <b>Where they were attended:</b>      |                   |            |
| FHIS Health Center                    | 35                | 4          |
| Other MSP Health Center               | 6                 | 29         |
| MSP Volunteer                         | 1                 | 0          |
| <b>Sub total, MSP primary network</b> | <b>41</b>         | <b>33</b>  |
| MSP Hospital                          | 2                 | 3          |
| IHSS                                  | 0                 | 0          |
| Private provider                      | 6                 | 4          |
| Traditional healer                    | 0                 | 0          |
| Other                                 | 1                 | 0          |
| <b>Number of cases</b>                | <b>338</b>        | <b>499</b> |

Source: ESA Survey CO1M52. Number of cases: 837

<sup>64</sup> In the original methodology it was proposed to study vaccination coverage for children under five; however, the standard MSP methodology nowadays emphasizes the first year, therefore, the age range was reduced.

everyone was treated in the local center, leading to important savings in time and money for the people who no longer have to travel.<sup>65</sup>

Another positive finding is that the FHIS investment had no apparent impact on the demand for private medical services. This was very similar in the two groups, and was actually slightly higher in the FHIS group (6%) than the Non FHIS group (4%). So there is no evidence that the FHIS investment leads to “crowding out” of private provision.

*ii. Multivariate analysis*

The multivariate analysis confirms that the differences observed above are attributable to the FHIS investment. The decision to seek attention was modeled, including the following independent variables: the existence of a FHIS investment, the age and sex of the sick person, type of sickness (respiratory, diarrhea or other), income per capita of the household, and the education of the head of household (Table 41).<sup>66</sup>

**Table 41**  
**Results of the logistical regression of factors that influence the decision to seek attention**

| Indep. Variable      | TypeVar. | Value    | Exp B          | Sig | R    |
|----------------------|----------|----------|----------------|-----|------|
| FHIS Support         | Cat      | No Proy. | 0.63           | .02 | -.05 |
| Age i                | Cat      | <5       | Reference Val. |     |      |
| Age ii               | Cat      | 5-13     | 0.42           | .00 | -.11 |
| Age iii              | Cat      | 14-50    | 0.52           | .00 | -.09 |
| Age iv               | Cat      | > 50     | .043           | .00 | -.08 |
| Edn of h/hold head   | Cont     | n.a.     | 1.09           | .01 | .07  |
| Type of sickness i   | Cat      | Respir.  | Reference Val  |     |      |
| Type of sickness ii  | Cat      | Diarrhea | 0.87           | .42 | .00  |
| Type of sickness iii | Cat      | Other    | 0.36           | .00 | -.14 |
| Sex of h/hold head   | Cat      | Fem      | 1.14           | .57 | .00  |
| Sex of patient       | Cat      | Fem      | 1.16           | .35 | .00  |
| Per capita income    | Cont     | n.a.     | 1.01           | .38 | .00  |

**Note:** The SPSS output tables are in annex 13. Note: Cat= categorical, cont = continuous. Number of cases: 779.

The results confirm that the population “without project” is less likely to seek professional attention for a health problem than that in the area of influence of a health post which received FHIS support (Exp B = 0.63, Sig = .02). Other factors found to have a statistically significant influence on the decision to seek attention are: the level of education of the household head (positive influence); that the patient is under five (positive influence); and having a respiratory illness (positive influence).

b) FHIS impact on vaccination coverage

To determine the vaccination coverage of the populations “with” and “without” a FHIS investment, the study proposed to estimate vaccination coverage based on: (a) the estimate for the population aged under one in the area of influence of the health post, taken from the Health Ministry’s family health census (CEFASA); (b) Health Ministry data for the number of vaccines administered over the last year; and (c) the official target number of vaccines of each sort per child.

<sup>65</sup> The cost of travel (in both time and money) is part of the total cost (or price) of using medical services, incurred by the user. A reduction in this price due to lower travel costs increases the consumer surplus of those who would anyway have used the service. The price reduction is also likely to lead to an increase in demand, whose importance will depend on the price elasticity of demand.

<sup>66</sup> No independent variables related to the Health Post’s quality were included in the estimation because these should be positively correlated with FHIS investment. It is hoped that FHIS’ investment will act as a catalyst that has a positive impact on maintenance, on opening hours, on personnel provision, etc. If so, the inclusion in the model of such factors could obscure the FHIS’ impact. For this reason, no independent variable that might potentially function as part of the “transmission chain” of FHIS’ impact was included in the model in its own right.

Unfortunately, due to deficiencies in the statistical sources, this exercise could only be completed for 4 health posts in the “FHIS” group and five posts in the “without project” group. This is too small a number of observations to be able to trust the results.<sup>67</sup>

### 3. Latrines

#### a) Study hypotheses

It was hypothesized that where FHIS had constructed latrines, a greater percentage of the population would have access to a hygienic sanitary facility and be using it, and that this would in turn lead to a reduction in diarrhea incidence. The specific indicators used for the analysis were the following:

- % of households with a hygienic sanitary facility

**Table 42**  
**FHIS impact on latrine coverage**

|   | FHIS | Non<br>FHIS |
|---|------|-------------|
| <b>Type of sanitary facility</b>          |      |             |
|   | % of |             |
| Flushable w.c.- exclusive use             | 2    | 9           |
| Flushable w.c., shared                    | 1    | 1           |
| Latrine exclusive use                     | 88   | 24          |
| Latrine shared                            | 10   | 2           |
| No sanitary facility                      | 0    | 65          |
| Total                                     | 100  | 100         |
| <i>Num. of observations</i>               | 163  | 150         |
| <b>Received support to build latrine?</b> |      |             |
| Yes, from FHIS                            | 98   | 19          |
| Yes, other agency                         | 0    | 40          |
| No  | 0    | 26          |
| Does not know                             | 2    | 16          |
| Total                                     | 100  | 100         |
| <i>Num. of observations</i>               | 157  | 70          |
| Weighted estimates                        |      |             |

**Source:** ESA survey. C17M71

<sup>67</sup> In fact, within these small samples, vaccination coverage was found to be greater in the “without project” group than the “FHIS” group (88% vs. 59% for polio; 85% versus 58% for DPT and 83% versus 37% for BCG. However, these findings are not statistically significant.

- % of households with FHIS latrines who use them
- % of household members who had diarrhea in the last month

b) Descriptive statistics

The household survey produced striking evidence of the impact of FHIS on the proportion of households with a hygienic sanitary facility. In the group “with project” 100% had a hygienic facility, compared with only 35% in the group “without project” (Table 42). The results also confirm that project beneficiaries use their latrines and that the incidence of problems with them is relatively small (Table 43).

Moreover, the diarrhea incidence of 6.6% in the group with a FHIS latrine project is significantly lower, than that of 10.1% found for the group without project, a relative reduction of 35% (Table 43).

c) Multivariate analysis

A logistical regression was run to see if the positive impact of FHIS latrine projects apparent in the descriptive statistics was attributable to other independent variables that might reduce the incidence of diarrhea.

The dependent variable in the regression is whether an individual had diarrhea during the last month. The independent variables are: type of sanitary facility (w.c; FHIS latrine including raining on its use; FHIS latrine with no training; other latrine; and no sanitary facility); type of water service (piped water, well or other); location of the water (within or outside the property); whether or not the dwelling has a dirt floor; the education and sex of the household head, the age and sex of the individual; and the location (rural or urban).

The regression results are reported in Table 44. The variables that had a statistically significant impact (with Sig <0.1) are: the absence of a sanitary service, which increases enormously the probability of suffering diarrhea (Exp B = 2.6, Sig = .05); the use of any water sources

**Table 43**  
**The use of latrines and incidence of problems**

|  | FHIS | Non FHIS |
|--|------|----------|
| <i>Do you always use the latrine?</i>                              |      |          |
| Everyone uses it   | 100  | 98       |
| Some use it  | 0    | 1        |
| Nobody uses it   | 0    | 1        |
| Total  | 100  | 100      |
| <i>Num.of observations</i>   | 157  | 70       |
| <i>Have you had any problem with the latrine in the past year?</i> |      |          |
| Yes  | 11   | 8        |
| No   | 89   | 92       |
| Total  | 100  | 100      |
| <i>Num.of observations</i>   | 157  | 70       |
| <i>Type of problem:</i>  |      |          |
| The floor has deteriorated   | 14   | 15       |
| It fills with water  | 44   | 41       |
| It leaks   | 14   | 0        |
| It broke   | 14   | 0        |
| It collapsed   | 13   | 36       |
| The lid broke  | 0    | 8        |
| Total  | 100  | 100      |
| <i>Num.of observations</i>   | 14   | 9        |
| <i>% of persons that suffered diarrhea, last month</i>             | 6.6  | 10.1     |
| <i>Num. of observations</i>  | 898  | 796      |

Weighted estimates

Sources: ESA Survey C18M71 & CO3M2

**Table 44**  
**Results of the logistical regression on FHIS' impact on diarrhea incidence**

| Indep.Variable         | Type Var. | Value (cat) | Exp B           | Sig | R    |
|------------------------|-----------|-------------|-----------------|-----|------|
| San Serv = w.c.        | Cat       | Yes         | Reference Value |     |      |
| SS=FHIS Lat + training | Cat       | Yes         | 0.84            | .62 | .00  |
| SS=FHIS Lat – training | Cat       | Yes         | 1.05            | .89 | .00  |
| SS= Non FHIS Lat       | Cat       | Yes         | 0.27            | .44 | .00  |
| SS= none               | Cat       | Yes         | 2.60            | .05 | .05  |
| Water Ser.= piped      | Cat       | Yes         | Reference Value |     |      |
| Water Ser. = well      | Cat       | Yes         | 0.01            | .57 | .00  |
| Water Ser = other      | Cat       | Yes         | 1.84            | .01 | .08  |
| Water source out prop. | Cat       | Yes         | 0.53            | .48 | .00  |
| Dirt floor             | Cat       | Yes         | 0.85            | .50 | .00  |
| Edn head of H/hold     | Cont      | n.a.        | 0.95            | .21 | .00  |
| Sex head of h/hold     | Cat       | Fem         | 1.34            | .21 | .00  |
| Age of person          | Cont      | n.a.        | 0.97            | .00 | -.13 |
| Sex of person          | Cat       | Fem         | 0.97            | .90 | .00  |
| Rural location         | Cat       | Yes         | 0.76            | .30 | .00  |

Note: SPSS output tables are in annex 13. Note: Cat= categorical, cont = continuous. Num. of cases: 1654.

other than piped or well (Exp B =1.84, Sig = .01); and the

age of the person, with an inverse relation to the probability of suffering diarrhea (Exp B = 0.97, Sig = .00).

These results confirm that the construction of sanitary facilities and water systems has a very positive impact on health conditions. However, no statistically significant impact was found from having a FHIS latrine rather than other types of sanitary facility or from receiving training in the use of the latrines.

**4. Drinking water**

It was hypothesized that FHIS investments in water systems would have a positive impact on water supply and on health conditions. The specific indicators studied were the following:

- % of households with: continuous water service; non-continuous but daily service; service which is not daily; and with no service.
- Water expenditure of households in money and time.
- Whether the users drink the water, and whether they boil, filter or chlorinate it first.
- % of households with a case of diarrhea in the last month.

**Table 45  
Impact of FHIS water projects**

|   | FHIS                 | Non |
|---|----------------------|-----|
| % of households with piped water          | 92                   | 87  |
| <i>Num. of observations</i>               | 302                  | 306 |
| <b>Reasons for not having piped water</b> | % of without service |     |
| No service exists in the street           | 35                   | 17  |
| Cut off for non payment                   | 0                    | 5   |
| Cannot pay for service                    | 17                   | 31  |
| Has a private well                        | 13                   | 5   |
| Is not allowed to connect                 | 2                    | 1   |
| Negligence                                | 0                    | 3   |
| The land is not legally occupied          | 13                   | 0   |
| Is waiting for sewerage to be available   | 0                    | 2   |
| Is a tenant and owner refuses to pay      | 11                   | 27  |
| No piping installed in house              | 2                    | 10  |
| Has connection to neighbor's supply       | 8                    | 0   |
| Total                                     | 100                  | 100 |
| <i>Num. of observations</i>               | 29                   | 38  |

**Source:** ESA Survey CO4M71

Section V.B.3 concluded that FHIS 2's impact on water coverage in Honduras was small, because it aimed to improve existing systems rather than making new connections.<sup>68</sup> Table 46 confirms this. In the "pipeline" group (who are not yet beneficiaries of a FHIS water project), 87% of the households already have a piped water connection, compared with 92% on the group "with project" (Table 45).

This table also confirms that some households in the area of influence of FHIS water projects still cannot connect because the network does not reach them (over a third of the 8% still without service, or 3% of the total population).

FHIS investments do improve the service quality (Table 39). The average of service days per month is 25 days for the group "with project" versus 18 days for the group "without project" and the average service hours per day is 12.7 "with" project versus 10.9 "without" project. Apparently, this improvement of the service comes without an increase in the cost of operation and maintenance, since the monthly payment of both groups is very similar (L.10.9 versus L.9.3).

FHIS investments reduce the average expenditure on water from alternative (coping) sources to L.15.6, versus L.33.8 for households in the "without project" group, and the time expended each month to fetch water is also reduced (307 minutes versus 349). The volume obtained from coping sources is very similar for both groups: 325 gallons "with project" versus 317 gallons "without project" (Table 46).

As revealed by users' behavior regarding its drinking, the water quality of the FHIS systems is superior, compared with the other systems. In the FHIS group, 53% drink the water without treating it; 37% drink it after boiling or chlorinating it and only 11% do not drink it. In the group without project, only 27% drink it without treatment and 37% do not drink it. However, no impact a diarrhea incidence is observed.<sup>69</sup>

We may conclude that the impacts of FHIS water projects are disappointing. FHIS 2 undertook few water projects oriented towards low income communities in the rural or urban-marginal sectors without piped water connections and instead, concentrated in improve existing

**Table 46**  
**FHIS impact on the water economy of beneficiary households**

|   | FHIS         | Non FHIS |
|---|--------------|----------|
|   | % households |          |
| <b>Service days per month</b>                     |              |          |
| Average   | 25.3         | 18.0     |
| Median  | 30.0         | 15.0     |
| Standard Deviation                                | 8.5          | 11.2     |
| Num.of observations                               | 328          | 185      |
| <b>Service hours per day</b>                      |              |          |
| Average   | 12.7         | 10.9     |
| Median  | 12.0         | 6.0      |
| Standard Deviation                                | 9.9          | 9.5      |
| Num.of observations                               | 328          | 183      |
| <b>Storage capacity, in days of consumption</b>   |              |          |
| Average   | 3.1          | 3.3      |
| Median  | 2.0          | 2.0      |
| Standard Deviation                                | 2.9          | 3.0      |
| Num. of observations                              | 321          | 207      |
| <b>Amount paid for piped water last month, L.</b> |              |          |
| Average   | 10.9         | 9.3      |
| Median  | 7.0          | 8.0      |
| Standard Deviation                                | 34.2         | 5.0      |
| Num. of observations                              | 228          | 122      |
| <b>Water expenditure on alternative sources</b>   |              |          |
| Money expense, L./month, average                  | 15.6         | 33.8     |
| Time expense, min/ month,average                  | 307          | 349      |
| Volume, gal./month, average                       | 325          | 317      |
| Num. of observations                              | 149          | 142      |
| <b>Water quality</b>                              |              |          |
| % that drink it directly                          | 53           | 27       |
| % that drink it boiled ,filtered or chlorinated   | 37           | 36       |
| % that do not drink it                            | 11           | 37       |
| Num. of observations                              | 331          | 210      |
| <b>Diarrhea incidence, last month</b>             |              |          |
| % of affected persons                             | 5.3          | 4.3      |
| Num. of observations                              | 1863         | 1261     |

Weighted estimates; excluding unknowns from the totals

Source: ESA Survey , M71 several tables.

<sup>68</sup> Nationwide estimates of the number of new water connections provided by FHIS 2 were presented in Table 20, page 36.

<sup>69</sup> No multivariate analysis was undertaken of the impact of water and sewerage projects on diarrhea incidence because the descriptive statistics provided no a-priori evidence of such an impact.

systems. The benefits of this sort of investments are real enough, but are much smaller than those to be expected when households are connected for the first time to a piped water service.

### 5. Sewerage

It was hypothesized that FHIS sewerage investments would result in increase coverage and connection rates and that this in turn would result in improved health indicators. The specific indicators analyzed were the following:

- % of households in the network area that are connected or which express an intention to connect themselves within a period of two years.
- Diarrhea incidence in the areas ‘with project’, compared with areas “without project”.

The results of the household survey confirm that where FHIS had undertaken a sewerage project, 92% of households had a sewer main in their street (Table 47). In 74% of the cases, they identified FHIS as the constructor. In contrast, the pipeline group had a very low coverage (only 8% had a sewer in the street). We may conclude that the FHIS investments were effective in increasing sewerage coverage.

The proportion of households already connected to the sewer system in the group “with project” was 44%. This figure seems low. However, there is normally a lag between the construction of a sewer and the connection of individual households, since the private investment needed to connect is significant (around L.2,000 to purchase and install a w.c.). In spite of this, there is already a significant difference between the group “with” and “without” project in the proportion of households connected: 40% in the group “with” versus only 6% in the group “without”.

When asked why they were not connected, 33% blamed the cost of connecting, 23% said they are tenants, 15% said it was pure negligence and 17% said they were in the process of arranging to connect. Only 4% said they were satisfied using a latrine (data not tabulated).<sup>70</sup> Some 58% of those still not connected declared an intention to do so within two years. This would increase coverage to 70%.

The impact of sewers on diarrhea incidence is insignificant. The proportion of households reporting an incident of diarrhea is very similar between the groups “with” and “without” project (5.0% versus 5.3%). This goes to confirm that the key measure to decrease diarrhea is the construction of any sort of sanitary facility, including latrines. Once this has been done, upgrading to a w.c. connected to a sewer has more to do with convenience and comfort than with health.

**Table 47**

**Impact of FHIS sewerage projects**

|   | FHIS | Non FHIS |
|---|------|----------|
| % with a sewer in street  | 92   | 7        |
| Num. of observations  | 208  | 156      |
| Who installed the sewer?  |      |          |
| <i>Community Organization</i>                                     | 5    | 32       |
| <i>Municipality</i>   | 3    | 21       |
| <i>FHIS</i>   | 74   | 0        |
| <i>Other</i>  | 0    | 18       |
| <i>Does not know</i>  | 24   | 47       |
| <i>Total</i>  | 100  | 100      |
| Num. of observations  | 196  | 22       |
| % with sewer in street that are connected to it                   | 44   | 82       |
| % of total households connected                                   | 40   | 6        |
| Num. of observations  | 196  | 22       |
| % of those not connected who say they will connect within 2 years | 58   | 100      |
| Num. of observations  | 47   | 2        |
| Diarrhea Incidence in the last month (% of persons)               | 5.0  | 5.3      |
| Num. of observations  | 1072 | 781      |

Weighted data. Source: ESA Survey M71 several Tables and CO1M2

<sup>70</sup> Detailed tabulations of the survey responses are to be found in Annex 14, in C16M71

## 6. Conclusions: FHIS impacts

This section has presented the evaluation's findings on the development impacts of FHIS 2 at household level, with regard to the following indicators: coverage and achievement in primary education; take-up of primary health services and vaccine coverage; access to basic sanitation (latrines and sewerage) and the resulting impact on diarrhea incidence; and the impact household budgets and health conditions of FHIS water projects. Methodological problems prevented clear conclusions being reached on some of these issues. The main conclusions may be summarized as follows:

- In **education**, no impact on the gross enrollment rate was observed. However, FHIS 2 had a clear positive impact on the "grade-for-age" status of children aged 8 and 9 and this finding is confirmed by multivariate analysis.
- In **health**, the construction of rural health posts had a clear positive impact on the take-up of professional medical services. The proportion of sick people who use professional services increased by 10% (from 41% to 51%) where FHIS 2 had invested in a health post. There is no evidence that FHIS investments crowd out private provision. These findings are confirmed by multivariate analysis.
- In **latrines**, FHIS 2 had reduced the proportion of households without a sanitary facility, from 65% in the group "without project" to zero "with project". In all cases, the beneficiary households really used the latrines and only 11% had experienced operational problems during the previous year. Diarrhea incidence is much lower in the beneficiary households (6.6% "with project", versus 10.1% "without project"). Multivariate analysis confirms a clear association between access to a sanitary facility and reduced diarrhea incidence.
- In **drinking water**, FHIS 2 had little development impact because it created few new connections, and concentrated its efforts on improving existing services. FHIS projects did, however, improve service frequency and water quality.
- In **sewerage**, FHIS 2 had a positive impact on coverage. Since the investments were relatively recent, the connection rate of 44% found in the evaluation study is reasonable. The majority of households still not connected stated an intention to do so within two years. However, no impact on diarrhea incidence was observed.

We can conclude that – in spite of the methodological limitations of the evaluation, mainly rooted in the absence of a baseline study – it has been possible to observe various positive impacts of FHIS investments at household level. The findings reported here give reasonable grounds for believing that the program's investments are producing the desired results in the formation of human and social capital in Honduras.

## VI. Conclusions and recommendations

### A. The choice of projects

This study first discussed the resource distribution of FHIS 2 and the participation mechanisms promoted by the program, seeking to answer the questions: “¿Were the FHIS resources targeted towards the poorest households of the country?” and “¿Were the projects chosen according to the community’s priorities?”

The findings on this point, reported in chapter IV, suggest that FHIS 2 was somewhat more progressive than FHIS 1 in the distribution of its resources and also achieved greater community participation in the selection of projects and beneficiaries, compared with other agencies. As a result, in most cases, an acceptable degree of community “ownership” of FHIS projects was observed.

Nevertheless, there are grounds for concern regarding sewerage and latrine projects, which, according to the household survey, are not normally the community’s first priority. Sewerage projects are also very regressive in a distributive sense.

Nevertheless, the results of this study augur well for the impact of FHIS 2 on social conditions in Honduras. The program’s resources reached the poor and there was a good concordance at local level between the assignment of the resources and the priority needs of population. The good level of “ownership” should favor the projects’ subsequent sustainable operation.

### B. The impact of FHIS

In this part of the study, the study questions were the following:

- ¿How did the coverage of social infrastructure change in the nineties, as reflected in the country’s stock of social infrastructure and in the level of unsatisfied basic needs (UBN), and what proportion of the change was due to FHIS?
- ¿Were FHIS’ projects well built? ¿Have they been properly maintained?
- ¿Was FHIS 2 cost-efficient?
- ¿Are the investments being operated in a sustainable manner to produce the desired service flow? ¿Is there community participation?
- For each type of investment, ¿what evidence exists of positive impacts in social conditions at household level (improved educational attainment, better access to medical attention, better sanitary conditions and reduced sickness)?

Chapter V reported the findings for each of these questions.

#### 1. *FHIS’ impact on social infrastructure*

Honduras experienced a significant reduction in UBN during the nineties and this was especially marked in the sectors where FHIS was investing (water, sanitation and primary education). However, many other programs were also active in these areas and FHIS represented only 9.5% of social spending. To determine the specific impact of FHIS the evaluation analyzed FHIS contribution to the global expansion of each type of infrastructure.

This analysis was difficult due to the lack of information on the expansion of social infrastructure at the national level, coupled with the fact that the FHIS’ MIS concentrates on the control of the project cycle and does not provide data on program outputs (e.g. it does not record the number of primary education classrooms built or improved). A variety of strategies was adopted to deal with these problems. The conclusions were the following:

*Primary schools and classrooms:* Between 1995 and 1998 there was an increase of 11% in the number of primary schools and 15% in the number of primary classrooms in Honduras. FHIS was responsible for 58% of the increase in schools and 49% of that in classrooms. It also renovated 11% of the entire stock of classrooms in the country.

*Rural health posts (CESARs):* Between 1994-1998 there was an increase of 27% in the number of CESARs and FHIS contributed 72% of this. It also contributed 50% of the increase in urban health posts (CESAMOs).

*Drinking water:* FHIS contributed less than 2% of the increase in water coverage between 1994-97. The reasons for this were the following: only a small proportion of FHIS resources were assigned to this area; the cost per connection of the program was very high (three times the norm); and FHIS concentrated on improving existing systems rather than making new connections.

*Sanitation:* 17% of the new sanitary facilities (latrines and sewerage connections) built in Honduras in 1994-97 are attributable to FHIS.

We may conclude that FHIS 2 played a very important role in the expansion of social infrastructure, except in the drinking water, where its contribution was not significant.

It is recommended that FHIS 3 incorporate within its MIS output indicators for each type of project, to facilitate the measurement of program performance. It is also recommended that the Government (through its line ministries or UNAT, working in conjunction with the FHIS' geo-referenced social information system, SIGES) should establish an information system to monitor the coverage of social infrastructure nationwide. In education and health, a simple innovation that would assist the analysis of FHIS impacts would be the incorporation in the MIS of the facility identification codes used by the SEP or MSP.

## **2. The design, construction and state of repair of FHIS 2 projects.**

The household survey reported that the quality of the FHIS projects was generally satisfactory. However, important problems were identified that need attention. Some of these have already been resolved under FHIS 3. Among the most important are the following:

*Supervision:* During FHIS 2 there was insufficient participation by the community and by the future owner of the facility in the supervision process, resulting in a low credibility of the supervision system, in the opinion of many of the people consulted for this study.

*Quality:* Poor finishing and some use of low quality materials.

*Inflexible design:* This was especially marked for schools, and has now been corrected.

One of the most important recommendations of this study is the need to change the relationship between the FHIS, which is an *agent*, and its clients, who are the *principals*. FHIS' outputs should comply with the requirements of the community and of whatever agency will eventually be responsible for their operation (ministry, municipality or community). To this end, resources should be assigned to strengthen the line ministries' capacity to work with FHIS on project design and supervision.

## **3. Cost-efficiency of FHIS**

Once again, this was a difficult topic to study, due to the lack of good information on unit outputs of the program. In addition, many other programs do not account for many of their costs, rendering difficult a comparison with FHIS. However, the following conclusions were reached.

*The efficiency of FHIS' contracting mechanisms.* Direct hiring probably results in higher prices in water and sanitation projects, compared with what would result from competitive tendering. However, the difference is not significant (around 13%) and could possibly be corrected without

resorting competitive tendering (e.g. only allowing wholesale prices when the contractor is an engineer).

*Cost per square meter of construction.* Analysis of FHIS costs in health posts and schools shows that they are reasonable compared with industry norms.

*Authorized costs for inputs.* Analysis of the unit costs allowed for standard inputs by FHIS, compared with what is allowed by the World Bank – MSP Nutrition and Health project, shows that FHIS is very economical.

*Cost per connection in water projects* FHIS has a connection cost around three times higher than other programs oriented towards improving water coverage in rural and urban-marginal communities. FHIS should change its contracting scheme for water and sewerage projects to increase community participation.

#### **4. Service production and use of FHIS projects**

Almost all the evaluated projects were operating normally. Of the 46 cases, only two were not in operation (a health post with no personnel yet assigned and a sewerage system that had not yet paid the connection rights to the main collector).

In general, the operating problems found in FHIS projects were typical of those normally observed in the sectors where the program invested. FHIS projects are not apparently free from such problems, which arise from institutional weaknesses within the ministries, municipalities and community organizations that operate them.

*Health:* The productivity of rural health posts built by FHIS is similar to the sector average (relatively low, at just over 9 attentions per post / day). The health posts experience problems with the lack of qualified personnel, lack of medicines and equipment and frequent closures due to meetings and vacations.

*Education:* FHIS schools were all found to be operating and had sufficient teachers and a good stock of desks. No major differences are found, compared with the non-FHIS schools.

*Water:* FHIS water projects had staffing and income levels similar to those normally observed in this type of systems. The average income of L.10 per connection/month is in most cases insufficient to pay for the adequate operation of the system.

*Sewerage.* All but one of the evaluated projects was operating. It is difficult to reach conclusions about the sustainability of the operation of these systems, because most of them were local extensions of big city networks whose operation is part of the metropolitan whole. The other cases evaluated were simple gravity systems, without wastewater treatment, which required little or no operation.

*Latrines.* In general, the evaluated latrines were found to be operating and in an acceptable state of repair, though there were problems with the condition of doors and seats and with cleanliness.

#### **5. Household level impacts**

The goal of social investment is to improve the stock of human capital as reflected in the education and state of health of the population. The study analyzed the impact of FHIS on enrollment and attainment in primary education; on the take-up of primary health services and vaccination coverage; on access to basic sanitation (through latrines and sewerage) and the impact of this on diarrhea incidence; and on access to water and the impact of this on household budgets and health.

In lieu of a “baseline” study, the analysis was based in a comparison between households that had already benefited from a FHIS investment and those that were slated to become beneficiaries of pipeline projects for the same types of investment. The latter represent the

“without project” situation. Both descriptive statistics and multivariate analysis were used (logistical regressions).

It is important to bear in mind that in 1998, when the study was undertaken, the project pipeline of FHIS 2 was rather reduced. As a result, the group of projects selected for the “pipeline” group is not perfectly representative. It is recommended that for FHIS 3, a more conventional evaluation process be adopted, based on a “baseline” study, to facilitate comparison between the condition of communities before and after receiving the FHIS investment.

The results of the analysis of household-level impacts were the following:

*Education.* No impact can be observed on gross enrollment. However, there is a clearly positive impact on grade-for-age, especially among children aged 8 and 9 who had a chance to avoid getting behind thanks to the recent FHIS investment.

*Health.* The building of rural health posts has a clear impact on the take-up of primary health services, increasing from 41% to 51% the proportion of people that seek medical attention when they are ill. There is no apparent “crowding out” of private provision.

*Latrines* FHIS has a clear impact on latrine coverage, reducing from 65% to zero the proportion of households without a sanitary facility. The latrines it builds are all used and only 11% had operating problems. Diarrhea incidence is 6.6% where FHIS had built latrines, versus 10.1% in the group “without project”. Multivariate analysis confirms a clear inverse relation between having a latrine and the diarrhea incidence.

*Drinking water.* FHIS 2 had little impact on the water economy of the poorest households because created few new connections, concentrating rather on improving existing systems to increase service frequency and water quality. FHIS should pay more attention to building small rural systems that would increase coverage and bring great socioeconomic benefits. It should adopt a model emphasizing community participation and adequate technical assistance, with much lower unit costs.

*Sewerage.* FHIS 2 had a positive impact on coverage. The connection rate is reasonable (taking into account that the investment is recent) and the majority of the households not yet connected expressed their intention of doing so within the next two years. However, no impact was observed on diarrhea incidence.

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